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Issue: D

# Proposed Mixed-Use Development
# 68-80 O'Connell Street, Kingswood

## Traffic & Parking Assessment

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# Table of Contents

# Table of Figures



# Table of Appendices

# 1.0 Introduction

This report has been prepared to accompany a Development Application to Penrith City Council for a proposed mixed-use development at 68 - 80 O'Connell Street, Caddens (Figure 1).

The Caddens area is a large new urban precinct which benefits from ready access to the arterial road system and the major regional facilities available nearby in Penrith CBD. The development site is located in the central part of the Precinct on the corner of O'Connell Street and O'Connell Lane being adjacent to the Western Sydney University (WSU), Kingswood Campus and the existing "Caddens Corner" retail complex.

The proposed development scheme comprises:

- 18 residential buildings (4 stages)
- 545 dwellings (apartments and townhouses)
- 1,110 $m^2$ of retail floorspace (227$m^2$ Food and Beverage)
- basement parking (including the existing at-grade retail parking)
- new access road system

The purpose of this report is to:

- describe the site, the Precinct planning and the proposed development scheme
- describe the existing road network, traffic and transport circumstances
- describe the future road network, traffic and transport circumstances
- assess the suitability of the proposed access roads
- assess the potential traffic implications including the compound development outcome
- assess the adequacy of the proposed parking provision
- assess the proposed vehicle access, internal circulation and servicing arrangements

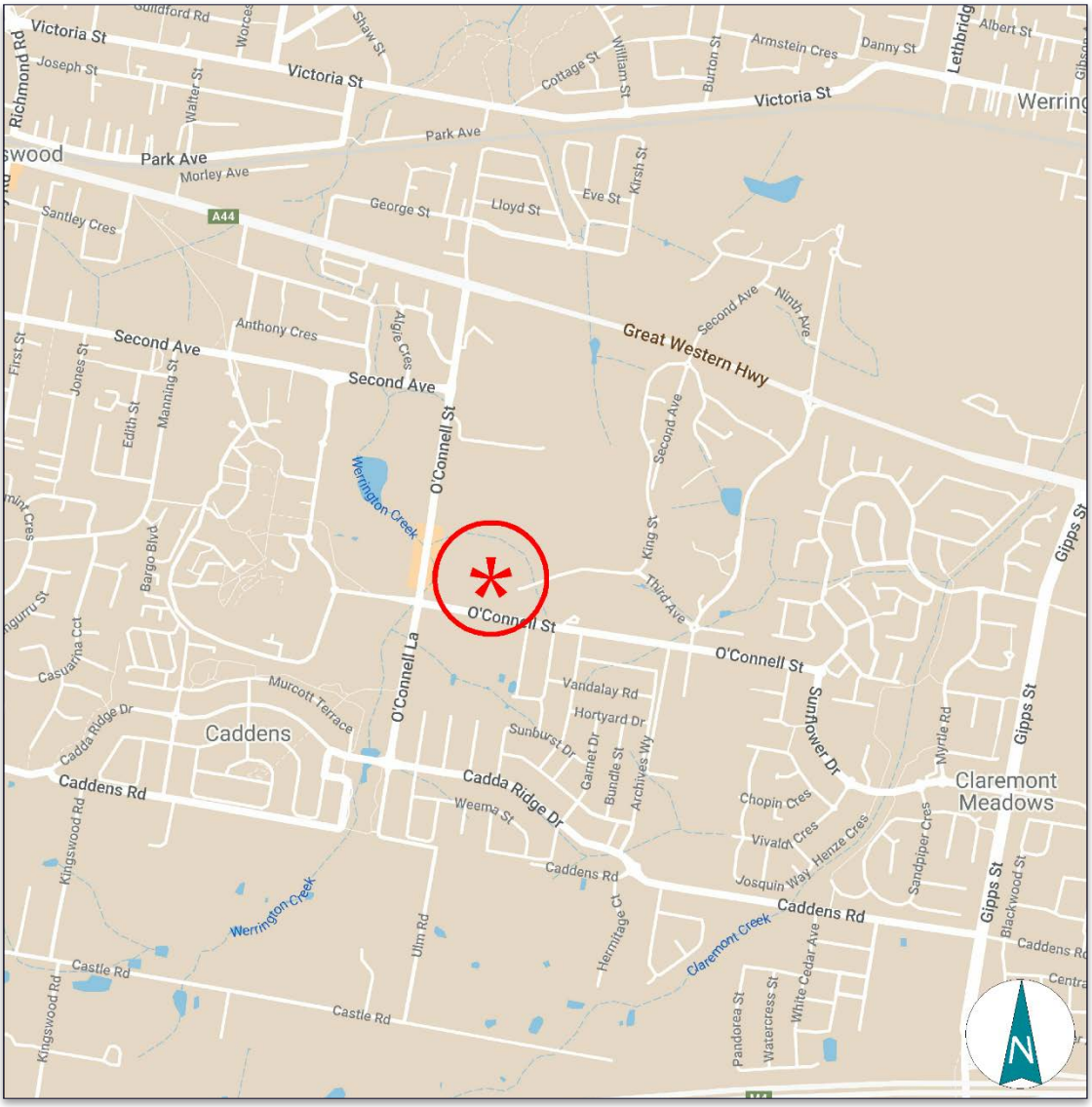


*Figure 1 - Site Location*

# 2.0 Proposed Development

## 2.1 Site, Context & Existing Circumstance

The site (Figure 2) is a consolidation of Lot 2 and part Lot 1 in DP 1268507 which occupies a rectangular shaped area of 3.32ha with frontage to the northern side of O'Connell Street located in the central part of Caddens approximately midway between the Great Western Highway and the M4 Motorway.

Caddens is a developing new suburb situated some 4km to the east of the Penrith CBD, with its regional retail, hospital and educational facilities and the uses which surround the subject site comprise:

- the adjoining "Caddens Corner" retail centre
- the new dwellings and proposed subdivisions to the south and north
- the WSU campuses which extend to the north and west of the site
- the TAFE NSW – Kingswood Campus to the north
- the established residential areas to the east, west and south.

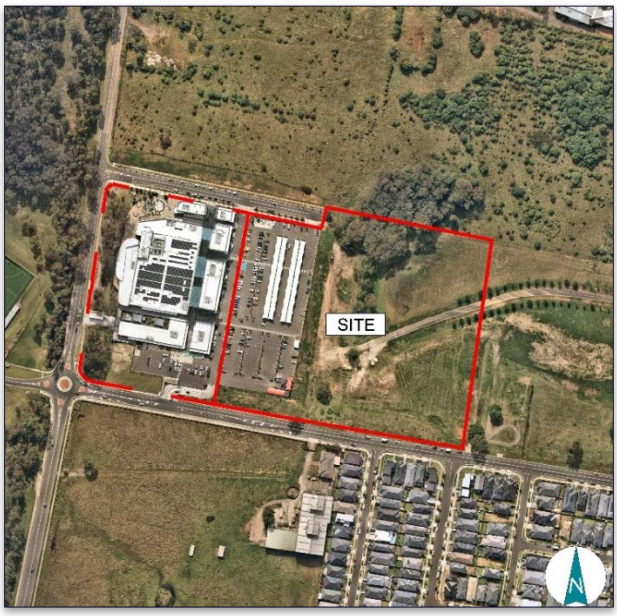


*Figure 2 - Site Boundary*

## 2.2 Precinct Planning

The site and surrounding lands are located within the Werrington Enterprise, Living and Learning (WELL) Precinct, which is generally bounded by the Railway Line to the north, Caddens Road to the south, Gipps Street to the east and the South Kingswood residential area to the west. The Precinct, which comprises a number of sub precincts including Caddens Release Area, South Werrington Urban Village, Claremont Meadows Stage 2 and Werrington Mixed Use Area, is planned to:

- be a "Village" within the Penrith Centres Hierarchy.
- create a residential neighbourhood with 3,000 dwellings (including 100 dwellings for student accommodation) to accommodate some 8,400 people
- provide a mix of housing types with sustainable attributes
- accommodate some 7,800 jobs, including up to 6,000 jobs in the WELL Technology Park and some 350 jobs in the Precinct Centre.
- reduce environmental impact and facilitate greater social interaction
- provide open space amenity with landscaping retaining/protecting areas with high conservation value
- provide for bus services as well as cyclist and pedestrian networks

Details of the Precinct along with the Structure Plan and Indicative Dwelling Type for the Caddens area are shown in the following Figures 3-5.

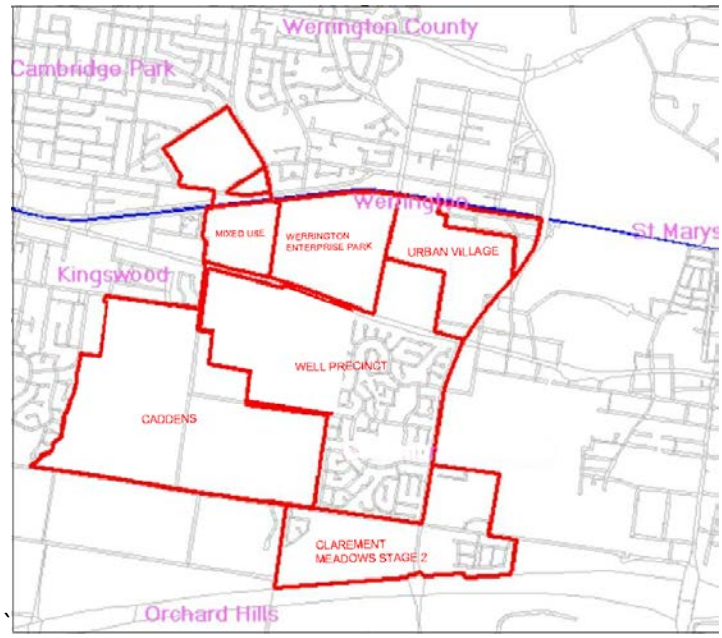


*Figure 3 - Precinct Classification*

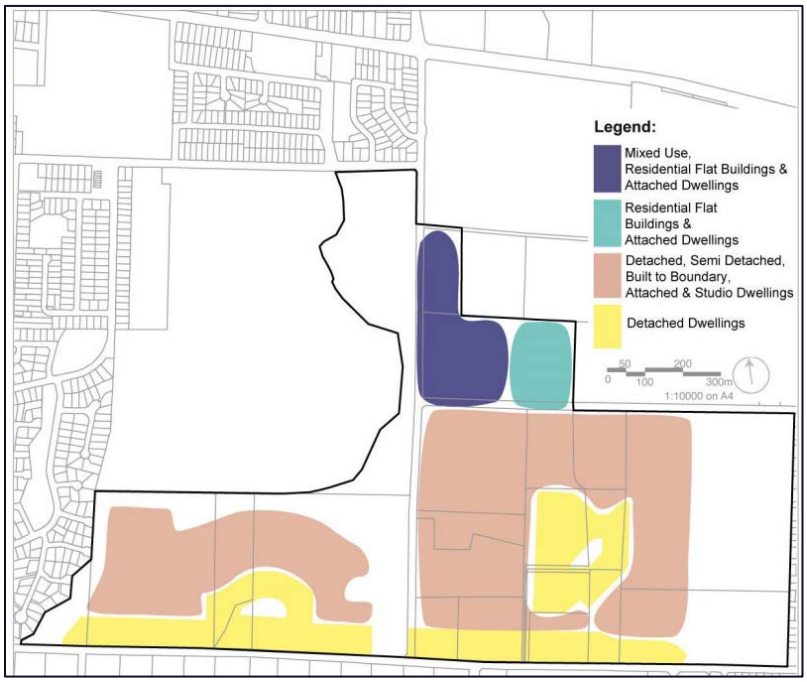


*Figure 4 - Indicative Dwelling Type Location*


*Figure 5 - Structure Plan*

## 2.3 Proposed Development Scheme

It is proposed to clear the site apart from the Cumberland Plan Woodland area and excavate parts to provide for:

- basement parking
- level building platforms
- new access roads
- services

The proposed development will involve 4 stages and comprise a total of 19 buildings as follows:

| | | |
|---|---|---|
| Stage 1 | Buildings A, B, C, H & J | Total |
| One Bed | | 8 |
| Two Bed | | 49 |
| Three Bed | | 40 |
| Four Bed | | 2 |
| Total | | 99 dwellings |
| Stage 2 | Buildings D, E, F & G | |
| One Bed | | 13 |
| Two Bed | | 45 |

| | | |
|---|---|---|
| Three Bed | | 51 |
| Four Bed | | 6 |
| Total | | 115 dwellings |
| Stage 3 | Buildings K, L, M & N | |
| One Bed | | 6 |
| Two Bed | | 77 |
| Three Bed | | 29 |
| Four Bed | | - |
| Total | | 112 dwellings |
| Stage 4 | Buildings P, Q, R, S, T & U | |
| One Bed | | 11 |
| Two Bed | | 91 |
| Three Bed | | 35 |
| Four Bed | | 3 |
| Total | | 140 dwellings |
| Grand Total | | 466 dwellings |

Stage 4 will also include ground level retail elements in Buildings R, S, T, U, Q and P with a total of 1,470m$^2$.

The proposed residential car parking will comprise:

**Stage 1** 174 spaces

**Stage 2** 202 spaces

**Stage 3** 180 spaces

**Stage 4** 214 spaces

The proposed retail car parking will comprise:

**Stage 4** 501 spaces

The new access road system will comprise an extension of Corr Road to connect with O'Connell Street and a new 'circuit' connecting to the new section of Corr Road.

Details of the proposed development scheme are provided on the plans prepared by Turner, which accompany the Development Application and are reproduced in part in Appendix A.

## 2.4 Other Developments

The elements of other proposed developments in the immediate area comprise:

- completion of the approved Caddens Corner Retail Centre. See Appendix B details (10,127m$^2$ approved – 8,918 m$^2$ constructed)
- Residential Subdivision – 44 to 66 O'Connell Street (185 dwellings). See Appendix B details
- Residential Subdivision – 89 to 115 O'Connell Street (159 dwellings). See Appendix B details.

The other new residential elements of Caddens, WELL Precinct and Claremont Meadows Stage 2 are essentially completed and the respective traffic generations as well as that of the completed part of the Caddens Corner Centre are incorporated in the existing traffic movements on the road network.

# 3.0 Road Network and Traffic Conditions

## 3.1 Existing Road Network

The existing road network serving the Kingswood area (Figure 6) comprises:

- *M4 Western Motorway* – a principal arterial route linking between the Sydney CBD and the Blue Mountains crossing
- *Great Western Highway* – a State Road and arterial route which provides the secondary connection between the City and Penrith
- *The Northern Road/Parker Street* – a State Road and a sub-arterial route which provides a connection between Campbelltown and Windsor
- *Gipps Street/Kent Road* – a major collector road connecting south from the Great Western Highway across the M4 motorway
- *O'Connell Street* – a collector route which provides a connection between Great Western Highway and Caddens Road
- *O'Connell Lane* – a collector route which provides a connection between O'Connell Street and Caddens Road
- *Caddens Road* – a collector route connecting between Kingswood and Caddens
- *Derby Street/Second Avenue* – a collector route connecting between the WSU Campus and Penrith
- *Corr Road* – a local access road connecting to O'Connell Street and providing access for the Caddens Corner retail centre.

O'Connell Street, O'Connell Lane and Corr Road have 11.8m-wide sealed pavements which are relatively straight and level.

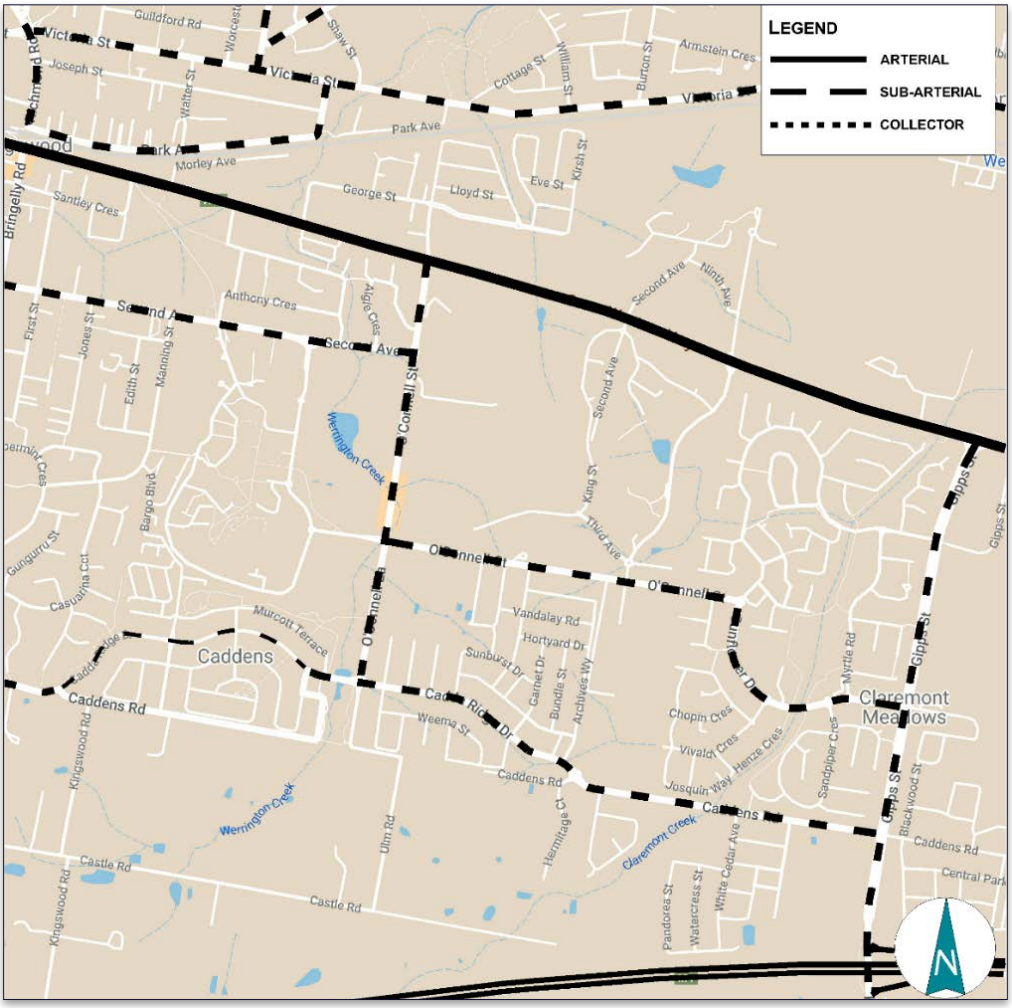


*Figure 6 - Road Network*

## 3.2 Existing Traffic Controls

The existing traffic controls which have been applied to the road system in the vicinity of the site (Figure 7) include:

- the 50 kmph speed restriction on the local and collector road system with some 40 kmph school restrictions (e.g., Sunflower Drive, Manning Street and Second Avenue)
- the roundabouts along:
- O'Connell Street at the Sunflower Drive, O'Connell Lane/WSU access and Second Avenue intersections
- Second Avenue at the Dunstan Avenue, Bringelly Road/Derby Street intersections
- Cadda Ridge Drive at the Oconnell Lane Cadden Road intersection

- the traffic control signals along:
- Great Western Highway at the Gipps Street, WSU Werrington access, O'Connell Street/French Street and Bringelly Road intersections
- Gipps Street at the Sunflower Drive/Fowler Street, Caddens Road and M4 On/Off Ramp intersections

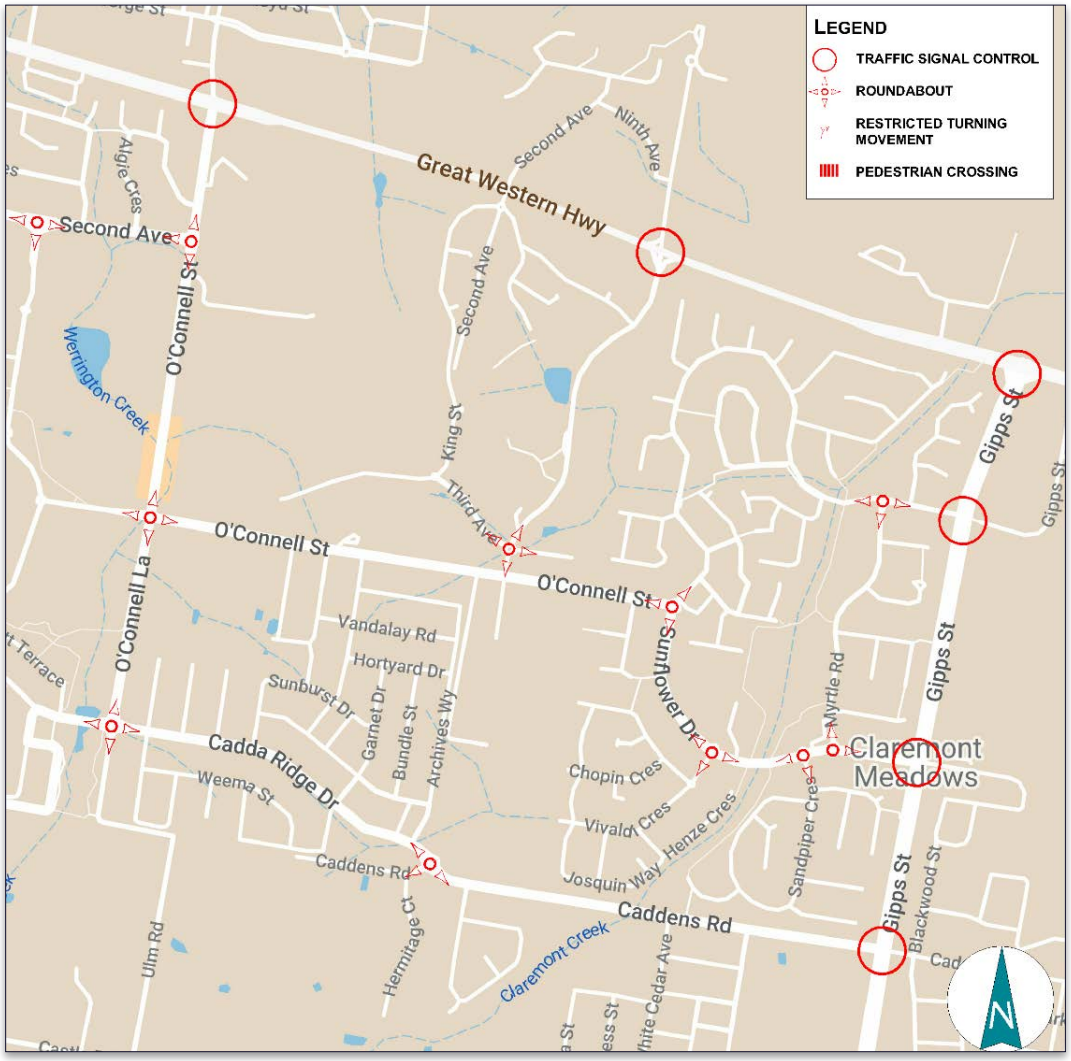


*Figure 7 - Traffic Controls*

## 3.3 Traffic Conditions

Traffic surveys were undertaken at the relevant intersections in the area during the AM and PM peak periods and the traffic movements of these surveys are summarised and provided in Appendix C.

The operational performance of these intersections has been assessed using SIDRA, and the results are provided in Appendix D and summarised in the following while the criteria for assessing SIDRA results are reproduced overleaf:

| | AM | | PM | |
|---|---|---|---|---|
| | LOS | AVD | LOS | AVD |
| GWH/ O'Connell Street | B | 28.3 | C | 25.5 |
| GWH/Gipps Street | C | 32.4 | C | 31.7 |
| O'Connell Street/ O'Connell Lane | A | 8.7 | A | 9.8 |
| O'Connell Street/ Corr Road | A | 9.1 | A | 9.0 |
| O'Connell Lane/ Cadda Ridge Road | A | 7.2 | A | 7.3 |
| O'Connell Street/ Starline Drive | A | 7.0 | A | 6.7 |
| Gipps Street/ Sunflower Drive | B | 19.2 | B | 20.0 |
| Gipps Street/ Caddens Road | C | 32.6 | B | 20.0 |

The results of the SIDRA assessments indicate that these intersections operate satisfactorily during the peak periods at the present time.

## 3.4 Transport Services

Bus services in the vicinity of the site are provided by Busways, which operate routes 770, 774, 775, 776 and 835 along Second Avenue, Cadda Ridge Drive and O'Connell Street. Details of the bus and rail services available near the site are provided in Appendix E.

These services provide links to the Penrith and Mount Druitt Railway Stations, Penrith CBD/Nepean Hospital and St Marys CBD and operate with 10-minute frequency during the weekday peak periods.

In addition, WSU Penrith adopts a responsible policy of encouraging and facilitating travel to/from the Precinct by public transport, walking and cycling, as well as carpooling.

A Transport Access Guide (TAG) prepared by WSU and displayed on their website is reproduced in Appendix F.

## 3.5 Bicycles and Pedestrians

Off-road shared paths are provided on the northern side of the Great Western Highway between Parker Street and Bringelly Road, crossing at the intersection of the Great Western Highway /Bringelly Road and continuing to the southern side of the Great Western Highway towards Pages Road. A range of on-road bicycle facilities are also provided along Parker Street, Richmond Road, College Street, Bringelly Road, Derby Street, Second Avenue, Jamison Road, and O'Connell Street within the vicinity of the site.

WSU Penrith also provides an internal network of shared pathways which link to the regional network. The Kingswood Campus connects to the cycleway running along Second Avenue and extracts from the RMS Cycleway Finder illustrating the cycleways in the vicinity of the site are shown below (Figure 8).

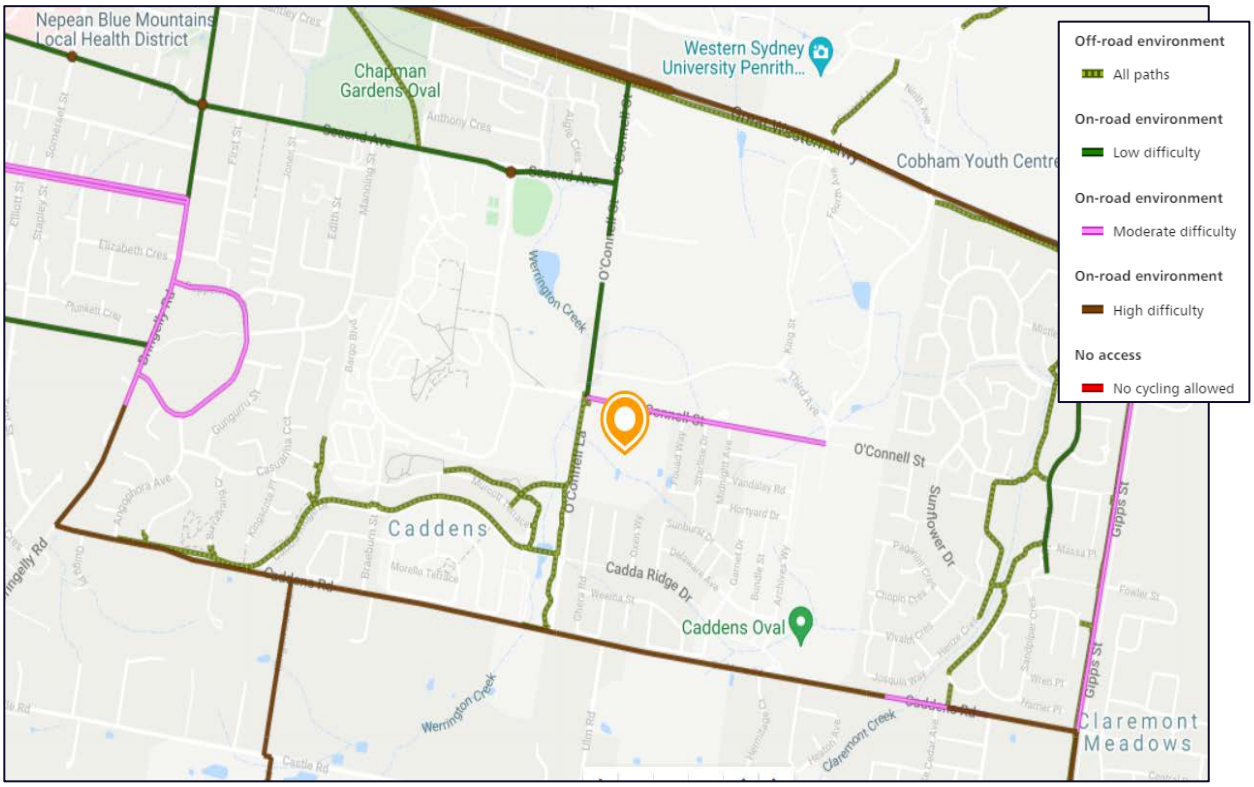


*Figure 8 - Existing Bicycle Routes*

*Source: https://www.rms.nsw.gov.au/maps/cycleway_finder*

Dedicated shared paths are provided for pedestrians on both sides of O'Connell Lane, the southern and eastern side of O'Connell Street, connecting with pedestrian footpaths provided within the WSU campus. These paths provide good connectivity between the site and the Kingswood Centre, Railway Station and surrounding facilities.

The following pedestrian crossing facilities are provided in the vicinity of the site:

- Shared bicycle/pedestrian refuges on all legs of the O'Connell Lane/O'Connell Street and Cadda Ridge Drive/O'Connell Lane roundabout intersections.
- Pedestrian refuges on the southern and western legs of the Second Avenue/O'Connell Street roundabout intersection

# 4.0 Future Road Network, Traffic & Transport

## 4.1 Road Network

The planned road hierarchy for the road network serving the area which is already largely completed is shown on the extract from the Penrith DCP in Figure 9.

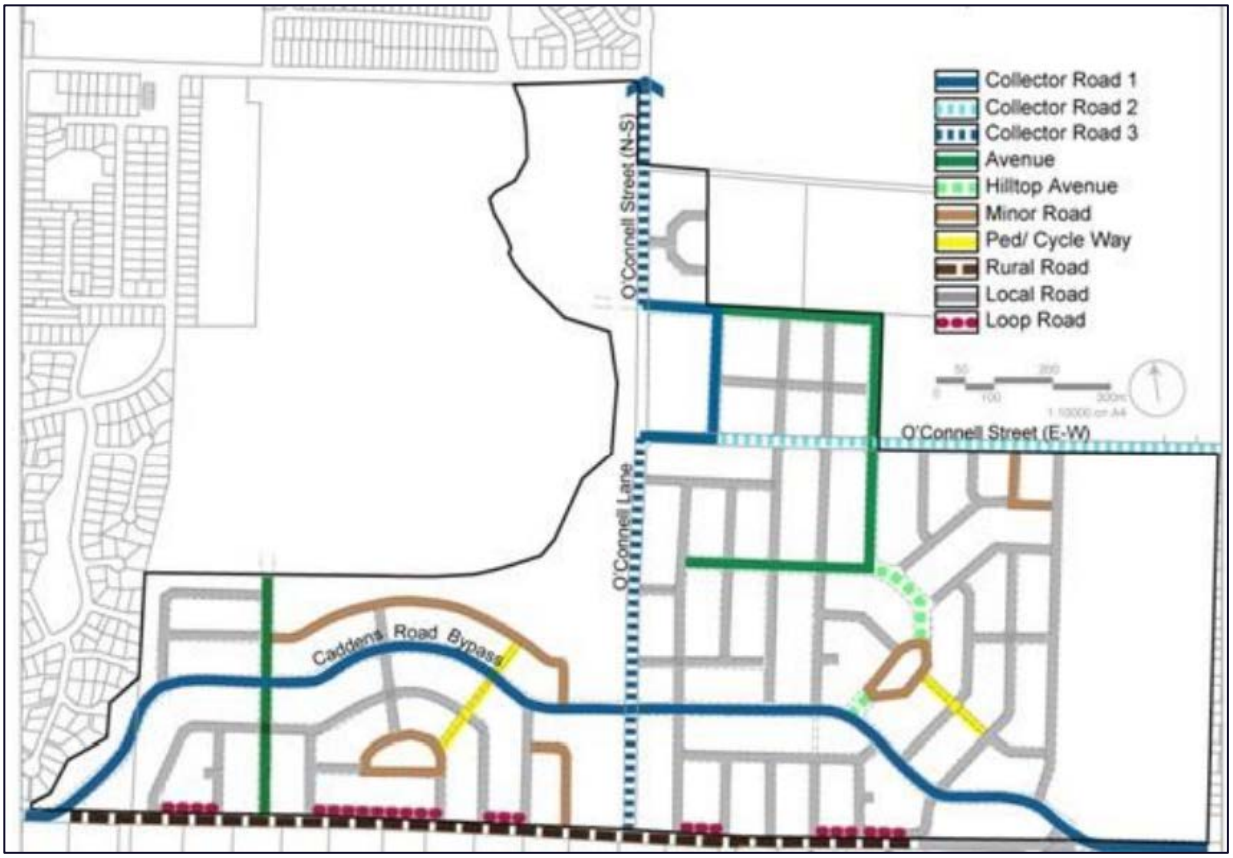


*Figure 9 - Caddens Road Hierarchy*

A feature of the DCP principles relevant to the development of the site is the nominated primary vehicle accesses via the intersections along O'Connell Street.

## 4.2 Bicycles and Pedestrians

Details of the planned bicycle and pedestrian network are provided in the Figure 10.

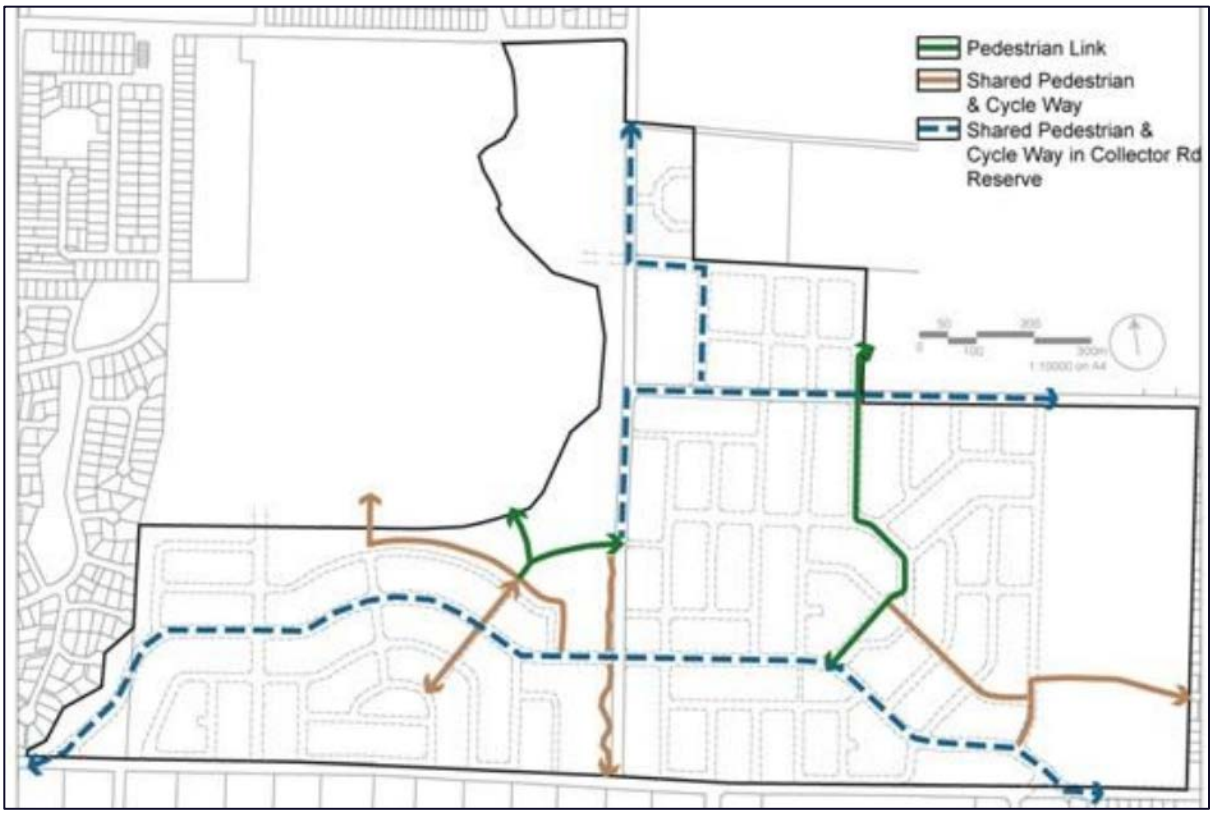


*Figure 10 - Pedestrian & Bicycle Network*

There will be a dedicated shared path along the eastern and southern side of O'Connell Street and the western side of O'Connell Lane, as well as through Caddens Corner. All local and collector roads will have paved footways.

The above measures provide opportunities for the development of the site to link to the broader networks and facilitate improved connectivity through the site and beyond.

## 4.3 Transport Services

### 4.3.1 Rail Services

The corridor for the envisaged new North-South Rail Line linking the Main Western Line to the new Airport and beyond to Oran Park and potentially Campbelltown passes through the eastern edge of

Caddens. While TfNSW has only confirmed the location of the principal envisaged railway stations they have also confirmed that there will be intermediate stations spaced at 2.5 to 4.0 kms servicing local centres. Given the transport demands of the tertiary campuses in the area it is inevitable that a railway station will be provided in the vicinity of Caddens. Resolution of the station locations will depend on the outcome of engineering/design studies and the Business Case.

### 4.3.2 Bus Services

The following figure provides an indicative concept for bus services and stops.


*Figure 11 - Indicative Layout of Bus Routes and Stops*

The proposed bus stops on O'Connell Street will ensure that residents living on the site are located within the 400m catchment of the bus stops.

# 5.0 Proposed Subdivision Road System

The proposed new access road system will comprise:

- An extension of Corr Road to connect with O'Connell Street slightly offset to Starline Drive
- A "circuit" connecting to the new section of Corr Road
- A 1.5m footpath provided on the northern side of O'Connell Street and along the internal road system
-

Details of the proposed roads are provided on the plans overleaf.

# 6.0 Traffic

## 6.1 Background

Assessment of the traffic implications the proposed of development for the WELLS Precinct etc is provided in the study undertaken by TTPP[1] which incorporated previous assessments comprising:

- WELL Precinct TMAP (Mausell/AECOM 2007)
- Caddens Release Area TMAP (MWT 2008)
- Caddens Knoll DA assessment (Halcrow 2010)

The TTPP assessment was based on:

- 2016 traffic surveys (Existing Base Case)
- Future Base Case (Existing+ WELL precinct and Caddens but without CWG site)
- Future with CWG Site (390 townhouses and 400 apartments)

It is noted that the TTPP Future Base Case incorporated the generation of existing new occupied dwellings by virtue the 2013 surveys and a projection for the development of future dwellings without providing specific details (N°S) where as the 2021 survey includes the generation of all completed dwellings at that time.

The TTPP assessment was very "localised" and the traffic projection did not extend to the Great Western Highway intersections or the Gipps Street and Cadda Ridge Drive/ Caddens Road intersection. Details of the TTPP traffic scenario for the AM and PM peaks are reproduced in Appendix I. A subsequent Traffic assessment for the development of the 46-66 O'Connell Street site for 185 residential lots (excluding the separate western residences) was criticised by TfNSW in relation to:

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[1] Concept Plan DA
46-66 O'Connell Street, Caddens
Traffic Impact Assessment
TTPP January 2017

- The absence of assessment of the potential traffic impact on intersection on the State Road Network
- The adoption of a peak generation rate of 0.65 vtph per dwelling (despite the fact that this had been established for the TTPP concept plan assessment)

The TTPA report was revised in response to the TfNSW criticism and in order to be able to address the State Road intersection issue the assessment "drew upon" the TfNSW STFM traffic projections for 2021 and 2031. The revised assessment also adopted peak generation rates of 0.95vtph (AM) and 0.99vtph (PM) per residential lot with reference to the RTA study for "Low Density Residential".

The STFM model has 2 generation nodes relative to Caddens namely:

| | 2021 | | | | 2031 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total IN | | Total OUT | | Total IN | | Total OUT | |
| Node | AM | PM | AM | PM | AM | PM | AM | PM |
| 4955 | 1166 | 430 | 301 | 947 | 1411(+245) | 781(+351) | 625 (+324) | 1231 (+284) |
| 4957 | 232 | 548 | 709 | 513 | 284 (+52) | 736 (+188) | 842 (+133) | 634 (+121) |

| Total Additional | |
|---|---|
| AM | 754 vtph |
| PM | 944 vtph |

These are very significant additional vehicle movements which reflect the planned/envisaged development in the precinct.

Comparison of the TTPA assessed development outcome volumes (with background volumes) has revealed relatively similar volumes to that in the STFM model (i.e. for the localised intersections in the TTPP assessment).

## 6.2 Traffic Generation Rate

There are a range of published traffic generation rates for residential development as follows:

- RTA Development Guidelines (2002)
  - Single Residential Dwelling in outer Sydney Metropolitan Area – 0.85 vtph, there is no study assessment supporting this criterion
  - Medium Density Dwelling
    - 2 bed – 0.4-0.5 vtph
    - 3 bed – 0.5-0.65 vtph
  - High Density Dwellings – 0.29vtph

- RTA/RMS Update Studies
  - Single Residential Dwelling (TDT 2013) AM 0.99 vtph and PM 0.99 vtph, this data is flawed (refer to Appendix J details)
  - Medium Density Dwellings (RMS 2013 study) see details overleaf for network peak
    - AM- say 0.30 vtph
    - PM- say 0.45 vtph
  - High Density Dwelling (TDT 2013)
    - AM- say 0.19 vtph
    - PM- say 0.15 vtph

  Note: the great majority of surveyed sites had rail access

- DPIE Planning for Metropolitan Growth Centres Single Dwelling – 0.57 vtph (refer to Appendix K details)

- TTPA Study for Glenmore Park Stage 2 Single Dwelling – 0.65 vtph (refer to Appendix L details)

Factors relevant to the potential traffic generation of the proposed residential apartment development are:

- The significant adjacent retail centre which also contains services and eating /entertainment facilities as well as providing employment.

- The proposed upgrading of bus services under the TMAP and developer contribution provision
- The future provision of a nearby railway station when the new rail line is constructed.

## 6.3 Development Traffic

It is apparent, based on this data and circumstances that an "external" peak traffic generation rate for the proposed apartments of 0.40 vtph would be a robust projection. It is also apparent that the assessed generation rate adopted for the proposed subdivision at 44-66 O'Connell Street was a significant overestimation of up to +50%. Furthermore, that assessment overlaid the projected generation onto the STFM volumes for 2031 which already included a significant provision for development at Caddens.

It is also apparent that:

- There would be an element of "double count" if the TTPP "background volumes" were added to the 2021 surveyed intersection volumes because the background volumes would include dwellings since constructed and included in the 2021 volumes.
- The previous assessments for development of the subject Caddens site applied a single dwelling generation rate rather than medium dwelling generation rate.

However, notwithstanding these factors and the "over estimation" implications, it would be very difficult to unravel the details. Accordingly, the proposed assessment process is to:

- Document the existing circumstances (e.g. the 2021 traffic survey results)
- Document the STFM projections for 2031 with some assumptions for movements not specifically in the STFM details
- Add the assessed traffic generation for the additional dwelling yield (i.e. above the planning yield) being 186 as follows:

| AM | | PM | |
|---|---|---|---|
| **IN** | **OUT** | **IN** | **OUT** |
| 46 | 140 | 140 | 46 |

- Add the generation of the additional dwellings and retail to the STFM numbers

The traffic generation associated with the increased retail floorspace (1,470m$^2$ for the subject development) has regard for:

- the 20% discount as specified in the RTA Guidelines for extension of an existing centre
- the surrounding new residential development which constrains the "external retail trips"
- the "convenience" nature of the F&B elements.

The assessed generation for the AM and PM peak periods is as follows:

| | | |
|---|---|---|
| AM 2vtph per 100m$^2$ | - | 29 vtph |
| PM 5vtph per 100m$^2$ | - | 74 vtph |

Thus, the total traffic generation of the proposed development (and the increased floor areas in the Caddens Corner Centre) is as follows:

| | **AM** | | **PM** | |
|---|---|---|---|---|
| | **IN** | **OUT** | **IN** | **OUT** |
| Residential | 46 | 140 | 140 | 46 |
| Retail | 15 | 13 | 30 | 40 |
| **Total** | **61** | **153** | **170** | **86** |

The distribution of this traffic is demonstrated in Figure 12 below.

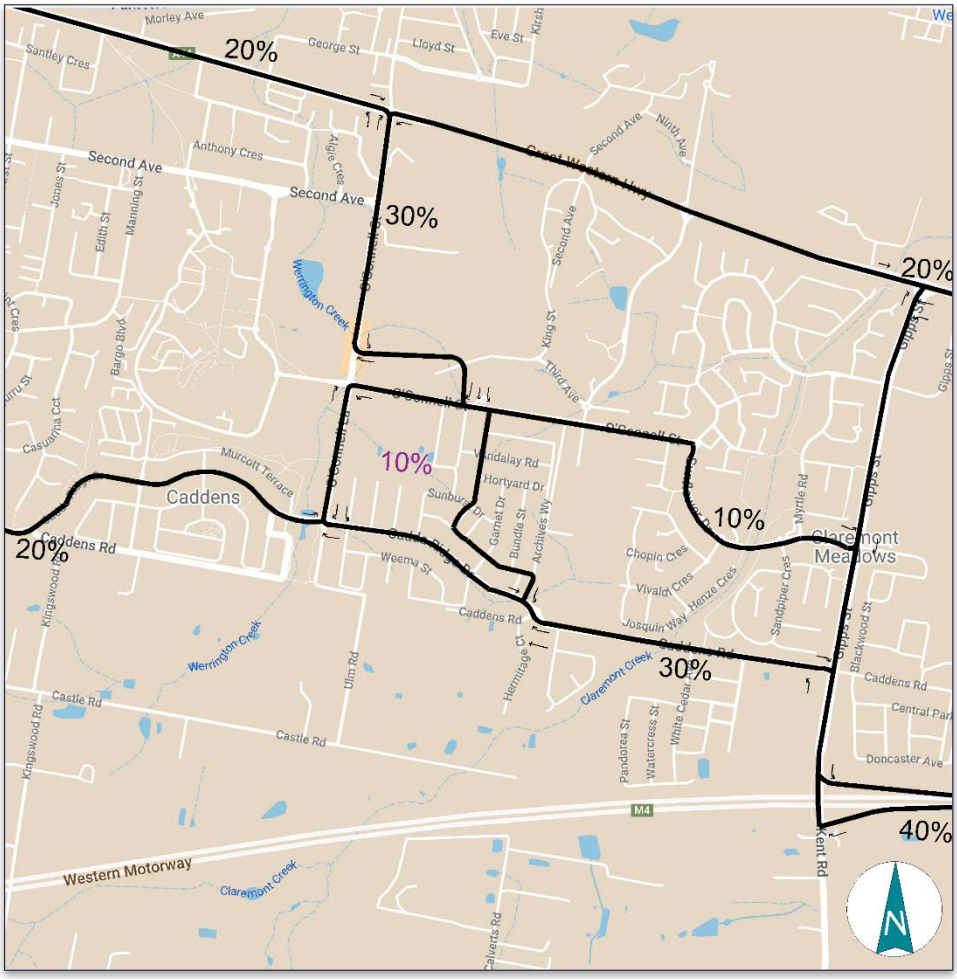



*Figure 12 - Development Traffic Distribution*

The above distribution, has taken into consideration TfNSW's comments and advice in regards to

- Employment centres to the south with the Aerotropolis precinct
- Sunflower Drive's traffic characteristics, such as school zones, mid-block pedestrian signals and LATM devices
- The quickest possible accesses to the M4 and the Great Western Highway

SIDRA modelling has been undertaken for the 2031 circumstances as discussed previously. The results of that assessment are provided in Appendix D and summarised in the following:

| | AM | | PM | |
|---|---|---|---|---|
| | LOS | AVD | LOS | AVD |
| GWH/ O'Connell Street | C | 40.4 | C | 33.9 |
| GWH/ Gipps Street | D | 47.8 | D | 48.0 |
| O'Connell Street/ Corr Road | A | 12.0 | A | 11.6 |
| O'Connell Street/ O'Connell Lane | A | 7.1 | A | 8.5 |
| O'Connell Lane/ Cadda Ridge Road | A | 7.8 | A | 6.2 |
| O'Connell Street/ Starline Drive | A | 9.6 | A | 9.5 |
| Gipps Street/ Sunflower Drive | B | 25.1 | B | 18.9 |
| Gipps Street/ Caddens Road | F | 109.3 | C | 36.8 |

The SIDRA results indicate that these intersections will operate quite satisfactorily with the projected additional development volumes.

The below table demonstrates the SIDRA results in regard to the intersections' performances in the future, with or without the development taking place. It is pretty evident, that the additional traffic movements that the development will impose on the surrounding network will not have a significant negative impact.

| | FUTURE W/O DEV | | | | FUTURE W DEV | | | |
|---|---|---|---|---|---|---|---|---|
| | AM | | PM | | AM | | PM | |
| | LOS | AVD | LOS | AVD | LOS | AVD | LOS | AVD |
| GWH/ O'Connell Street | C | 33.3 | C | 34.1 | C | 40.4 | C | 33.9 |
| GWH/ Gipps Street | D | 46.6 | D | 46.5 | D | 47.8 | D | 48.0 |
| O'Connell Street/ Corr Road | A | 10.4 | A | 10.6 | A | 12.0 | A | 11.6 |
| O'Connell Street/ O'Connell Lane | A | 9.0 | A | 10.3 | A | 7.1 | A | 8.5 |
| O'Connell Lane/ Cadda Ridge Road | A | 8.1 | A | 7.7 | A | 7.8 | A | 6.2 |
| O'Connell Street/ Starline Drive | A | 9.1 | A | 9.0 | A | 9.6 | A | 9.5 |
| Gipps Street/ Sunflower Drive | B | 24.3 | B | 18.0 | B | 25.1 | B | 18.9 |
| Gipps Street/ Caddens Road | F | 82.5 | C | 31.3 | F | 109.3 | C | 36.8 |

According to the above, the Gipps Street/ Caddens Road intersection AM Peak performance, demonstrates a Level of Service F, which will need to be addressed and mitigated. Although the development does have an impact, the 2031 prediction without development shows the same Level of Service.

TfNSW also commented on the Gipps St/ Sunflower Drive intersection in regards to the queue length of the right turn lane on Sunflower Drive. The SIDRA results, indicate that, indeed, the, already exceeding the limit, lengths will be increased by 2031, but as it can be seen in the table below, that will happen regardless of the development.

| | Existing | | Future W/O Dev | | Future W Dev | |
|---|---|---|---|---|---|---|
| | AM | PM | AM | PM | AM | PM |
| Queue length | 43.8 | 40.3 | 73.6 | 58.7 | 72.7 | 58.8 |

# 7.0 Parking

Councils DCP specifies a parking provision in relation to the proposed residential development as follows:

| | |
|---|---|
| **Residential (Multi Dwelling)** | |
| 1 Bed | 1 space |
| 2 Bed | 1 space |
| 3 & 4 Bed | 2 spaces |
| Visitors | 1 space per 5 dwellings |
| Car Wash | 1 space per 50 dwellings |
| EV Charging | 1 space per 100 dwellings |
| **Bicycle** | |
| Resident | 1 space per 4 dwellings |
| Visitor | 1 space per 20 dwellings |
| **Motorcycle** | 1 space per 50 dwellings |

Application of this criteria to the 4 Stages of development indicates the following:

| | Stage 1 | Stage 2 | Stage 3 | Stage 4 |
|---|---|---|---|---|
| One Bed | 7 | 13 | 6 | 13 |
| Two Bed | 55 | 47 | 88 | 93 |
| Three Bed | 82 | 102 | 58 | 70 |
| Four Bed | 4 | 12 | 0 | 6 |
| Total | 148 | 174 | 152 | 182 |
| Visitor | 19 | 21 | 21 | 26 |
| **Total** | 167 | 195 | 173 | 208 |
| **G Total** | | **743** | | |
| Car Wash | 3 | 3 | 3 | 4 |
| EV | 2 | 2 | 2 | 2 |
| **Bicycle** | | | | |
| Residential | 21 | **23** | 23 | 28 |
| Visitor | 6 | 6 | 6 | 7 |
| **Motorcycle** | 3 | 3 | 3 | 3 |

The proposed parking provisions for the residential portion will consist of 770 car spaces in full compliance with the council DCP requirements.

The proposed retail parking will be provided in conjunction with the existing retail site to the west which already accommodates 452 parking spaces. The additional retail parking required per the DCP is 1 space per 30 $m^2$.

Application of this criteria to the 4 Stages of development indicates the following:

| | Stage 1 | Stage 2 | Stage 3 | Stage 4 |
|---|---|---|---|---|
| Retail Space | - | - | - | 49 |

It is proposed to provide 501 spaces of existing and future retail parking in satisfaction of the DCP requirements. The parking will be removed and added in stages during construction to ensure the existing retail premises remains fully accommodated for parking demand.

# 8.0 Access, Internal Circulation and Servicing

## 8.1 Access

The design of the proposed vehicle access driveways comply with the requirements of AS2890.1&2 (as applicable) and there will be satisfactory sight distances available and positions of the driveways will comply with the standards.

Details of the turning path assessment for the access movements are provided in Appendix H.

## 8.2 Internal Circulation

The design of the internal circulation and parking arrangements including grades, widths, headroom, parking bays and manoeuvring provision etc comply with the requirements of AS2890.1,2&6. Details of representative turning circumstances are provided in Appendix H.

## 8.3 Servicing

Refuse will be collected and loading provision made as follows:

Buildings B to J: Loading dock in Building C (elec.tug transfer)

Buildings K to N: Loading dock in Building M (elec.tug transfer)

Buildings P to U plus retail: Loading dock in Building U (elec.tug transfer)

Details of the turning path assessments are provided in Appendix H.

# 9.0 Issues

Adress Council's concerns

a) ~~A Stage 2 Road Safety Audit shall be submitted in support of the application.~~

b) ~~A 1.5m footpath shall be provided along the northern side of O'Connell Street (East-West) for the full frontage of the development. The footpath shall be detailed on all plan sets for consistency.~~

c) ~~The civil plans shall detail the proposed intersection of the new road with O'Connell Street (East-West).~~

d) ~~The proposed indented parking bays and tree pits within the parking lane are not supported. The extension of Corr Road shall be consistent with the existing Corr road layout. The verge and carriageway widths shall be consistent with Collector Road 1 in accordance with Penrith City Council's DCP part E1 - Caddens. The new 'circuit' road shall have verge and carriageway widths consistent with the Local Road layout detailed in the Penrith City Council DCP part E1- Caddens.~~

e) The Statement of Environmental Effects and Traffic Impact Assessment detail a different distribution of the proposed apartment sizes. The reports shall be consistent with each other. Section 7 of the Traffic Impact Assessment details the calculation of required parking in accordance with Penrith City Council's Development Control Plan, 2014 however the calculated required parking spaces for Stage 1 are not consistent with the DCP parking rates

f) The application shall address the offset of the existing 444 parking spaces during construction noting the current required parking to service Caddens Corner will be removed until the replacement basement parking is completed and operational.

g) All residential parking spaces shall have a minimum width of 2.5m to allow for full opening of all doors in accordance with Penrith City Council's DCP and AS2890.1. The plans shall be amended accordingly.

h) The swept paths of the waste collection vehicles detail reverse manoeuvre's and 3 point turn exit manoeuvre within the basement carparking areas which is not supported by Council.

i) The summit change in grade for Stage 1 Ramp 1 shall not exceed 12.5% in accordance with AS2890.1. The basement access shall be amended accordingly.

j) Swept paths shall be provided for all basement ramps demonstrating a B85 vehicle can pass a B99 vehicle in accordance with AS2890.

k) The width of the basement ramps shall be clearly confirmed on the plans demonstrating two way traffic movements in accordance with AS2890.

l) The aisle widths within the retail basement parking areas shall have a minimum width of 6.6m in accordance with User Class 3A in accordance with AS2890.1. The plans shall be updated accordingly.

m) A 300mm clearance from end parking spaces directly adjoining the basement walls shall be confirmed on the plans in accordance with AS2890.1.

n) A minimum 1m wide blind aisle extension shall be detailed on the plans in accordance with AS2890.1.

o) The headroom clearance for any vehicular path of travel to or from any accessible parking space shall be a minimum 2.3m in accordance with AS2890.1. Multiple ramps are detailed with a headroom clearance of 2.25m and shall be amended accordingly.

p) A retail visitor parking space and retail parking space is detailed on the Architectural plans with different parking space widths. All retail parking spaces shall conform to User Class 3A in accordance with AS2890.1. The plans shall be updated accordingly and the retail visitor space detail removed from the plan set for clarity.

q) The architectural basement plans detail possible support columns within and conflicting with proposed parking spaces. It is understood the final location of structural supports within the buildings is subject to structural engineering design however the columns shall be shown indicatively to not conflict with parking spaces.

r) The road verge shall have a crossfall of 4% and the footpath shall have a crossfall of 2% in accordance with Penrith City Council's Engineering Construction Specification for Civil Works. The vehicle crossovers within the road verge shall be consistent with Council's verge profile. All basement access driveways shall be amended accordingly noting the crest of the basement access shall be a minimum 0.3m above the top of kerb level.

s) The basement access driveways into stages 1 & 2 shall be detailed as standard Penrith City Council vehicle crossovers on the civil plans. The detailed access arrangement is not supported for the proposed RFB's.

t) Given the restricted sightlines, safety concerns are raised with the four-way intersection at O'Connell Street (south) and the proposed Avenue. A road safety audit is to be submitted that includes a review of this intersection.

u) The road safety audit is also required to demonstrate there is no adverse impact on the adjoining road network associated with the proposal.

v) Based on 0.4v tph for an apartment, the traffic generated by the residential component will be 225 vehicle trips during peak hour. In the traffic report, the traffic generated by residential component has been estimated as 132 vehicle trips during peak hour.

w) Proposed car park for Stage 4: There will be conflict between motorists entering / exiting from the ground floor car park and heavy vehicles exiting / entering the car park. Information shall be provided how the conflict will be addressed.

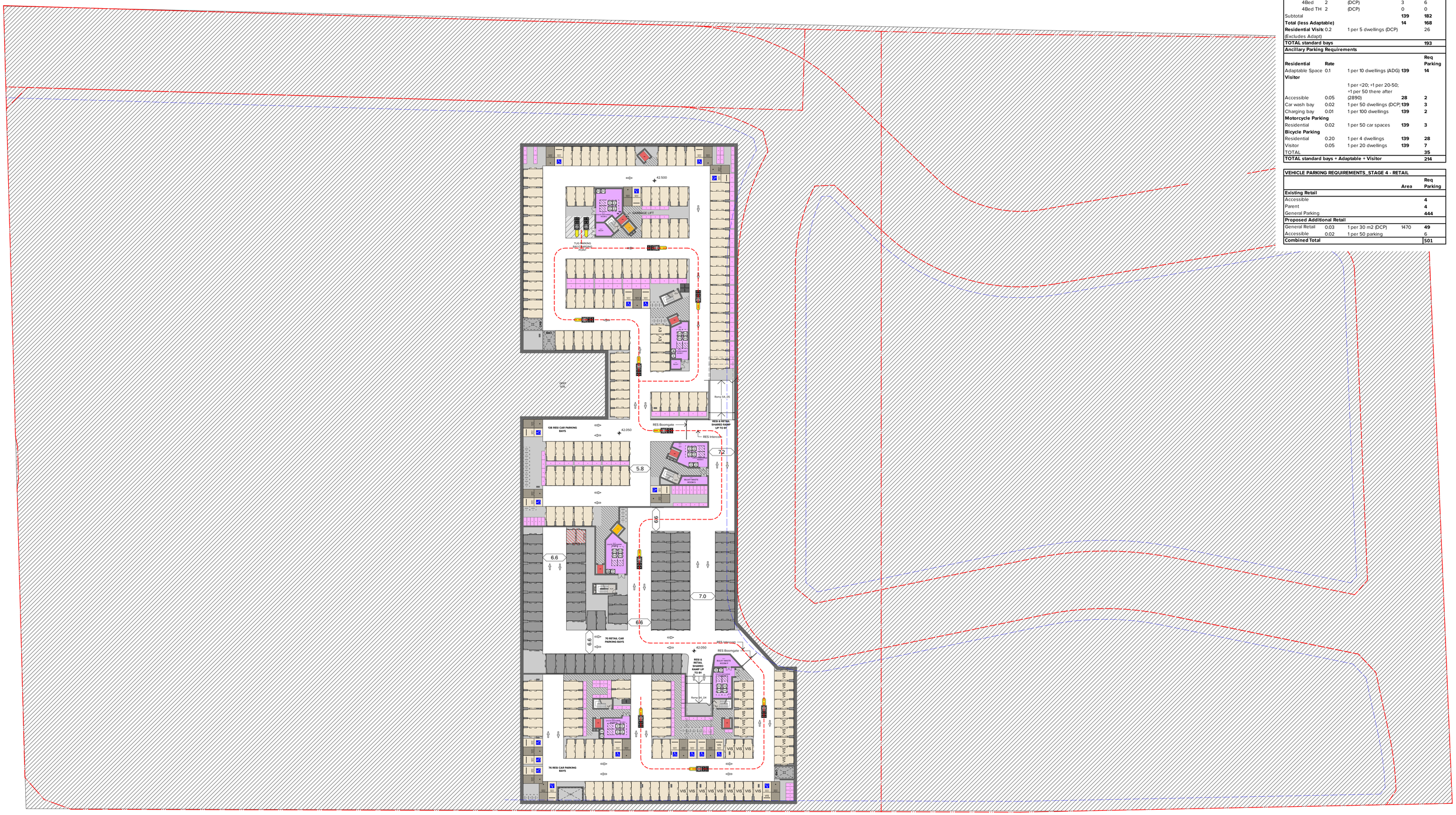
# 10.0 Conclusion

Assessment of the proposed mixed-use development on O'Connell Street at Caddens has concluded that:

- the proposed road system will be appropriate and generally compliant with the DCP specifications
- there will be no adverse traffic implications
- the proposed parking provision will be adequate and appropriate
- the provisions for vehicle access, internal circulation and servicing will be suitable and appropriate

# Appendix A
# Proposed Plans

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994




| VEHICLE PARKING REQUIREMENTS_STAGE 4 - BUILDINGS | | | | P R S U |
|---|---|---|---|---|
| **Apt Type** | **Rate** | | **No. of Apt** | **Req Parking** |
| 1 Bed | 1 | (DCP) | 13 | 13 |
| 2Bed | 1 | (DCP) | 29 | 29 |
| 2Bed+ | 1 | (DCP) | 50 | 50 |
| 2Bed TH | 1.5 | (DCP) | 9 | 14 |
| 3Bed | 2 | (DCP) | 18 | 36 |
| 3Bed+ | 2 | (DCP) | 17 | 34 |
| 3Bed TH | 2 | (DCP) | 0 | 0 |
| 4Bed | 2 | (DCP) | 3 | 6 |
| 4Bed TH | 2 | (DCP) | 0 | 0 |
| Subtotal | | | **139** | **182** |
| **Total (less Adaptable)** | | | **14** | **168** |
| **Residential Visit:** 0.2 (Excludes Adapt) | | 1 per 5 dwellings (DCP) | | 26 |
| **TOTAL standard bays** | | | | **193** |
| **Ancillary Parking Requirements** | | | | |
| **Residential** | **Rate** | | | **Req Parking** |
| Adaptable Space | 0.1 | 1 per 10 dwellings (ADG) | **139** | **14** |
| **Visitor** | | 1 per <20; +1 per 20-50; +1 per 50 there after (2890) | **28** | **2** |
| Accessible | 0.05 | | | |
| Car wash bay | 0.02 | 1 per 50 dwellings (DCP) | **139** | **3** |
| Charging bay | 0.01 | 1 per 100 dwellings | **139** | **2** |
| **Motorcycle Parking** | | | | |
| Residential | 0.02 | 1 per 50 car spaces | **139** | **3** |
| **Bicycle Parking** | | | | |
| Residential | 0.20 | 1 per 4 dwellings | **139** | **28** |
| Visitor | 0.05 | 1 per 20 dwellings | **139** | **7** |
| TOTAL | | | | **35** |
| **TOTAL standard bays + Adaptable + Visitor** | | | | **214** |

| VEHICLE PARKING REQUIREMENTS_STAGE 4 - RETAIL | | | | |
|---|---|---|---|---|
| | | | **Area** | **Req Parking** |
| **Existing Retail** | | | | |
| Accessible | | | | **4** |
| Parent | | | | **4** |
| General Parking | | | | **444** |
| **Proposed Additional Retail** | | | | |
| General Retail | 0.03 | 1 per 30 m2 (DCP) | 1470 | **49** |
| Accessible | 0.02 | 1 per 50 parking | | 6 |
| **Combined Total** | | | | **501** |

| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

Retail parking space 5,400 2,600
Residential Visitor parking space VIS 5,400 2,500
Residential Visitor parking space VIS 5400 2,500
Residential parking space 5,400 2,500
motor bike space
Shared parking space
Residential Accessible parking space 5,400 2,600
Retail Accessible parking space & shared parking space 5,400 2,600

0 5 10 25m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 42.000**

Scale **1:500 @A1, 50%@A3**
Project No. **20096**
Drawn by **AK/KCH/YU/JG/ KT/MR/NVZT**
North
Status **For Coordination**
Dwg No. **DA-110-006**
Rev **10**

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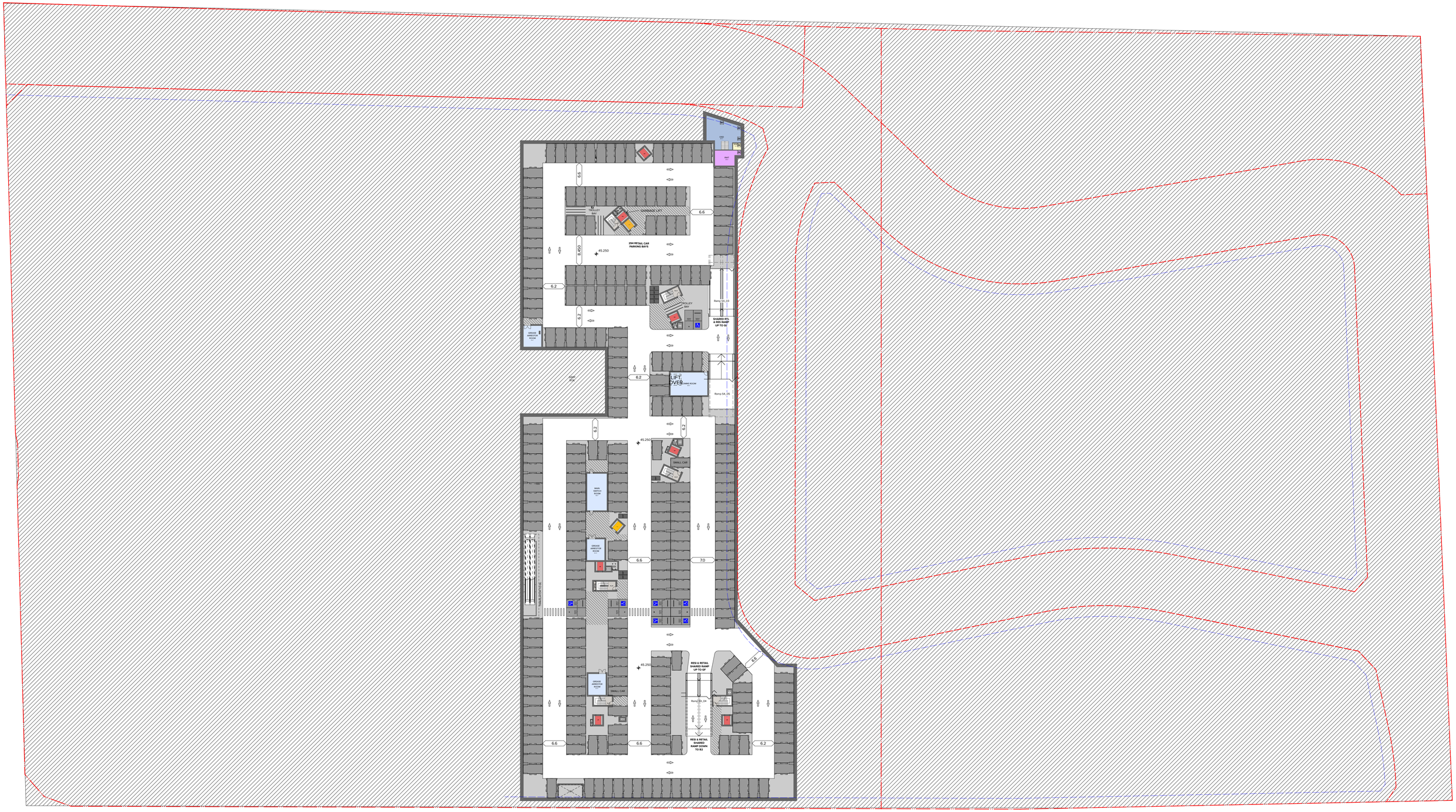


| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

Retail parking space 5,400 2,600
Residential Visitor parking space VIS 5,400 2,500
Residential Visitor parking space VIS 5400 2,500
Residential parking space 5,400 2,500
motor bike space
Shared parking space
Residential Accessible parking space 5,400 2,600
Retail Accessible parking space & shared parking space 5,400 2,600

0 5 10 25m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 44.800**

Scale **1:500 @A1, 50%@A3**
Project No. **20096**
Drawn by **AKK/CHY/JJ/KTJMN/NIZZ...**
North
Status **For Coordination**
Dwg No. **DA-110-007**
Rev **10**

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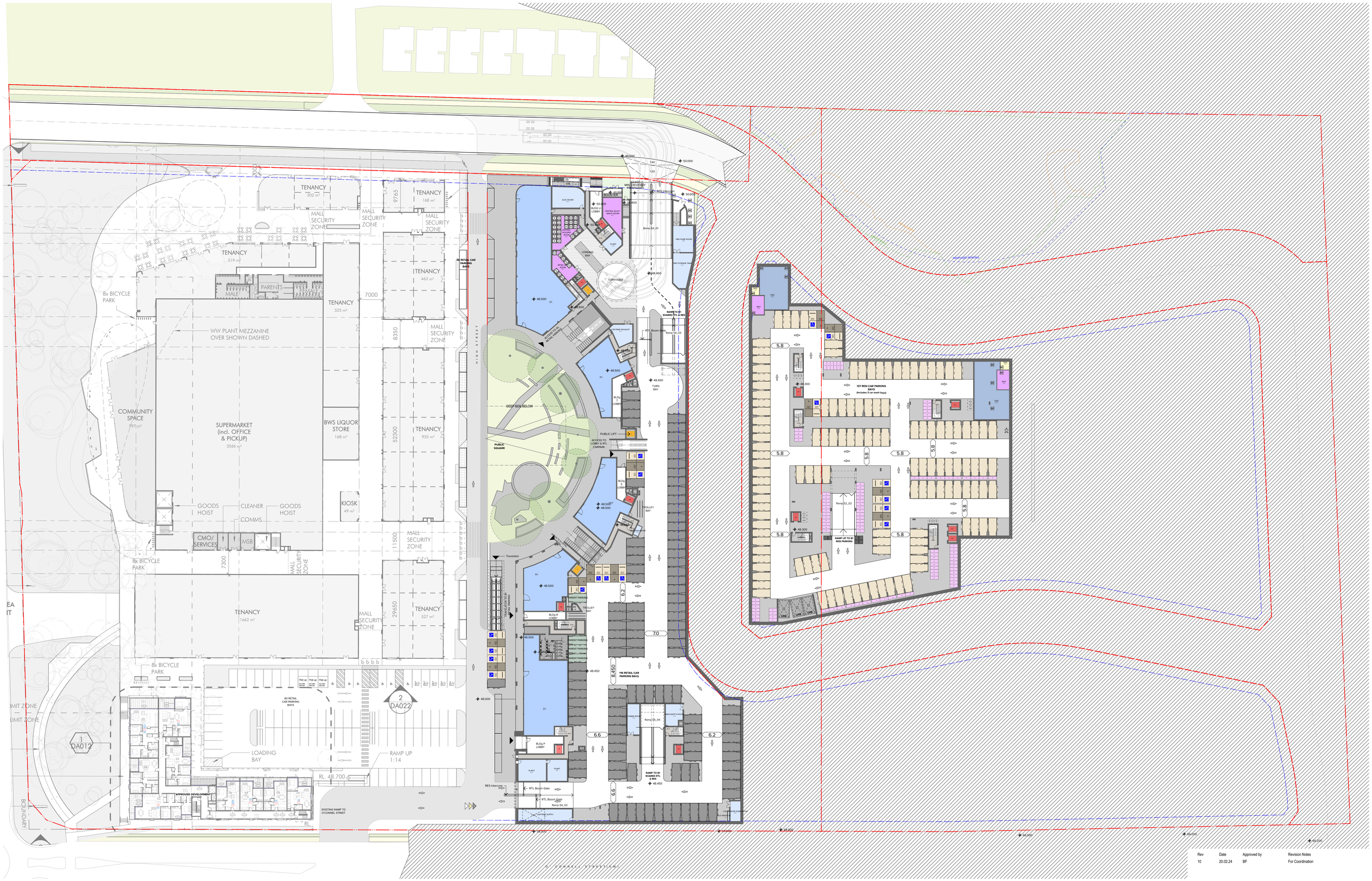


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DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

Retail parking space 5,400 2,600
Residential Visitor parking space VIS 5,400 2,500
Residential Visitor parking space VIS 5400 2,200
Residential parking space 5,400 2,500
motor bike space
Shared parking space
Residential Accessible parking space 5,400 2,600
Retail Accessible parking space & shared parking space 5,400 2,600

0 5 10 25m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 48.000**

Scale **1:500 @A1, 50%@A3**
Status **For Coordination**
Project No. **20096**
Dwg No. **DA-110-008**
Drawn by **AKK/CHI/YJG/ KT/MN/NIZT...**
Rev **10**
North

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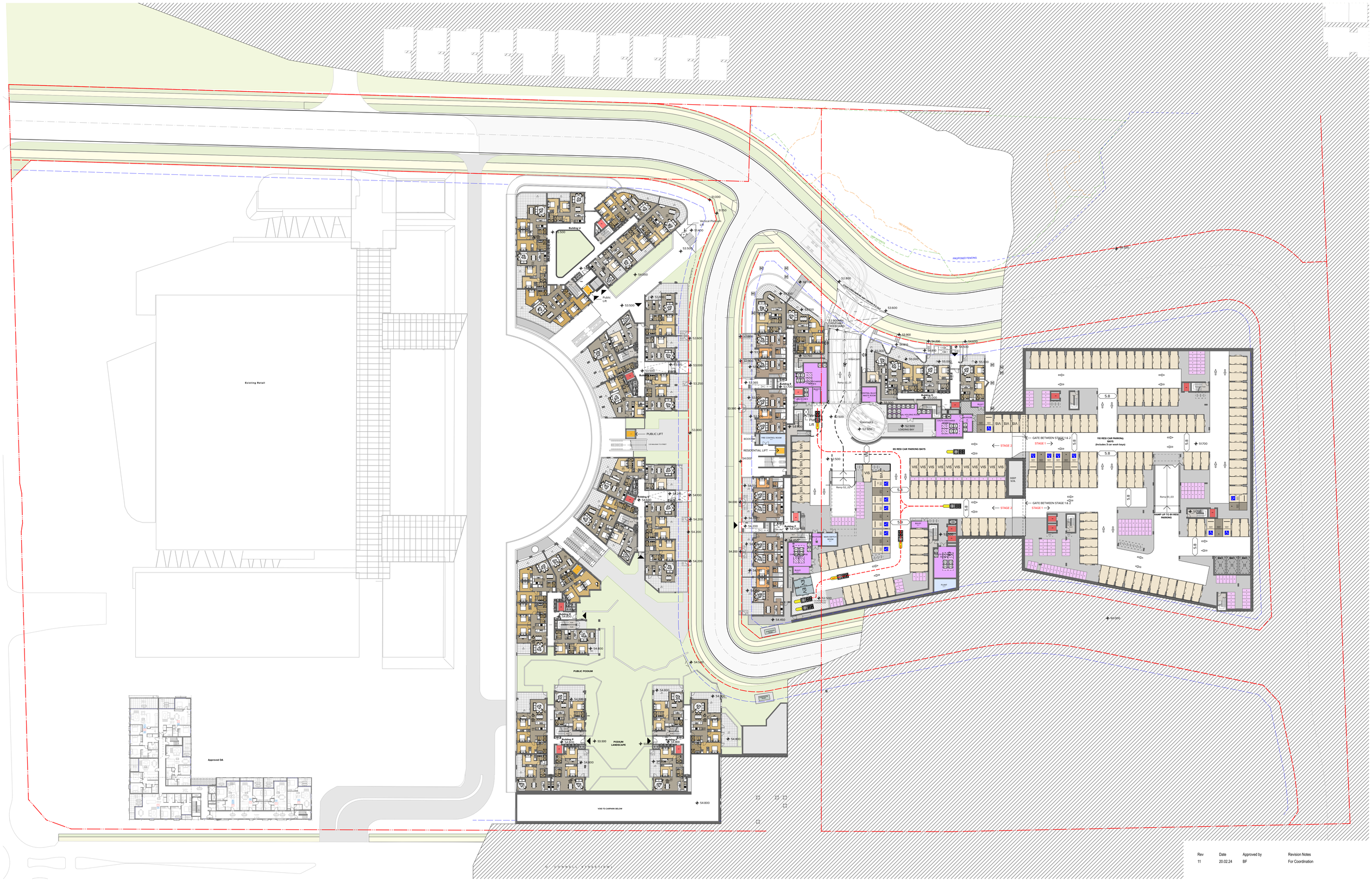

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DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary —·—
Setback — —
ADG Setback - - -

| | |
|---|---|
| ACC | Accessible |
| ADP | Adaptable |
| B | Bathroom |
| B1,2… | Bedroom 1, Bedroom 2, etc. |
| BY | Balcony |
| D | Dining |
| E | Entry |
| EN | Ensuite |
| FEX | Fire Extinguisher |
| FH | Fire Hydrant |
| GBC | Garbage Chute |
| GL | Ground Line |
| K | Kitchen |
| L_01,02 | Lift No.1, 2, etc. |
| L | Living |
| LR | Lobby Relief Air |
| LY | Laundry |
| S | Store |
| SA | Supply Air |
| ST | Study |
| TCE | Terrace |
| VIS | Visitor |
| WIP | Walk-in Pantry |

Retail parking space 5,400 2,600
Residential Visitor parking space VIS 5,400 2,500
Residential Visitor parking space VIS 5400 2,500
Residential parking space 5,400 2,500
motor bike space MBP
Shared parking space
Residential Accessible parking space 5,400 2,500
Retail Accessible parking space & shared parking space 5,400 2,600

0 5 10 25m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 53.000**

Scale
**1:500 @A1, 50%@A3**
Project No.
**20096**
Drawn by
**AKK/CH/IY/JG/KT/NM/NH/ZT**
North
Status
**For Coordination**
Dwg No.
**DA-110-010**
Rev
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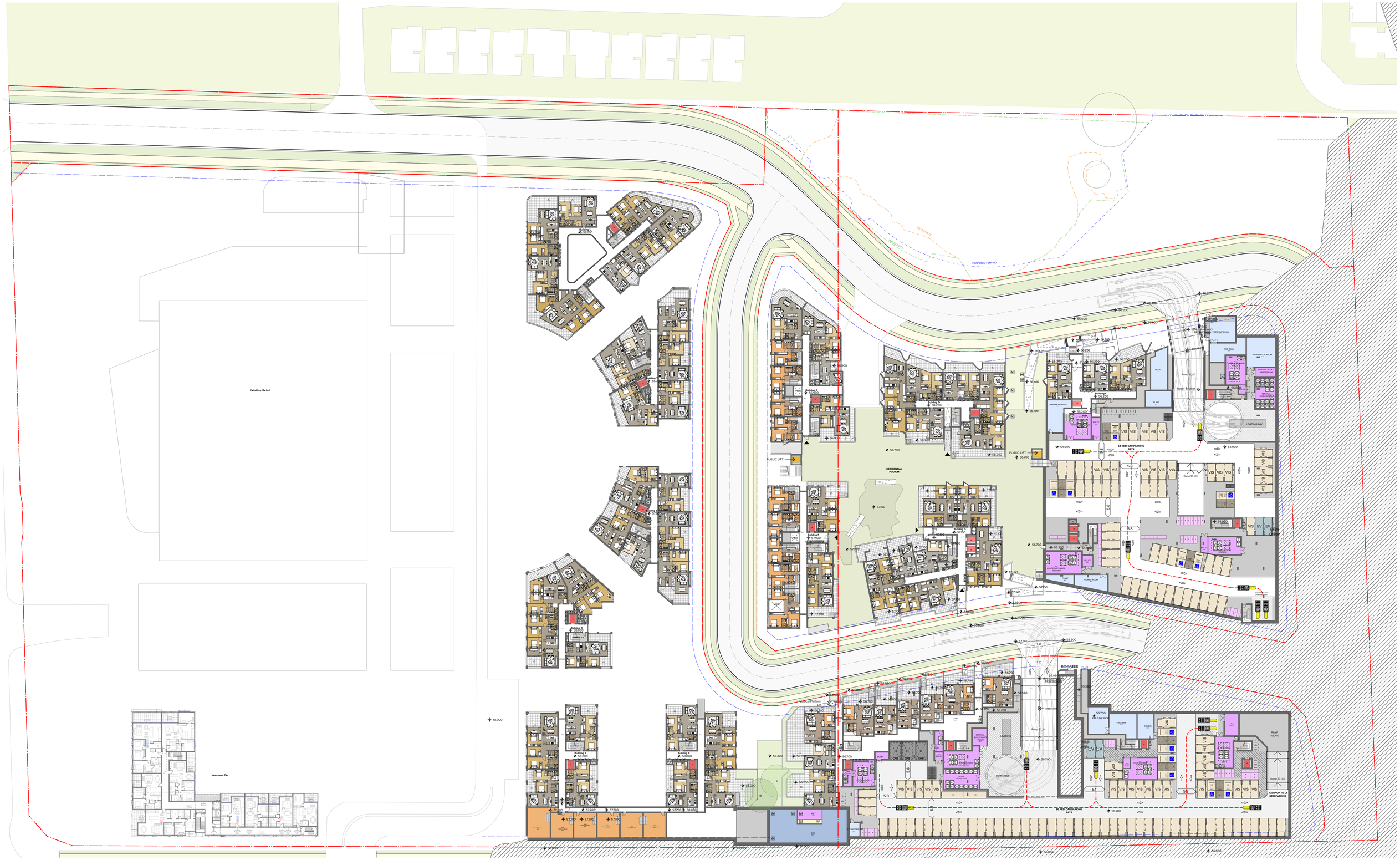


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Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

- Site Boundary
- Setback
- ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
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| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

Retail parking space 5,400 2,600
Residential Visitor parking space VIS 5,400 2,500
Residential Visitor parking space VIS 5,400 2,500
Residential parking space 5,400 2,500
motor bike space
Shared parking space
Residential Accessible parking space 5,400 2,500
Retail Accessible parking space & shared parking space 5,400 2,600

0 5 10 25m

Project Title
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O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 56.200**

Scale: **1:500 @A1, 50%@A3**
Status: **For Coordination**
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Dwg No.: **DA-110-020**
Drawn by: **AKK/CHY/JG/KT/MN/NN/ZT**
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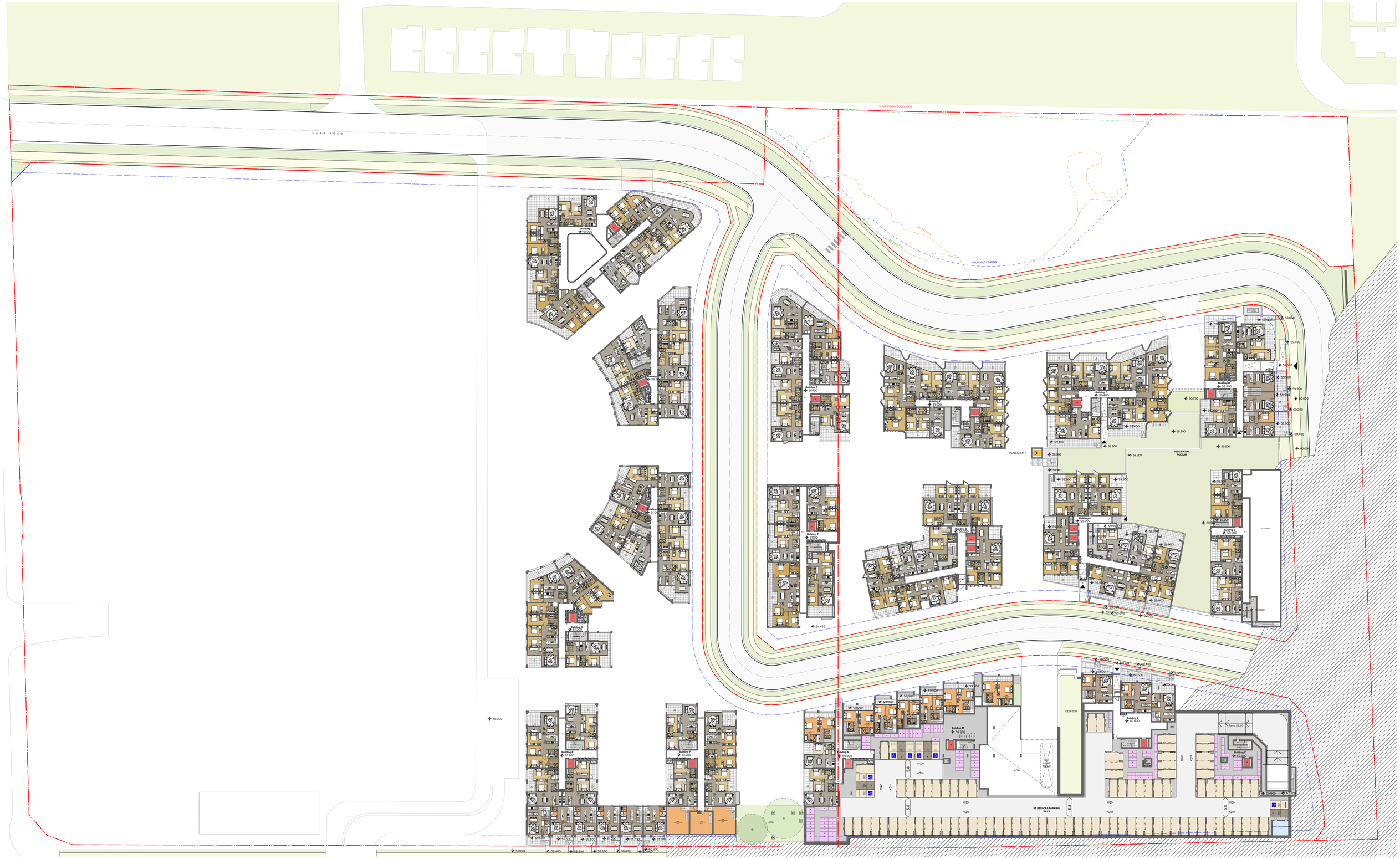


| Rev | Date | Approved by | Revision Notes |
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**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

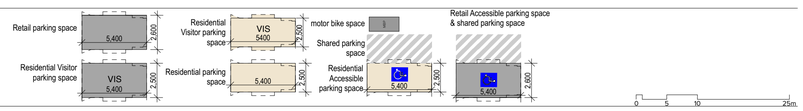
**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

| | |
|---|---|
| Site Boundary | |
| Setback | |
| ADG Setback | |

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |




Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 59.400**

| Scale | Project No. | Drawn by | North |
|---|---|---|---|
| **1:500 @A1, 50%@A3** | **20096** | **AKK/CAR/YLG/KT/MMN/WZT** | |
| Status | Dwg No. | Rev | |
| **For Coordination** | **DA-110-030** | **11** | |

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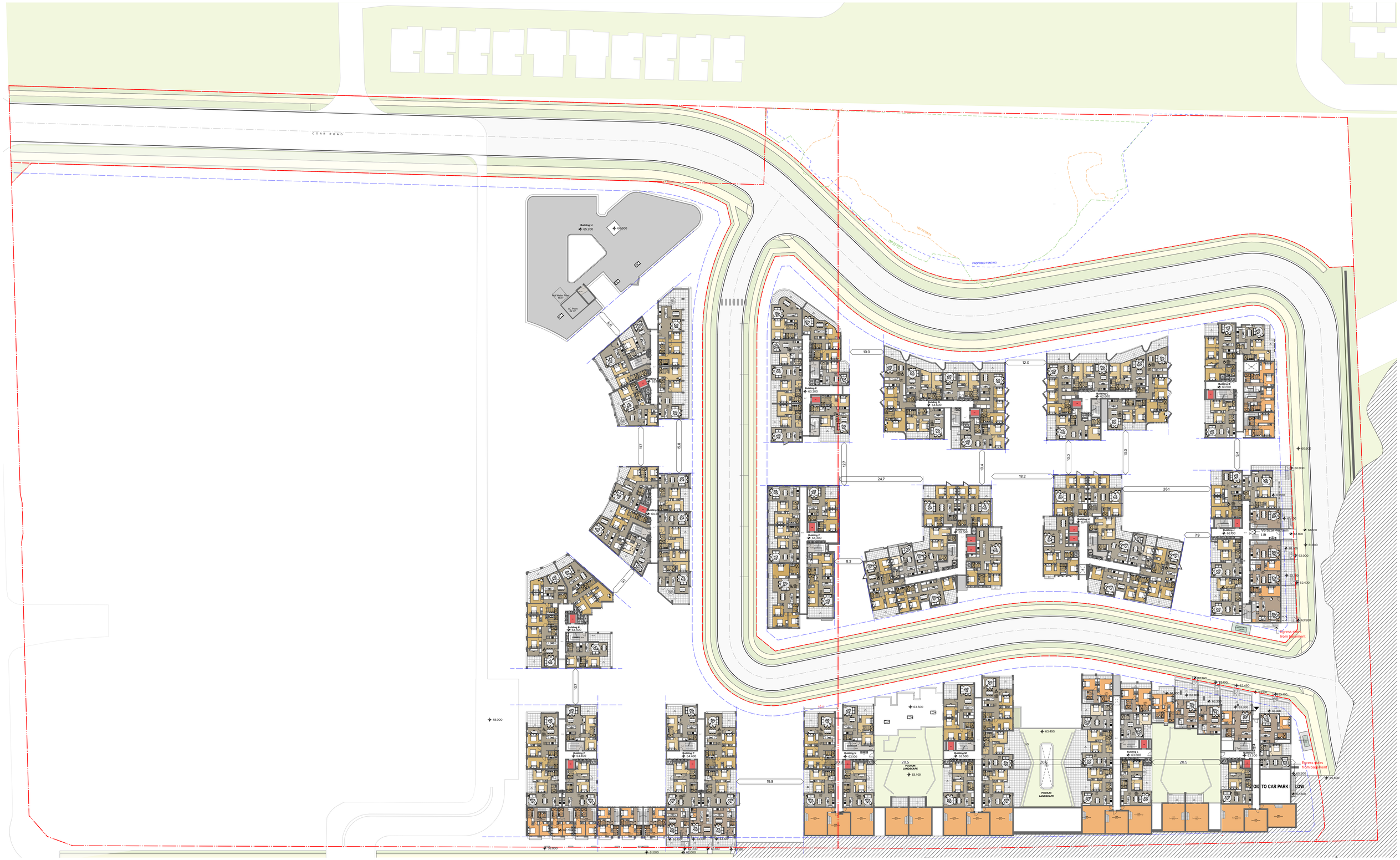


| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 11 | 20.02.24 | BF | For Coordination |

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0 1 5 10 25m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 62.600**

Scale: **1:500 @A1, 50%@A3**
Project No.: **20096**
Drawn by: **AKKCHPUGI/ KTMMNNIZT**
North
Status: **For Coordination**
Dwg No.: **DA-110-040**
Rev: **11**

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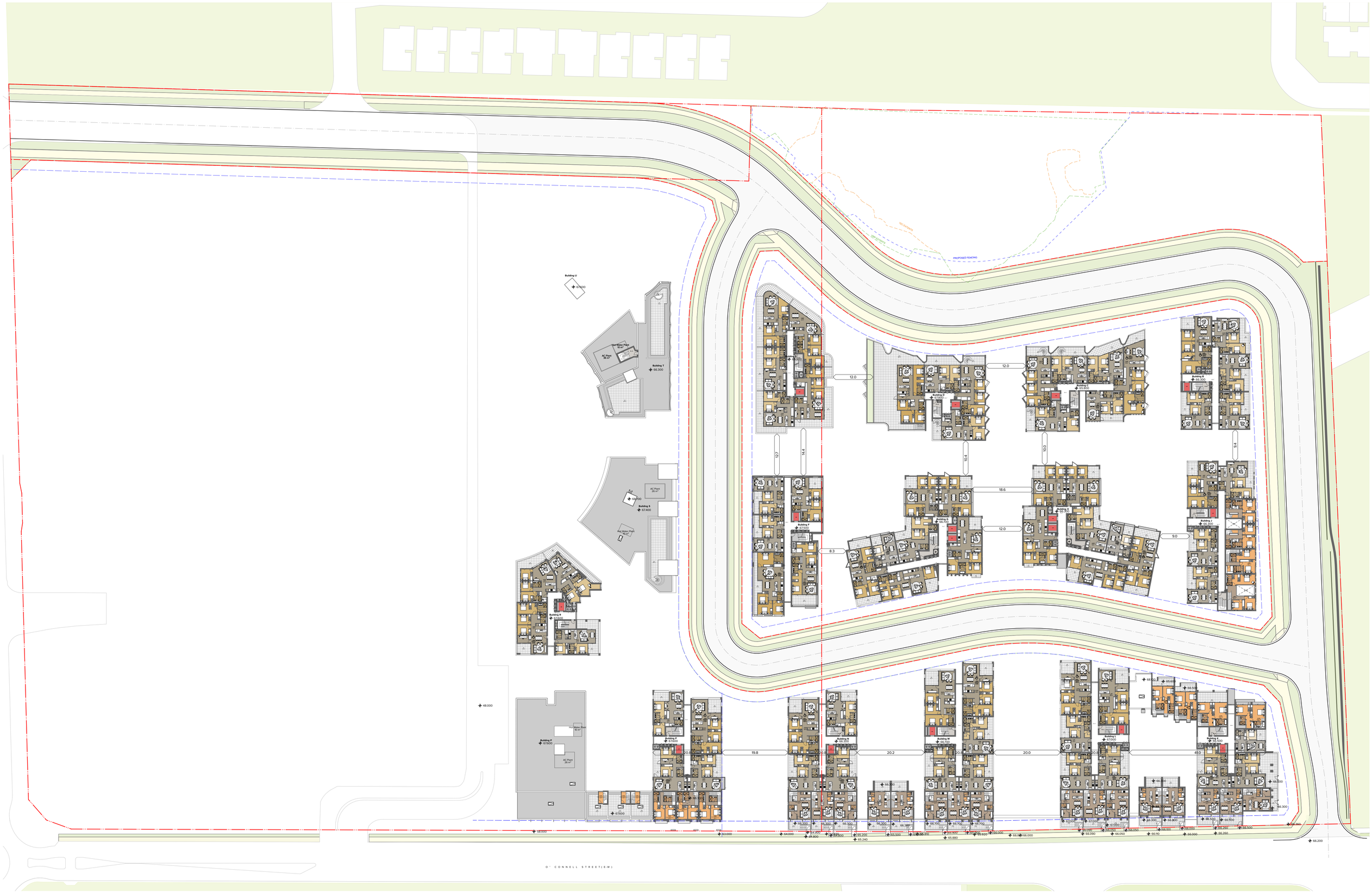


**NOTES**



**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0.1 5 10 25m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 65.800**

Scale
**1:500 @A1, 50%@A3**

Status
**For Coordination**

Project No.
**20096**

Dwg No.
**DA-110-050**

Drawn by
**AKK/CH/YUG/KT/MN/NN/ZT**

Rev
**10**

North

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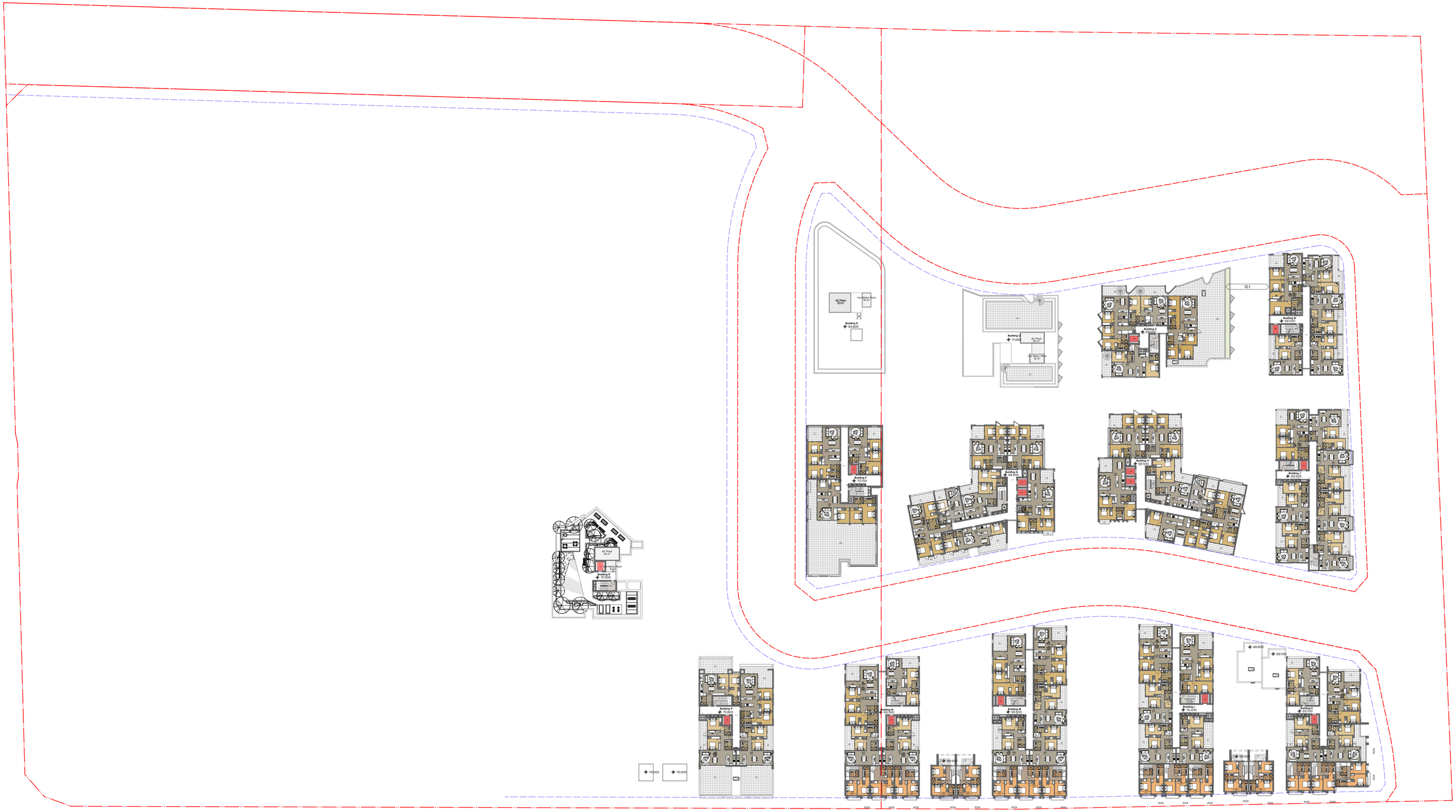


| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

| | |
|---|---|
| Site Boundary | |
| Setback | |
| ADG Setback | |

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0.1 5 10 25m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 69.000**

| Scale | Project No. | Drawn by | North |
|---|---|---|---|
| **1:500 @A1, 50%@A3** | **20096** | AKKCHPYUGI/ KTMMNNZT | |
| Status | Dwg No. | Rev | |
| **For Coordination** | **DA-110-060** | **10** | |

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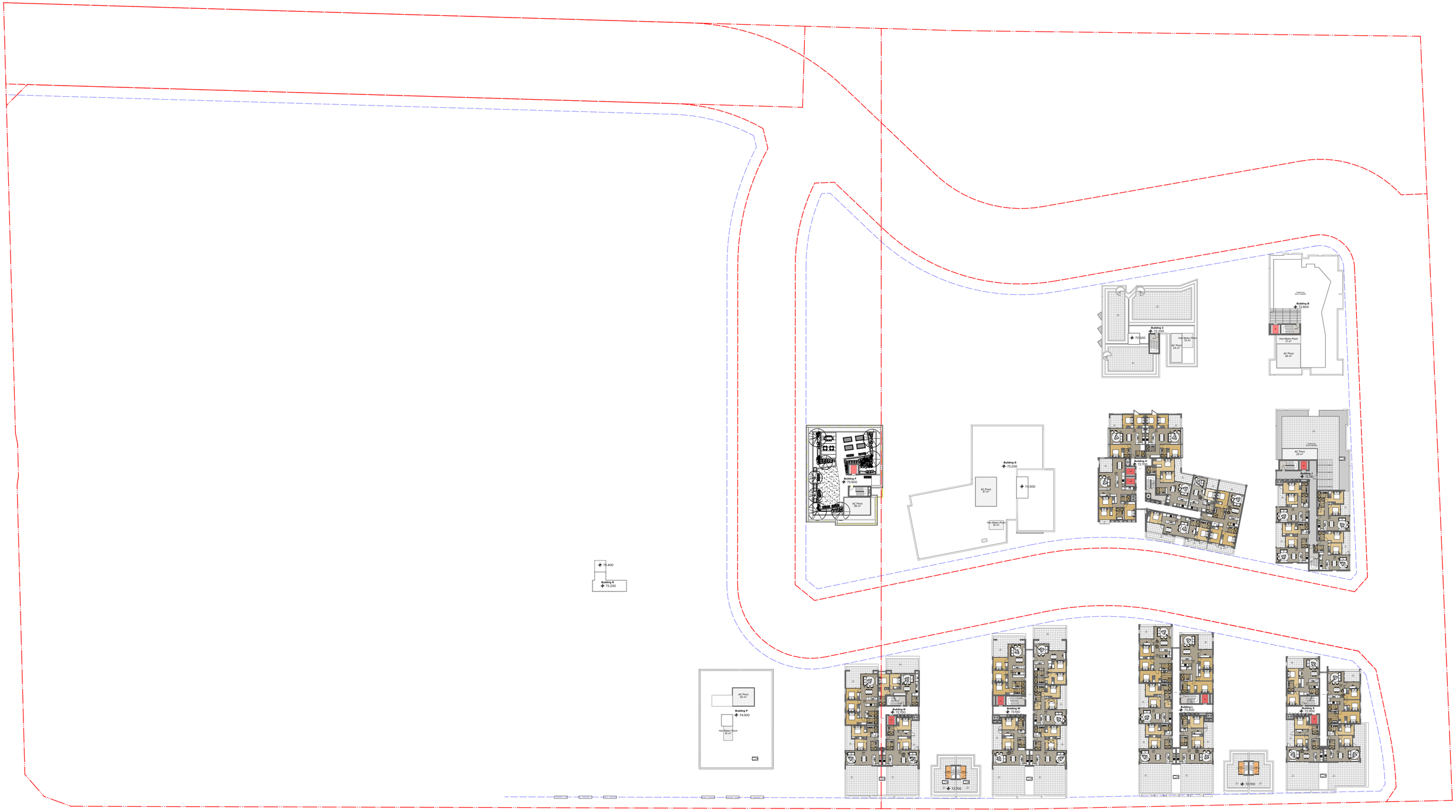


| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0.1 5 10 25m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 72.200**

| Scale | Project No. | Drawn by | North |
|---|---|---|---|
| **1:500 @A1, 50%@A3** | **20096** | **AKK/CH/YUG/KT/MM/NHZT** | |
| Status: **For Coordination** | Dwg No. **DA-110-070** | Rev **10** | |

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1 RL 75.400
1:500

2 RL 78.600
1:500

| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0 1 5 10 25m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**GA Plans**
**RL 75.400**

| Scale | Project No. | Drawn by | North |
|---|---|---|---|
| 1:500 @A1, 50%@A3 | 20096 | AKKCHPUGI/ KTMMNNZT | |
| Status: For Coordination | Dwg No. DA-110-080 | Rev 10 | |

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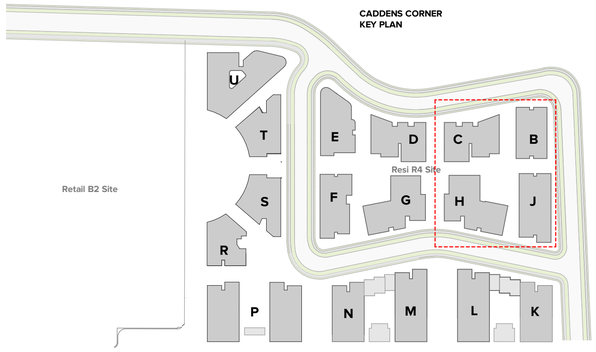



| VEHICLE PARKING REQUIREMENTS_STAGE 1 - BUILDINGS B C H J | | | | |
|---|---|---|---|---|
| Apt Type | Rate | | No. of Apt | Req Parking |
| 1 Bed | 1 | (DCP) | 7 | 7 |
| 2Bed | 1 | (DCP) | 30 | 30 |
| 2Bed+ | 1 | (DCP) | 19 | 19 |
| 2Bed TH | 1.5 | (DCP) | 4 | 6 |
| 3Bed | 2 | (DCP) | 27 | 54 |
| 3Bed+ | 2 | (DCP) | 12 | 24 |
| 3Bed TH | 2 | (DCP) | 2 | 4 |
| 4Bed | 2 | (DCP) | 1 | 2 |
| 4Bed TH | 2 | (DCP) | 1 | 2 |
| Subtotal | | | **103** | **148** |
| **Total (less Adaptable)** | | | **11** | **137** |
| **Residential Visitr** (Excludes Adapt) | 0.2 | 1 per 5 dwellings (DCP) | | 19 |
| **TOTAL standard bays** | | | | **156** |
| **Ancillary Parking Requirements** | | | | |
| **Residential** | **Rate** | | | **Req Parking** |
| Adaptable Space | 0.1 | 1 per 10 dwellings (ADG) | **103** | **11** |
| **Visitor** | | | | |
| Accessible | 0.05 | 1 per <20; +1 per 20-50; +1 per 50 there after (2890) | **21** | **2** |
| Car wash bay | 0.02 | 1 per 50 dwellings (DCP) | **103** | **3** |
| Charging bay | 0.01 | 1 per 100 dwellings | **103** | **2** |
| **Motorcycle Parking** | | | | |
| Residential | 0.02 | 1 per 50 car spaces | **103** | **3** |
| **Bicycle Parking** | | | | |
| Residential | 0.20 | 1 per 4 dwellings | **103** | **21** |
| Visitor | 0.05 | 1 per 20 dwellings | **103** | **6** |
| TOTAL | | | | **27** |
| **TOTAL standard bays + Adaptable + Visitor** | | | | **174** |

***NOTE**:
1. All residential parking spaces have a minimum width of 2.5m in accordance with Penrith DCP and AS2890.1

2. All retail parking spaces have a minimum width of 2.6m and aisle width 6.6m in accordance with AS2890.1 User Class 3A

| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 09 | 20.02.24 | BF | For Coordination |

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

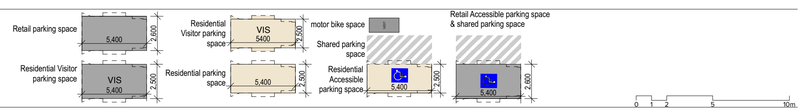
**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc.. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |




Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**Bldg B C H J**
**RL 52.700**

Scale: **1:200 @A1, 50%@A3**
Status: **For Coordination**
Project No.: **20096**
Dwg No.: **DA-112-005**
Drawn by: **AKKCHRTUGI/ KTIMINNZT...**
Rev: **09**
North

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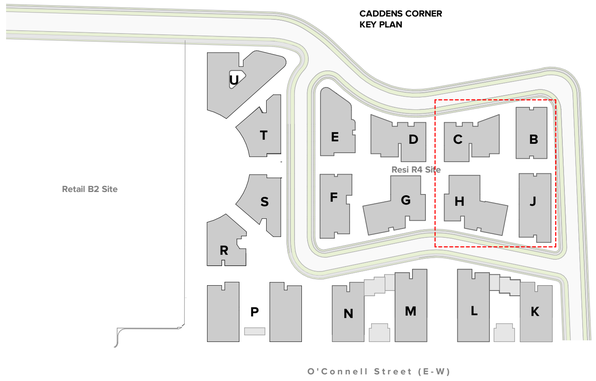



***NOTE**:
1. All residential parking spaces have a minimum width of 2.5m in accordance with Penrith DCP and AS2890.1

2. All retail parking spaces have a minimum width of 2.6m and aisle width 6.6m in accordance with AS2890.1 User Class 3A

| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

1 — RL 55.500
1:200

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

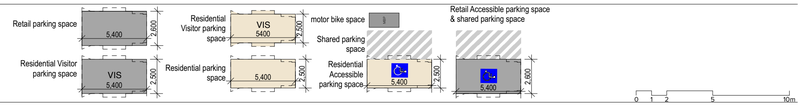
**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |




Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**Bldg B C H J**
**RL 55.500**

| Scale | Project No. | Drawn by | North |
|---|---|---|---|
| 1:200 @A1, 50%@A3 | 20096 | AKK/CH/YUG/KT/MM/NN/ZT | |
| Status: For Coordination | Dwg No. DA-112-006 | Rev 10 | |

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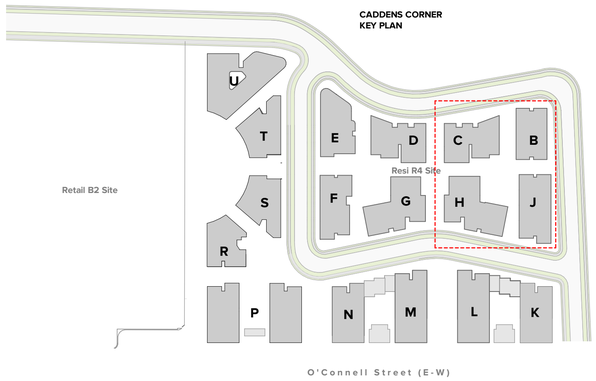


| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

1 — RL 59.900
1:200

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0 1 2 5 10m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**Bldg B C H J**
**RL 59.900**

Scale: **1:200 @A1, 50%@A3**
Project No.: **20096**
Drawn by: AKK/CHR/YJG/KT/MRN/WZT
North
Status: **For Coordination**
Dwg No.: **DA-112-010**
Rev: **10**

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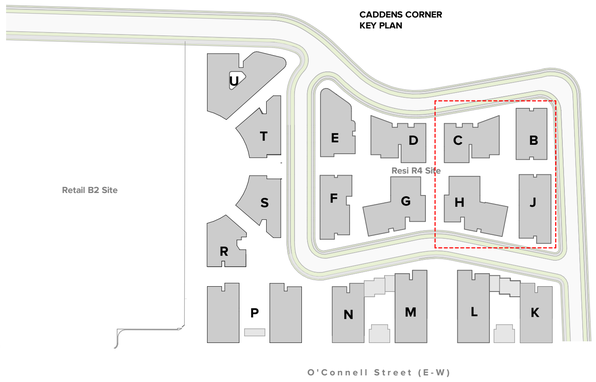


| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

1
-

**RL 63.100**
**1:200**

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

| | |
|---|---|
| Site Boundary | |
| Setback | |
| ADG Setback | |

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0 1 2 5 10m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**Bldg B C H J**
**RL 63.100**

Scale: **1:200 @A1, 50%@A3**
Status: **For Coordination**
Project No.: **20096**
Dwg No.: **DA-112-020**
Drawn by: **AKK/CN/FI/JG/KT/MN/NZT...**
Rev: **10**
North

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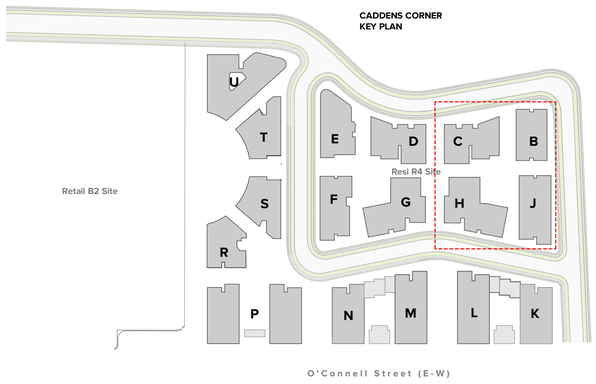


| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

1 — RL 66.300
1:200

**NOTES**



**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0 1 2 5 10m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**Bldg B C H J**
**RL 66.300**

Scale: **1:200 @A1, 50%@A3**
Project No.: **20096**
Drawn by: **AKK/CH/YI/JG/KT/MM/NN/ZT**
North
Status: **For Coordination**
Dwg No.: **DA-112-030**
Rev: **10**

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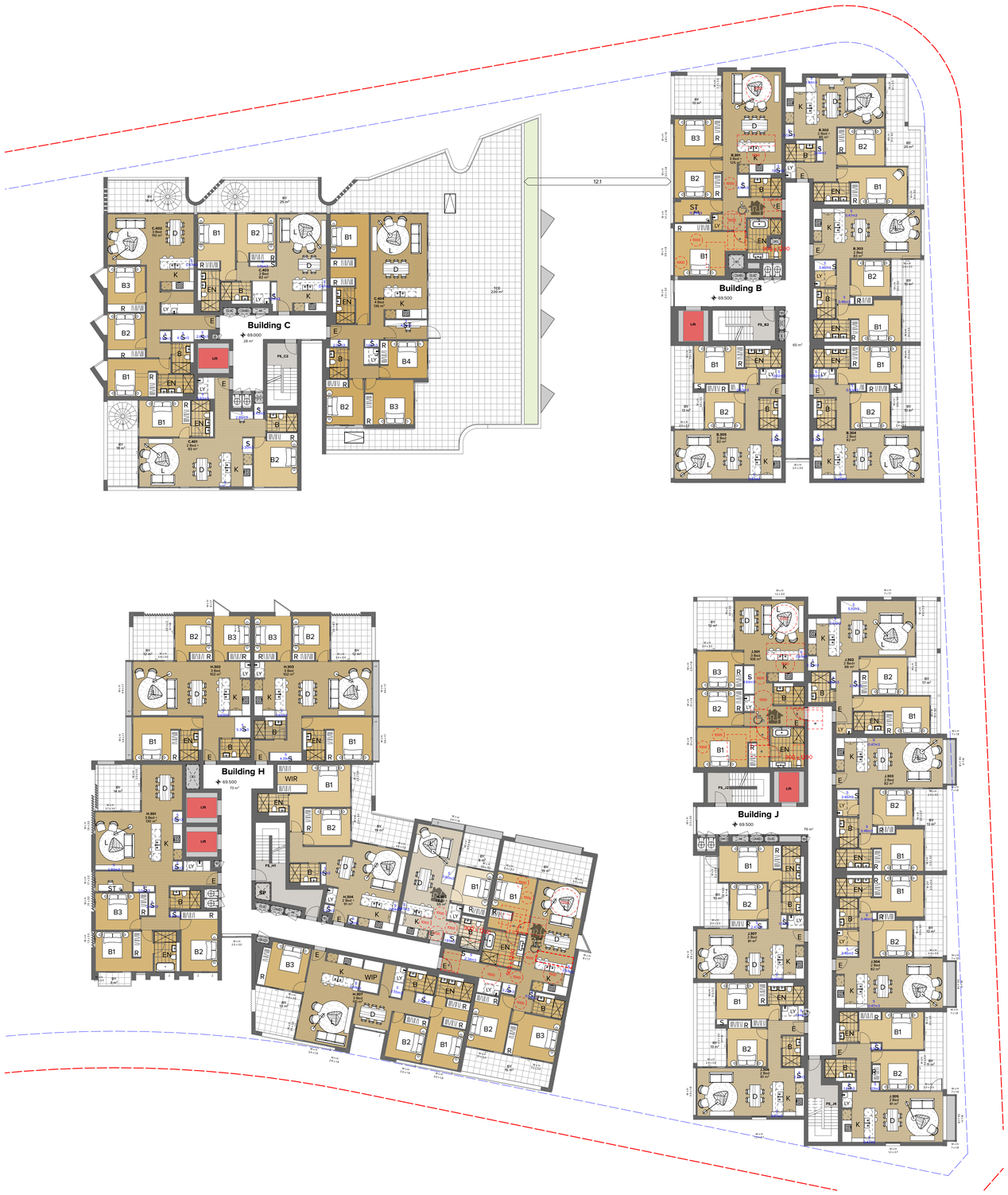


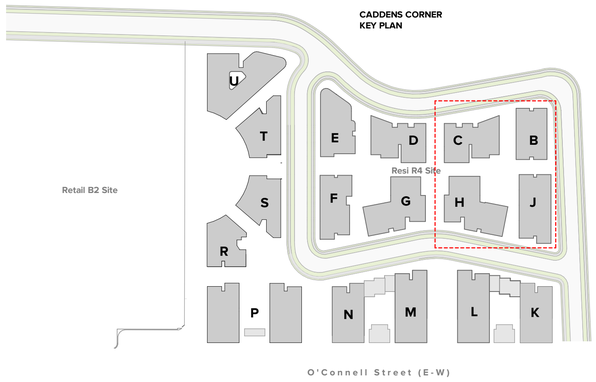


| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

1
-

**RL 69.500**
**1:200**

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

| | |
|---|---|
| Site Boundary | |
| Setback | |
| ADG Setback | |

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0 1 2 5 10m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**Bldg B C H J**
**RL 69.500**

Scale: **1:200 @A1, 50%@A3**
Project No.: **20096**
Drawn by: **AKKCNRTUGI KTIMNNIXZT...**
North
Status: **For Coordination**
Dwg No.: **DA-112-040**
Rev: **10**

**TURNER**

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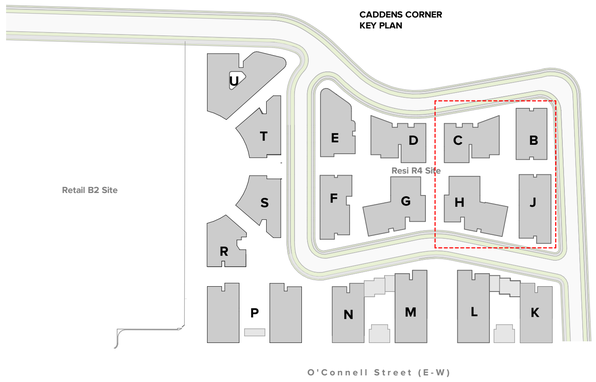



| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

1 — RL 72.700
1:200

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0 1 2 5 10m

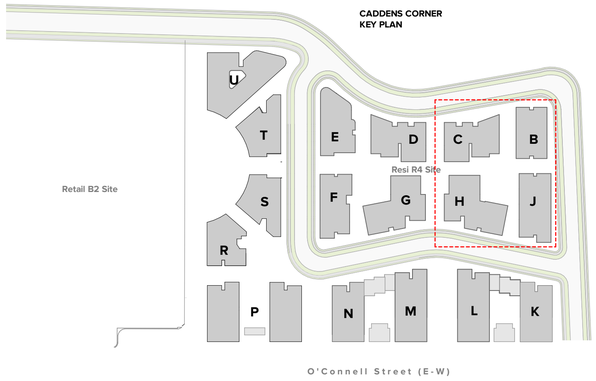
Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

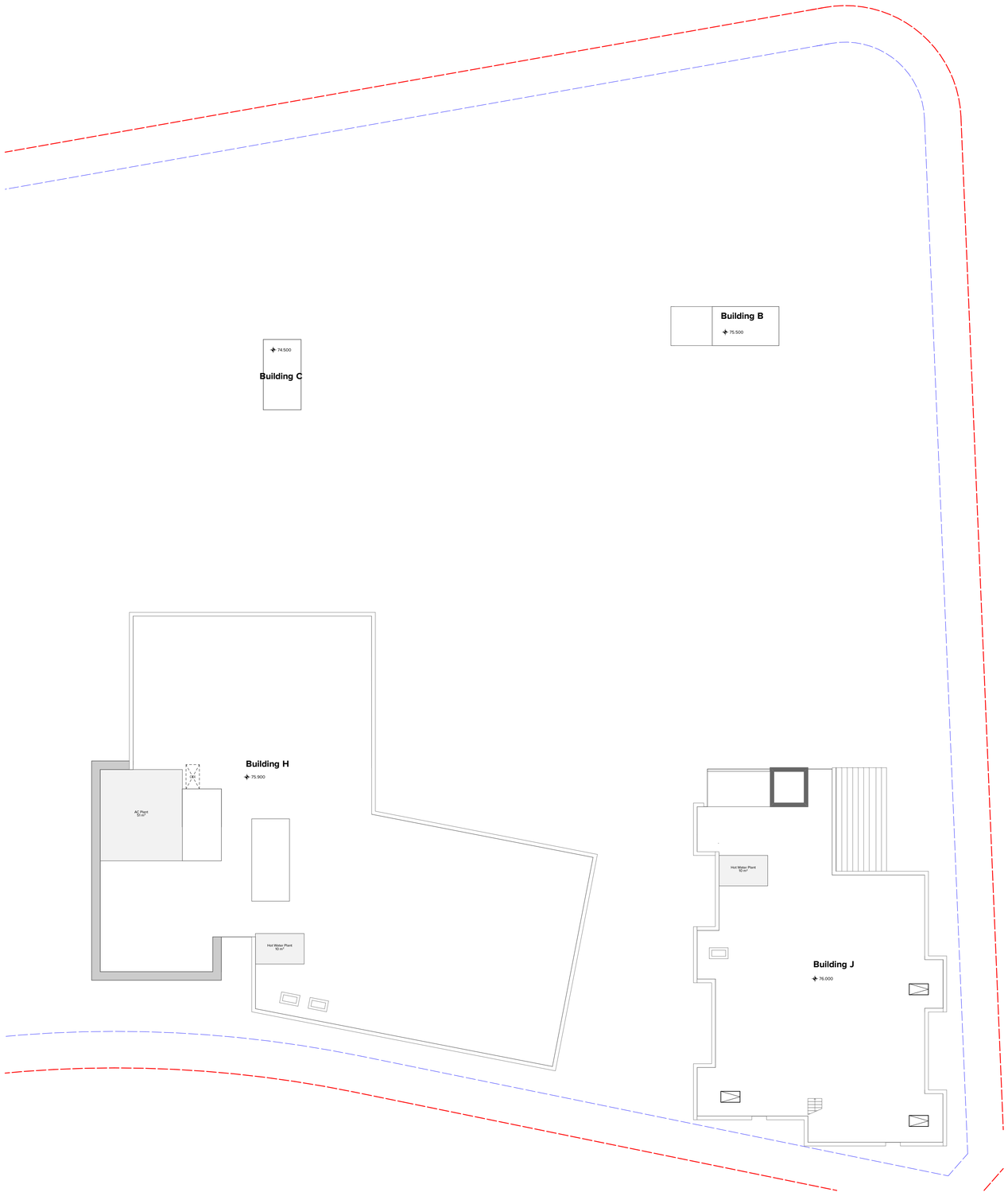
Drawing Title
**Bldg B C H J**
**RL 72.700**

Scale: **1:200 @A1, 50%@A3**
Project No.: **20096**
Drawn by: **AKKCHPYUGI/ KTMMNNTT**
North
Status: **For Coordination**
Dwg No.: **DA-112-050**
Rev: **10**

**TURNER**

Level 7 **ONE** Oxford Street
Darlinghurst NSW 2010
AUSTRALIA
T +61 2 8668 0000
F +61 2 8668 0088
turnerstudio.com.au




| Rev | Date | Approved by | Revision Notes |
|---|---|---|---|
| 10 | 20.02.24 | BF | For Coordination |

1
-

**RL 75.900/RL 76.000**
**1:200**

**NOTES**



DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 20476
Nominated Architect: Nicholas Turner 6695, ABN 86 064 084 911

**CLIENT**

**Holdmark Property Group**
2/ 2-4 Giffnock Avenue Macquarie Park
NSW 2113 Australia

**LEGEND**

Site Boundary
Setback
ADG Setback

| | | | | | |
|---|---|---|---|---|---|
| ACC | Accessible | FEX | Fire Extinguisher | LY | Laundry |
| ADP | Adaptable | FH | Fire Hydrant | S | Store |
| B | Bathroom | GBC | Garbage Chute | SA | Supply Air |
| B1,2... | Bedroom 1, Bedroom 2, etc. | GL | Ground Line | ST | Study |
| BY | Balcony | K | Kitchen | TCE | Terrace |
| D | Dining | L_01,02 | Lift No.1, 2, etc. | VIS | Visitor |
| E | Entry | L | Living | WIP | Walk-in Pantry |
| EN | Ensuite | LR | Lobby Relief Air | | |

0 1 2 5 10m

Project Title
**O'Connell Street Caddens**
O'Connell St Caddens NSW 2747 Australia

Drawing Title
**Bldg B C H J**
**RL 75.900 - 80.000**

Scale
**1:200 @A1, 50%@A3**
Status
**For Coordination**
Project No.
**20096**
Dwg No.
**DA-112-060**
Drawn by
**AKK/CHY/UG/KT/MMN/HZT**
Rev
**10**
North

**TURNER**

Level 7 **ONE** Oxford Street
Darlinghurst NSW 2010
AUSTRALIA
T +61 2 8668 0000
F +61 2 8668 0088
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# Appendix B
# Other Developments

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994


## LEGEND

(A) EASEMENT FOR DRAINAGE

www.dialbeforeyoudig.com.au
DIAL1100 BEFORE YOU DIG

DA SUBMISSION
NOT FOR CONSTRUCTION

| REVISION | DESCRIPTION | BY | DATE |
|---|---|---|---|
| | | | |
| D | ISSUED FOR DA ENGINEERING APPROVAL | P.B. | 03/12/2021 |
| C | ISSUED FOR DA ENGINEERING APPROVAL | Y.L. | 06/10/2021 |
| B | ISSUED FOR DA ENGINEERING APPROVAL | W.M. | 06/05/2021 |
| A | ISSUED FOR DA ENGINEERING APPROVAL | D.T. | 31/07/2020 |

SITE DESCRIPTION
SUBDIVISION OF LOT 3 DP 1103503

THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO AMENDMENTS AND CHANGES DUE TO FURTHER INVESTIGATION, LATENT FINDS, UNKNOWN SITE CONDITIONS, SURVEYING AND LOCAL COUNCIL STATE AND FEDERAL GOVERNMENT AUTHORITIES RECOMMENDATIONS AND APPROVALS.
REPORTS AND INFORMATION REQUIRED TO FINALISE THIS PLAN WILL INCLUDE BUT WILL NOT BE LIMITED TO ARCHAEOLOGY, HERITAGE, CONTAMINATION, ECOLOGY, ZONING, DWELLING DENSITIES, CONSCIENTIOUS OBJECTION, GEOTECHNICAL, ADJOINING LANDOWNERS, REFERAL AUTHORITIES, FLOODING AND WATERWAYS, SEWERAGE, WATER SUPPLY, ELECTRICITY, TELECOMMUNICATION.

BAR SCALES
0 10 20 30 40
1:1000 AT A1

NOTE: BOUNDARY AND LOT DIMENSIONS, ALIGNMENTS AND AREAS ARE PROVISIONAL AND ROUNDED TO NEAREST DECIMAL PLACE. AS SUCH THESE AREA ARE SUBJECT TO FINAL SURVEY.

| SURVEY | HEIGHT DATUM | LGA | AUTHORITY REFERENCE |
|---|---|---|---|
| - | AHD | PENRITH CITY COUNCIL | |
| DESIGN | CHECKING | DA No. | DATE |
| M.D. | M.M. | | |
| DRAWN | CHECKING | CC No. | DATE |
| W.M. | M.M. | - | - |


PROJECT MANAGERS • SURVEYORS • PLANNERS • ENGINEERS
ABN: 86 064 110 809
GROUP DEVELOPMENT SERVICES PTY LTD
PO Box 498, Pennant Hills NSW 1715
Phone: +61 2 9980 1000
Fax: +61 2 9484 0355
Email: info@gdsland.com.au
www.gdsland.com.au




PROJECT
46 O'CONNELL STREET CADDENS
DA ENGINEERING

PLAN OF SUBDIVISION - OVERALL PLAN

| PROJECT REFERENCE | DATE OF ISSUE | REVISION No. | SHEET SIZE |
|---|---|---|---|
| P00361 | 03/12/2021 | D | A1 |

DRAWING NUMBER
100

FILE LOCATION: C:\USERS\ADMIN\ONEDRIVE - GROUP DEVELOPMENT SERVICES\4. DA ENGINEERING\P00361-46-66 O'CONNELL ST CADDENS-DA ENG-REV C.DWG -DWG NO: 100 -(Plot with----)- PLOT DATE: 12/3/2021 10:51 AM


| SUMMARY OF DEVELOPABLE LOTS | |
|---|---|
| LOT RANGE | 795 TO 919 |
| RESIDENTIAL LOTS | 117 |
| TOTAL AREA ($m^2$) | 43165 |
| AVERAGE SIZE ($m^2$) | 369 |

| LOT AREA SUMMARY | | |
|---|---|---|
| LOT SIZE | NUMBER | % |
| 6000m² (BASIN) | 1 | - |
| 10000m² (TOTAL SUPERLOT) | 1 | - |
| LOT SIZE | NUMBER | % |
| 600m² | 1 | 1.4 |
| 450m² | 24 | 25.3 |
| 375m² | 21 | 18.8 |
| 300m² | 60 | 47.2 |
| 240m² | 11 | 7.2 |
| <240m² | - | - |
| Total | 117 | 100.0 |

## LEGEND

- STAGE 8 LOTS
- STAGE 9 LOTS
- STAGE 10 LOTS
- PROPOSED SUBSTATION LOCATION AND EASEMENT
- PROPOSED 4.5m WIDE DRIVEWAY AND LAYBACK
- PROPOSED 3.0m WIDE DRIVEWAY AND LAYBACK

**DRAFT ISSUE ONLY**
PRELIMINARY DESIGNS SUBJECT TO CHANGE

DIMENSIONS AND AREAS ARE SUBJECT TO FINAL SURVEY

1:750 (AT A1)

15 7.5 0 7.5 15 22.5 30 37.5 45 525. 60 67.5 75
METRES

| | AMENDMENT | DES | DRN | CKD | APR | DATE |
|---|---|---|---|---|---|---|
| 25 | ISSUE FOR INFORMATION | GA | GA | DJ | | 06/07/22 |
| 24 | ISSUE FOR INFORMATION | GA | GA | DJ | DJ | 14/06/22 |
| 23 | ISSUE FOR INFORMATION | GA | GA | DJ | DJ | 29/04/22 |
| 22 | ISSUE FOR INFORMATION | GA | GA | DJ | DJ | 27/04/22 |
| 21 | ISSUE FOR INFORMATION | GA | GA | | | 21/04/22 |
| 20 | ISSUE FOR INFORMATION | GA | GA | | | 11/04/22 |
| 19 | ISSUE FOR INFORMATION | GA | GA | | | 08/04/22 |


J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au


AZIMUTH:
DATUM:
ORIGIN:

CLIENT:
LEGACYPROPERTY

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**ADVANCE COPY ONLY**
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CADDENS HILL
STAGES 8-10
SUBDIVISION PLAN

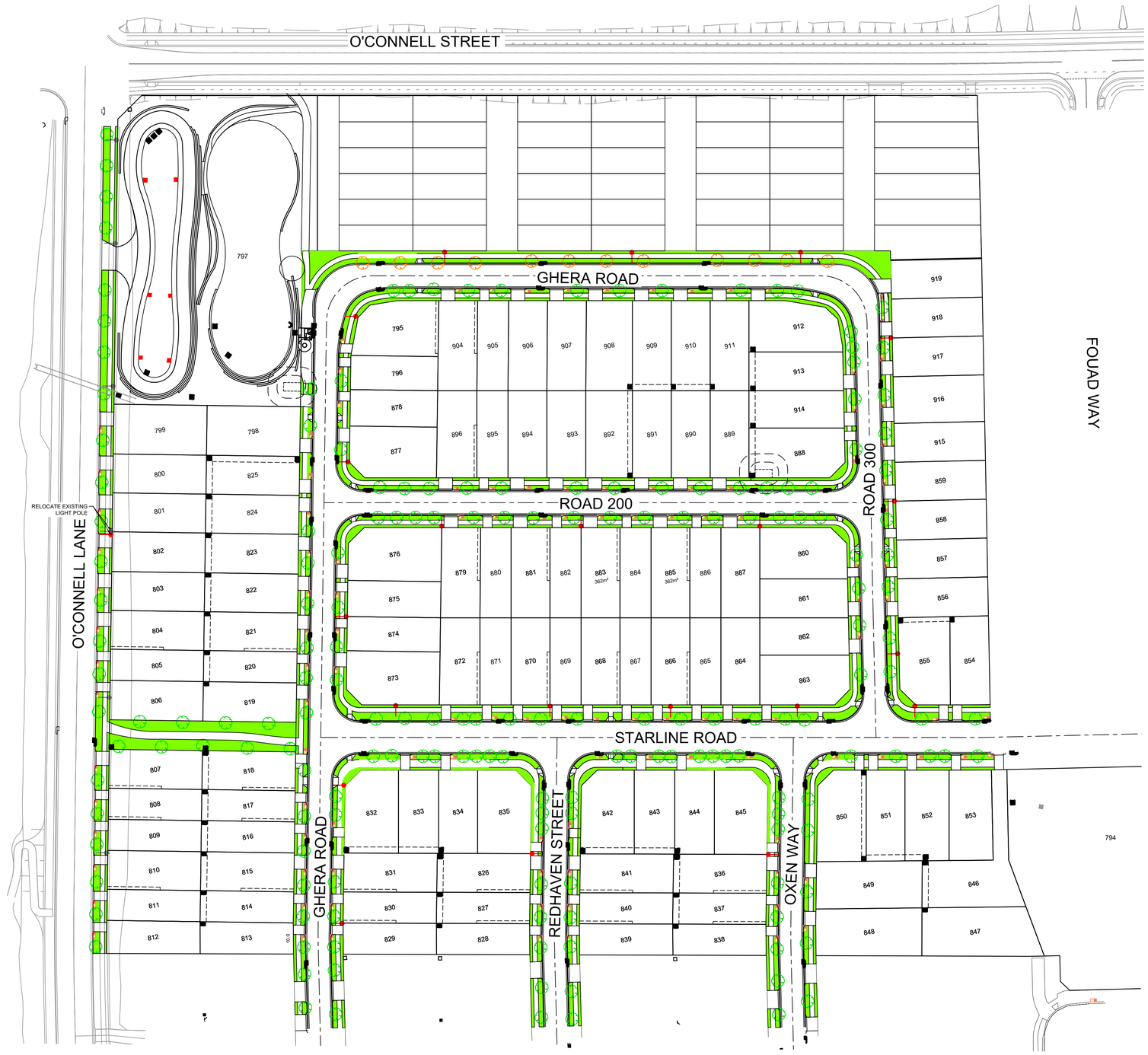
PLAN No: 110358/SK26 25
FILE No: 11035809SK26
SHEET SIZE: A1 ORIGINAL

Plotted: 6 July , 2022 5:36:41 PM File Name: J:\110358 - OConnell Lane Caddens\09 - Masterplanning\CD\SK11035809SK26.dwg

## LEGEND

- PROPOSED INTERALLOTMENT DRAINAGE PIT
- PROPOSED KERB INLET PIT
- PROPOSED LIGHTPOLE
- EXISTING LIGHTPOLE
- PROPOSED TURRET
- INDICATIVE BIN LOCATION
- PROPOSED DRIVEWAY
- PROPOSED STREET TREE
- PROPOSED STREET TREE (STAGE 10)
- PROPOSED SUBSTATION LOCATION

NOTE:
1. PROPOSED SEWER, STORMWATER AND LIGHTING/TURRET DESIGN ARE SUBJECT TO DETAILED DESIGN




1:750 (AT A1)

15 7.5 0 7.5 15 22.5 30 37.5 45 52.5 60 67.5 75

METRES

**DRAFT ISSUE ONLY**
PRELIMINARY DESIGNS SUBJECT TO CHANGE

| | | | | | | |
|---|---|---|---|---|---|---|
| 11 | ISSUE FOR INFORMATION | GA | GA | DJ | | 06/07/22 |
| 10 | ISSUE FOR INFORMATION | GA | GA | | | 22/04/22 |
| 9 | ISSUE FOR INFORMATION | GA | GA | | | 11/04/22 |
| 8 | ISSUE FOR INFORMATION | GA | GA | | | 08/04/22 |
| 5 | ISSUE FOR INFORMATION | GA | GA | | | 06/04/22 |
| 4 | ISSUE FOR INFORMATION | GA | JM | DJ | DJ | 05/04/22 |
| 3 | ISSUE FOR INFORMATION | GA | JM | MS | DJ | 05/11/21 |
| | AMENDMENT | DES | DRN | CKD | APR | DATE |


**J. WYNDHAM PRINCE** CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au


AZIMUTH:
DATUM:
ORIGIN:

CLIENT:
LEGACYPROPERTY

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CADDENS HILL
STAGES 8 - 10
INFRASTRUCTURE PLAN

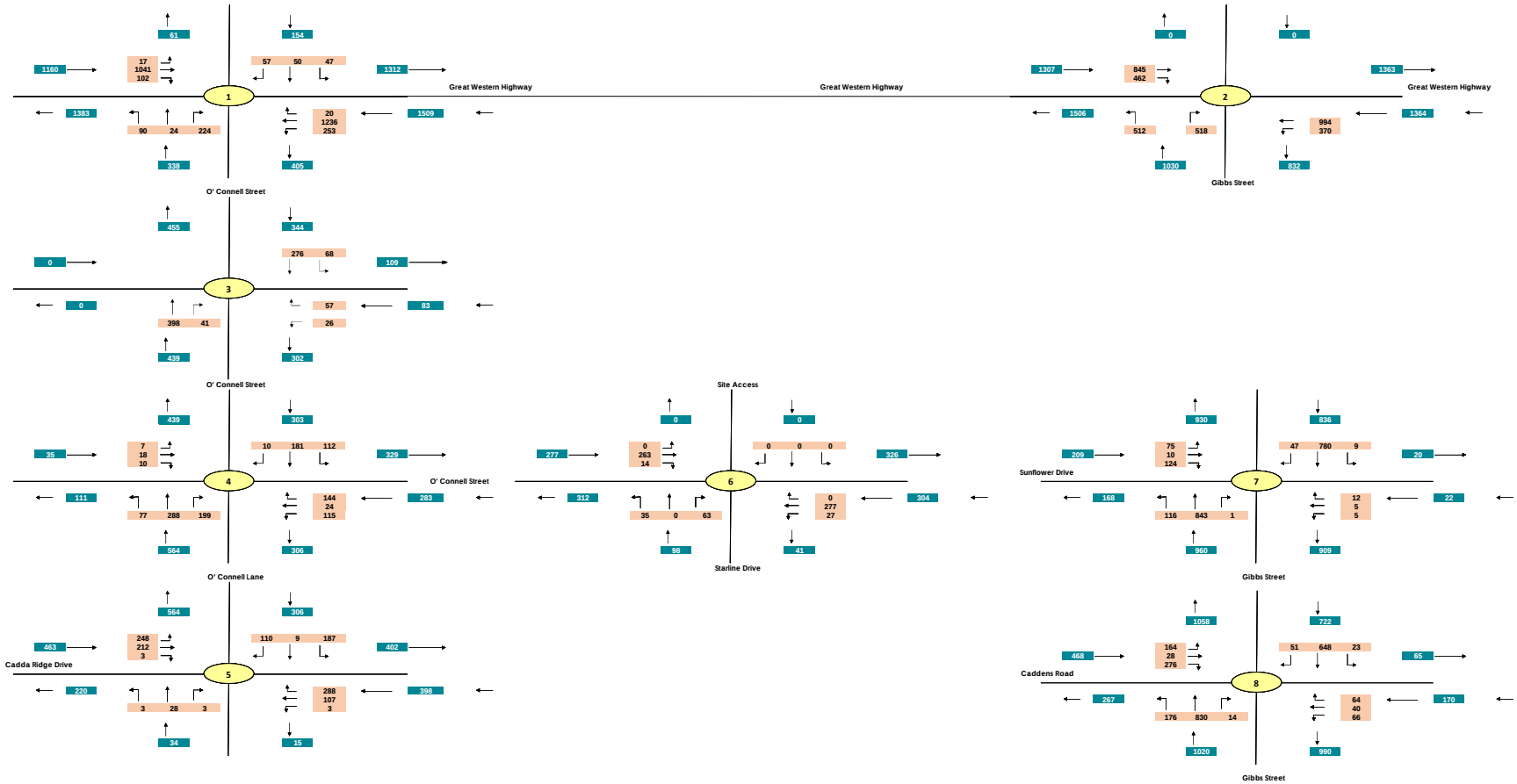
PLAN No: 110358/SK37 | 11
FILE No: 11035809SK37
SHEET SIZE: A1 ORIGINAL


Plotted: 6 July , 2022 5:35:02 PM File Name: J:\110358 - OConnell Lane Caddens\09 - Masterplanning\CD\SK\11035809SK37.dwg

# Appendix C
# Traffic Volume Summary

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

## Existing AM


Great Western Highway
Great Western Highway
O' Connell Street
Gibbs Street
Great Western Highway
O' Connell Street
Site Access
O' Connell Street
Starline Drive
Sunflower Drive
Gibbs Street
O' Connell Lane
Cadda Ridge Drive
Caddens Road
Gibbs Street
1
2
3
4
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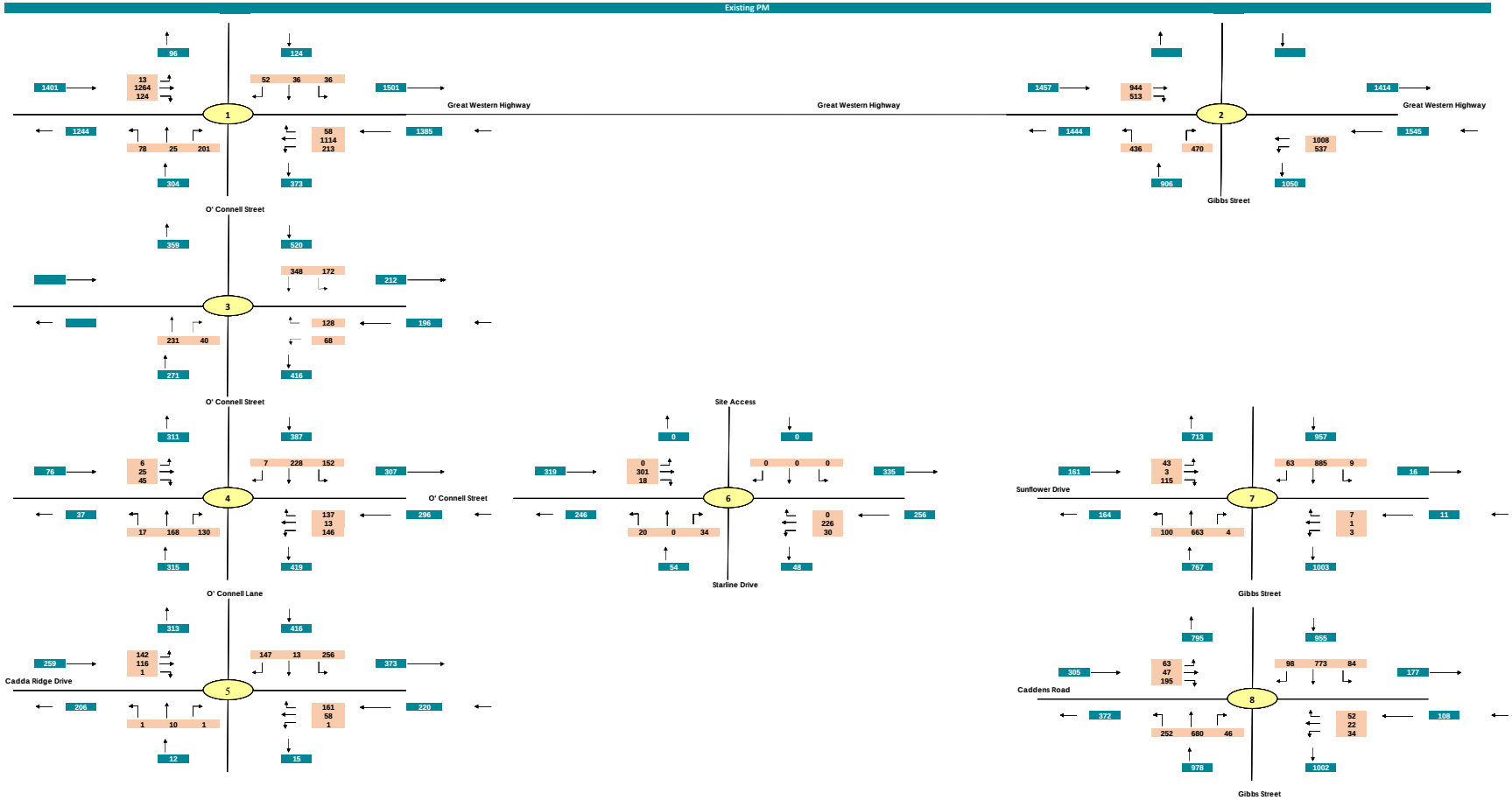
6
7
8

## Existing PM


Great Western Highway
Great Western Highway
O' Connell Street
Gibbs Street
O' Connell Street
Site Access
O' Connell Street
Starline Drive
Sunflower Drive
Gibbs Street
O' Connell Lane
Cadda Ridge Drive
Caddens Road
Gibbs Street
1
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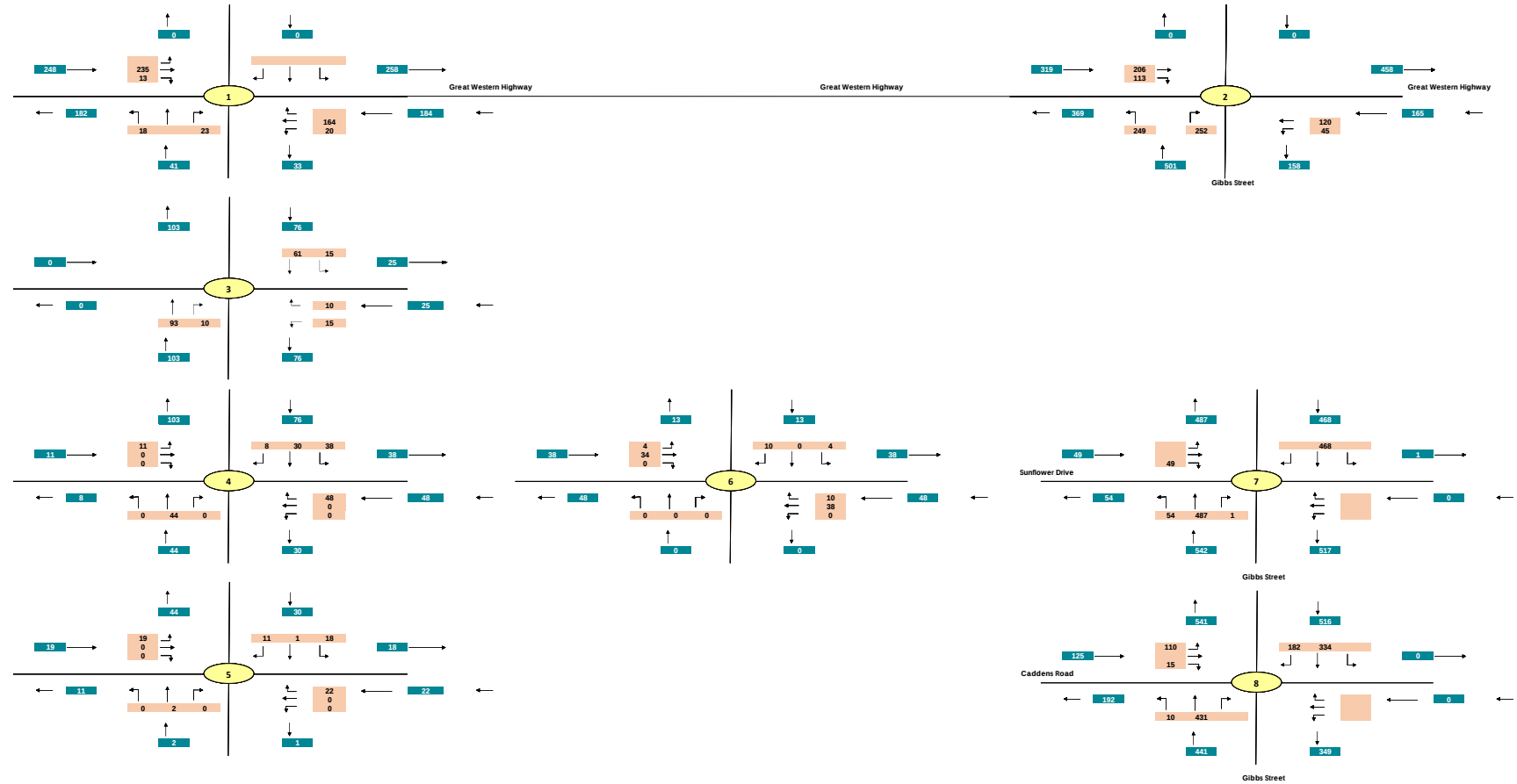
STFM AM


Great Western Highway
Great Western Highway
Great Western Highway
Gibbs Street
Sunflower Drive
Gibbs Street
Caddens Road
Gibbs Street
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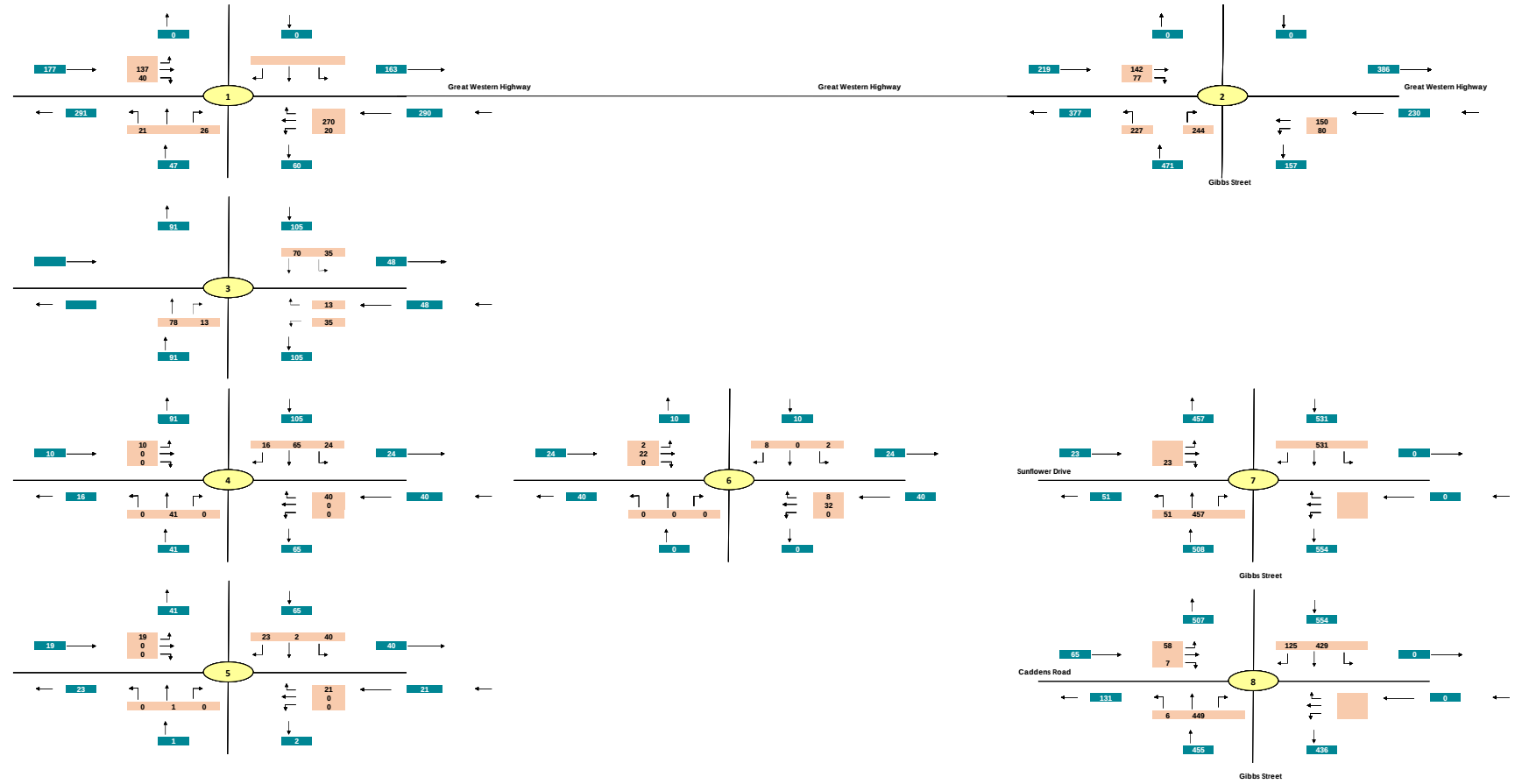
STFM PM


Great Western Highway
Great Western Highway
Great Western Highway
Gibbs Street
Sunflower Drive
Gibbs Street
Caddens Road
Gibbs Street
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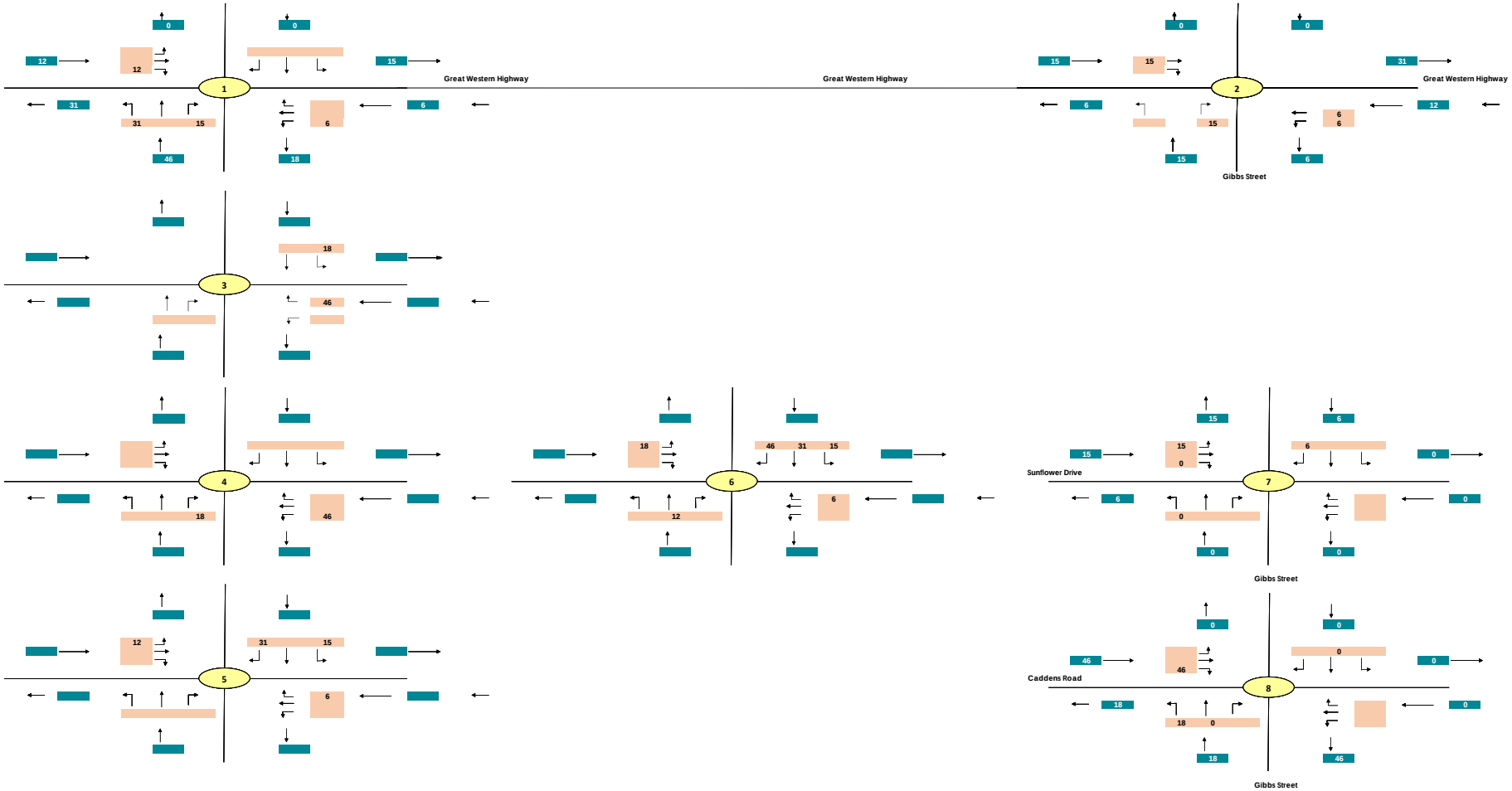
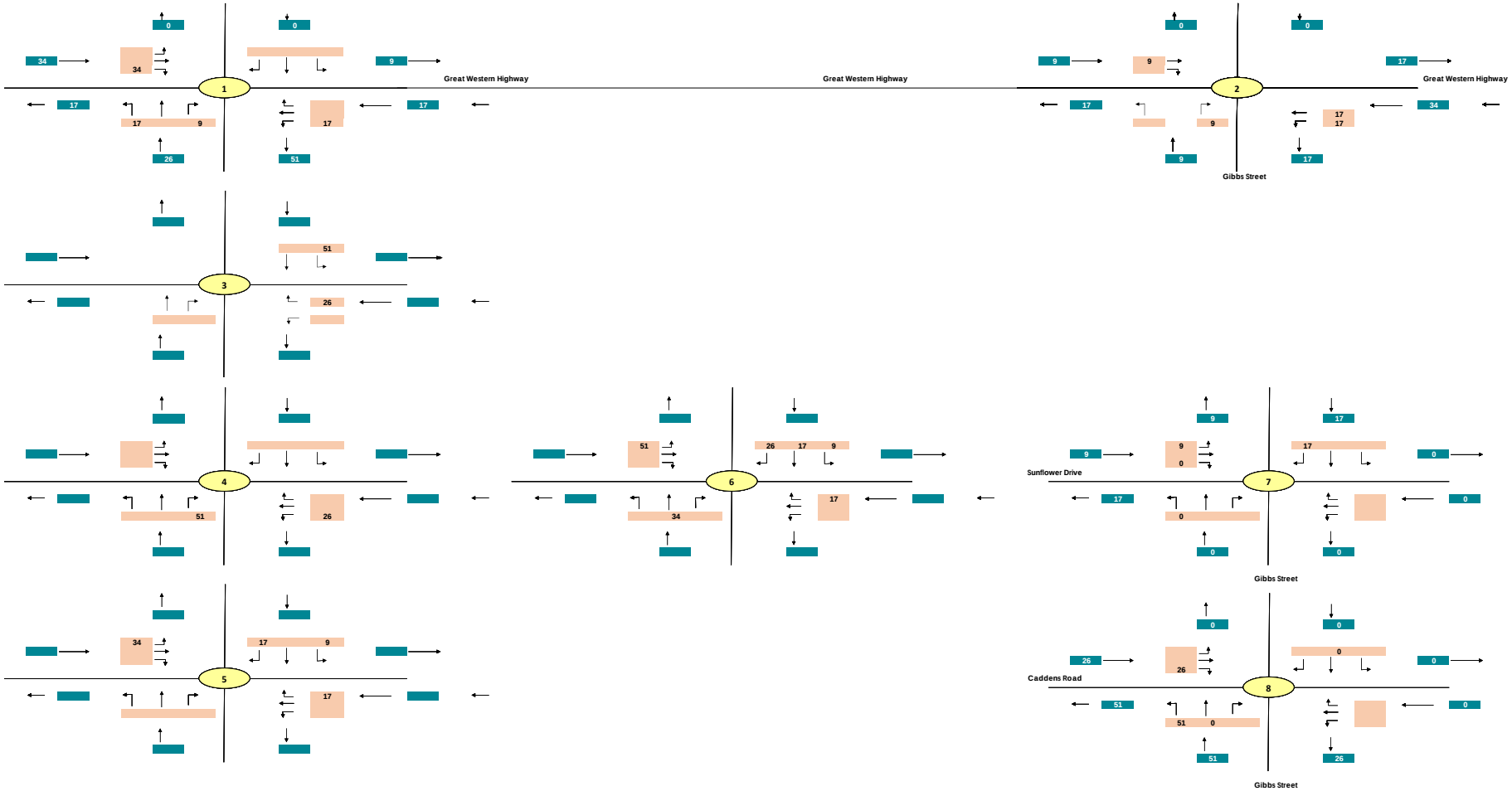
8

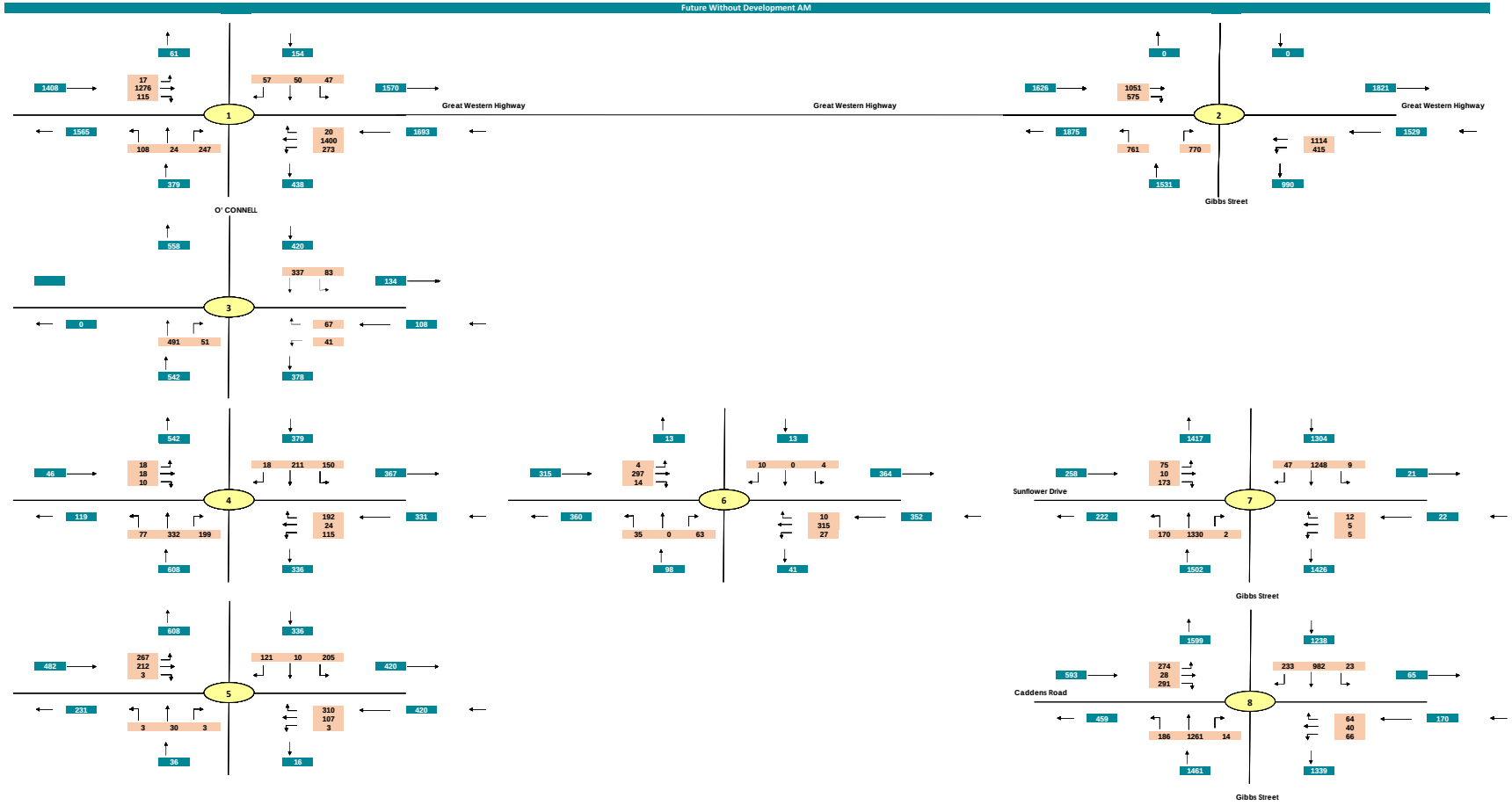
## Development Volumes AM



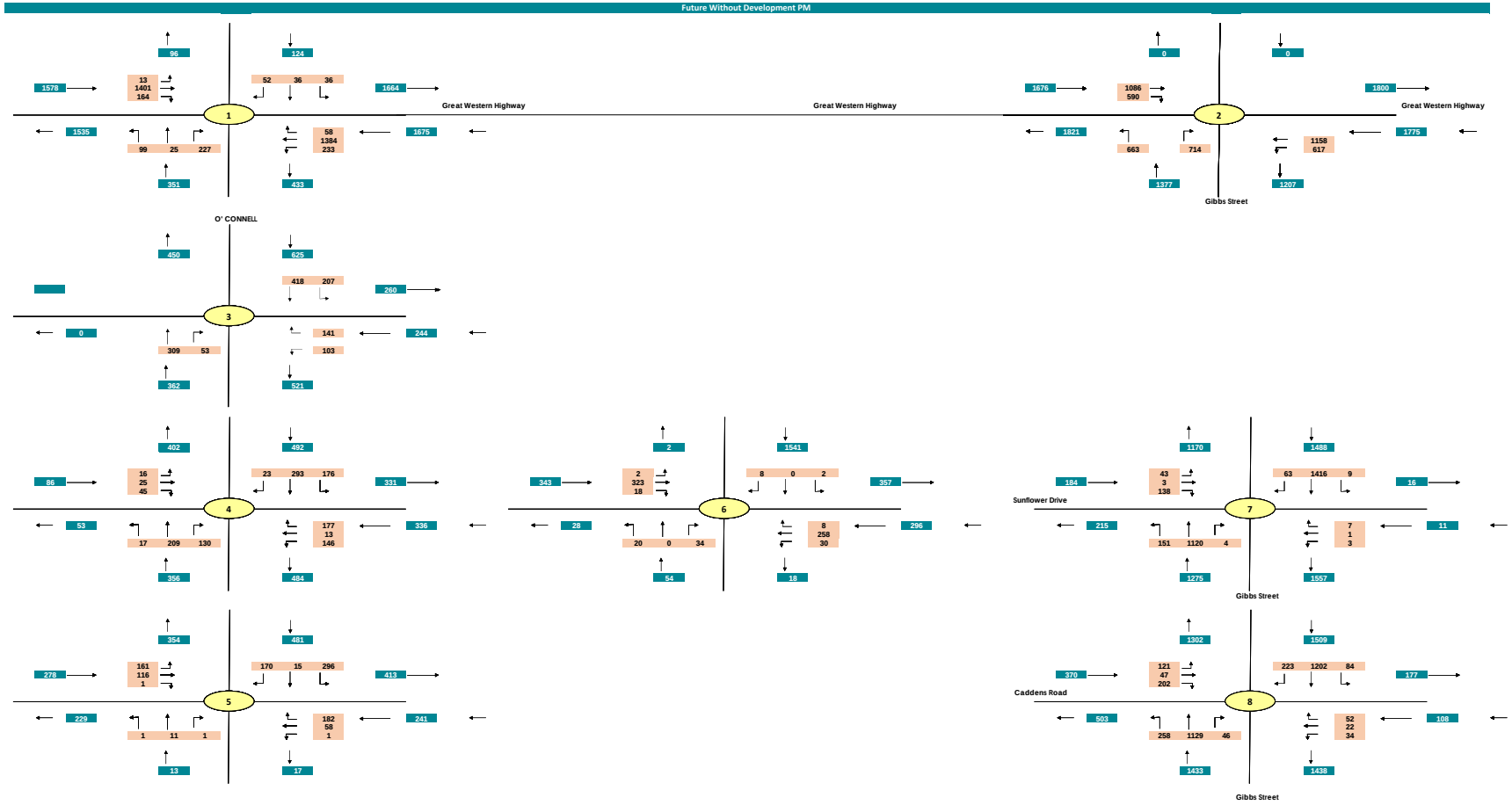
## Development Volumes PM



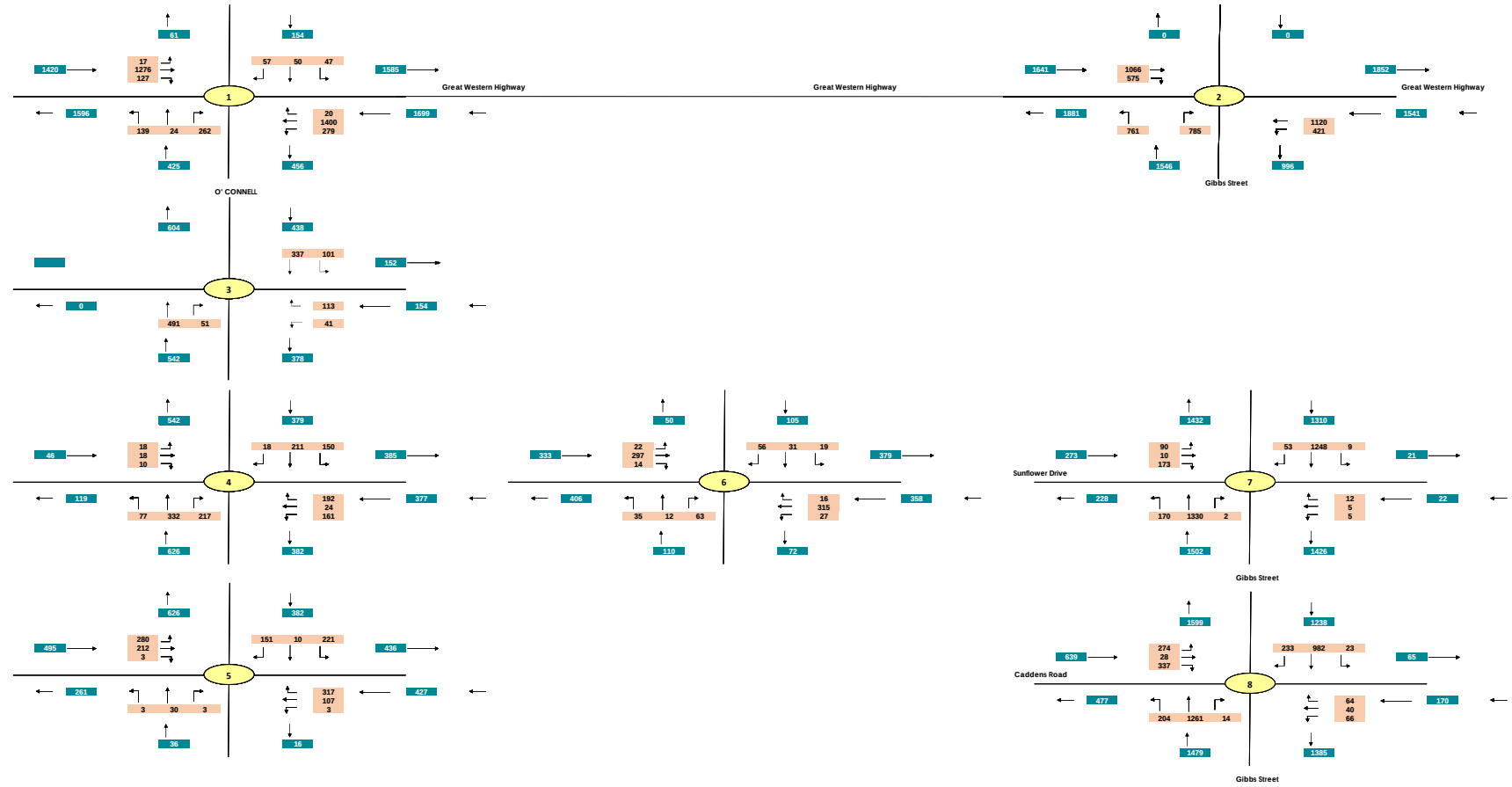
## Future Without Development AM



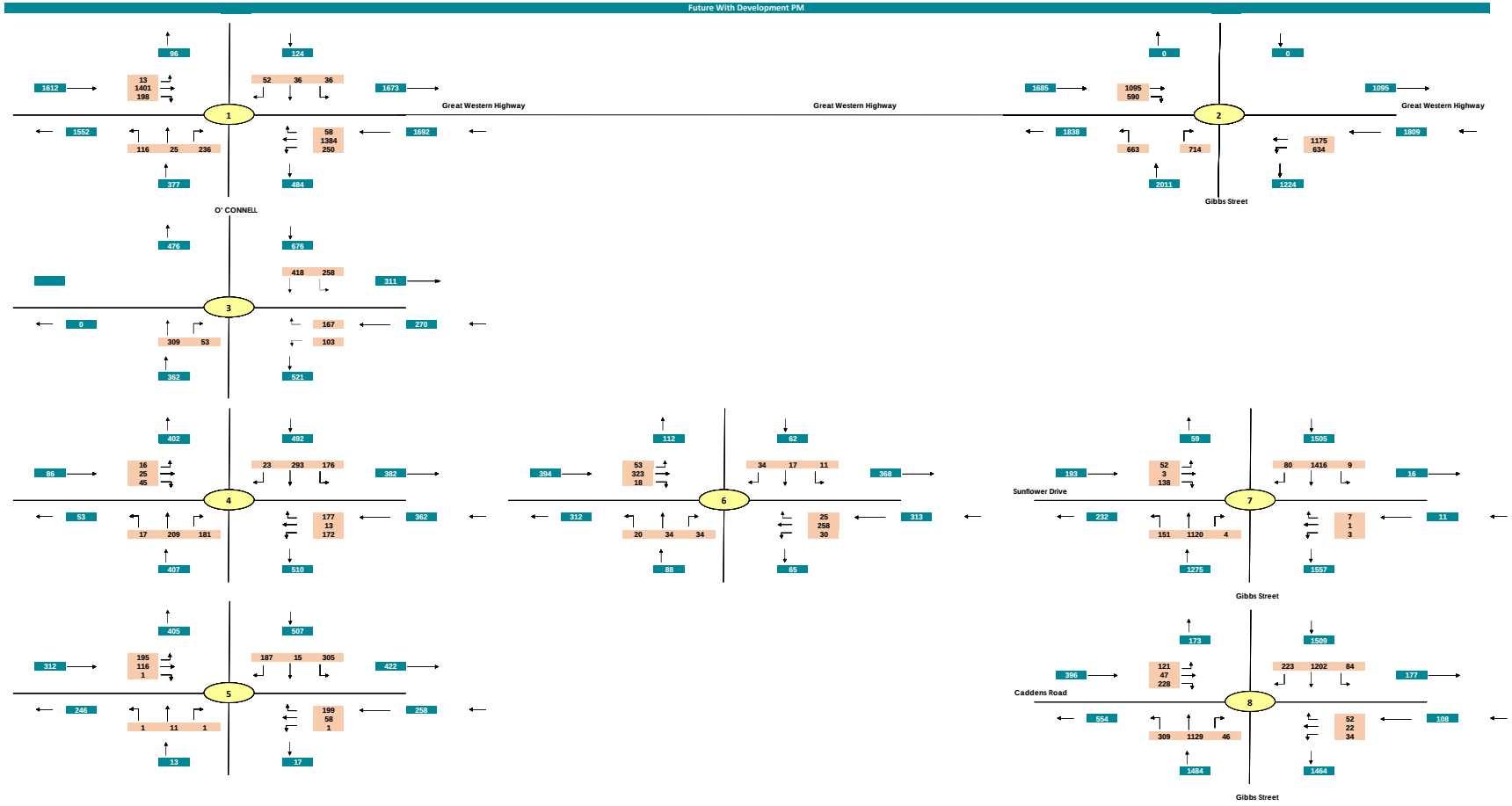
## Future Without Development PM



## Future With Development AM



## Future With Development PM



# Appendix D
# SIDRA Results

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

# MOVEMENT SUMMARY

## Site: 1 [Great Western Highway/O'Connell Street (Site Folder: Existing AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] veh/h | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 1 | L2 | 90 | 2 | 95 | 2.2 | 0.182 | 34.3 | LOS C | 4.7 | 33.6 | 0.72 | 0.71 | 0.72 | 37.8 |
| 2 | T1 | 24 | 1 | 25 | 4.2 | 0.745 | 28.9 | LOS C | 13.3 | 97.2 | 0.73 | 0.71 | 0.74 | 32.7 |
| 3 | R2 | 224 | 11 | 236 | 4.9 | * 0.745 | 50.8 | LOS D | 13.3 | 97.2 | 0.95 | 0.88 | 1.04 | 32.5 |
| Approach | | 338 | 14 | 356 | 4.1 | 0.745 | 44.9 | LOS D | 13.3 | 97.2 | 0.88 | 0.82 | 0.94 | 33.8 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 253 | 9 | 266 | 3.6 | 0.315 | 27.1 | LOS B | 9.6 | 69.4 | 0.67 | 0.76 | 0.67 | 40.0 |
| 5 | T1 | 1236 | 31 | 1301 | 2.5 | * 0.736 | 27.5 | LOS B | 31.0 | 221.8 | 0.87 | 0.79 | 0.87 | 41.3 |
| 6 | R2 | 20 | 1 | 21 | 5.0 | 0.068 | 20.0 | LOS B | 0.5 | 3.8 | 0.66 | 0.68 | 0.66 | 38.8 |
| Approach | | 1509 | 41 | 1588 | 2.7 | 0.736 | 27.4 | LOS B | 31.0 | 221.8 | 0.83 | 0.78 | 0.83 | 41.1 |
| North: French Street | | | | | | | | | | | | | | |
| 7 | L2 | 47 | 0 | 49 | 0.0 | 0.075 | 30.5 | LOS C | 2.0 | 13.7 | 0.66 | 0.70 | 0.66 | 34.1 |
| 8 | T1 | 50 | 0 | 53 | 0.0 | 0.262 | 37.0 | LOS C | 5.0 | 35.0 | 0.81 | 0.73 | 0.81 | 31.2 |
| 9 | R2 | 57 | 1 | 60 | 1.8 | 0.262 | 42.4 | LOS C | 5.0 | 35.0 | 0.82 | 0.74 | 0.82 | 29.9 |
| Approach | | 154 | 1 | 162 | 0.6 | 0.262 | 37.0 | LOS C | 5.0 | 35.0 | 0.77 | 0.72 | 0.77 | 31.5 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 10 | L2 | 17 | 5 | 18 | 29.4 | 0.585 | 27.5 | LOS B | 11.1 | 81.1 | 0.68 | 0.59 | 0.68 | 37.1 |
| 11 | T1 | 1041 | 38 | 1096 | 3.7 | 0.615 | 23.0 | LOS B | 19.3 | 139.7 | 0.72 | 0.63 | 0.72 | 43.6 |
| 12 | R2 | 102 | 7 | 107 | 6.9 | * 0.448 | 27.0 | LOS B | 2.9 | 21.7 | 0.89 | 0.79 | 0.89 | 40.0 |
| Approach | | 1160 | 50 | 1221 | 4.3 | 0.615 | 23.4 | LOS B | 19.3 | 139.7 | 0.73 | 0.64 | 0.73 | 43.2 |
| All Vehicles | | 3161 | 106 | 3327 | 3.4 | 0.745 | 28.3 | LOS B | 31.0 | 221.8 | 0.80 | 0.73 | 0.80 | 40.3 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: Great Western Highway | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All Pedestrians | 10 | 11 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

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.


Organisation: TRANSPORT AND TRAFFIC PLANNING ASSOCIATES | Licence: NETWORK / 1PC | Processed: Thursday, 2 November 2023 11:48:31 AM
Project: T:\WORK22\22078 - O'CONNELL STREET, CADDENS\MODEL\Caddens JAN24.sip9

# MOVEMENT SUMMARY

## Site: 2 [Great Western Highway/Gipps Street (Site Folder: Existing AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] veh/h | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 512 | 26 | 539 | 5.1 | 0.463 | 20.5 | LOS B | 15.5 | 113.3 | 0.54 | 0.77 | 0.54 | 50.1 |
| 3 | R2 | 518 | 33 | 545 | 6.4 | * 0.708 | 55.6 | LOS D | 15.2 | 112.1 | 0.98 | 0.85 | 1.01 | 26.0 |
| Approach | | 1030 | 59 | 1084 | 5.7 | 0.708 | 38.2 | LOS C | 15.5 | 113.3 | 0.76 | 0.81 | 0.78 | 35.7 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 370 | 33 | 389 | 8.9 | 0.432 | 26.6 | LOS B | 14.0 | 105.5 | 0.67 | 0.79 | 0.67 | 38.6 |
| 5 | T1 | 994 | 20 | 1046 | 2.0 | * 0.725 | 46.0 | LOS D | 19.0 | 135.6 | 0.98 | 0.85 | 1.00 | 35.9 |
| Approach | | 1364 | 53 | 1436 | 3.9 | 0.725 | 40.7 | LOS C | 19.0 | 135.6 | 0.89 | 0.83 | 0.91 | 36.5 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 11 | T1 | 845 | 26 | 889 | 3.1 | 0.227 | 7.5 | LOS A | 6.3 | 45.6 | 0.40 | 0.35 | 0.40 | 66.5 |
| 12 | R2 | 462 | 26 | 486 | 5.6 | * 0.711 | 40.9 | LOS C | 24.1 | 176.6 | 0.91 | 0.86 | 0.91 | 36.5 |
| Approach | | 1307 | 52 | 1376 | 4.0 | 0.711 | 19.3 | LOS B | 24.1 | 176.6 | 0.58 | 0.53 | 0.58 | 51.4 |
| All Vehicles | | 3701 | 164 | 3896 | 4.4 | 0.725 | 32.4 | LOS C | 24.1 | 176.6 | 0.75 | 0.72 | 0.76 | 40.7 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 219.8 | 215.3 | 0.98 |
| P1B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| East: Great Western Highway | | | | | | | | | | | | |
| P2B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 230.0 | 228.6 | 0.99 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.1 | 213.1 | 0.98 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.

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

## Site: 3 [O'Connell Street/Corr Road (Site Folder: Existing AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] veh/h | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 2 | T1 | 398 | 5 | 419 | 1.3 | 0.252 | 0.3 | LOS A | 0.4 | 3.2 | 0.12 | 0.06 | 0.12 | 58.8 |
| 3 | R2 | 41 | 1 | 43 | 2.4 | 0.252 | 7.3 | LOS A | 0.4 | 3.2 | 0.12 | 0.06 | 0.12 | 53.1 |
| Approach | | 439 | 6 | 462 | 1.4 | 0.252 | 0.9 | NA | 0.4 | 3.2 | 0.12 | 0.06 | 0.12 | 58.5 |
| East: Corr Road | | | | | | | | | | | | | | |
| 4 | L2 | 26 | 0 | 27 | 0.0 | 0.022 | 6.5 | LOS A | 0.1 | 0.6 | 0.35 | 0.57 | 0.35 | 45.1 |
| 6 | R2 | 57 | 3 | 60 | 5.3 | 0.111 | 10.3 | LOS A | 0.4 | 2.6 | 0.60 | 0.84 | 0.60 | 48.5 |
| Approach | | 83 | 3 | 87 | 3.6 | 0.111 | 9.1 | LOS A | 0.4 | 2.6 | 0.52 | 0.76 | 0.52 | 47.8 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 68 | 4 | 72 | 5.9 | 0.191 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.12 | 0.00 | 56.2 |
| 8 | T1 | 276 | 4 | 291 | 1.4 | 0.191 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.12 | 0.00 | 58.7 |
| Approach | | 344 | 8 | 362 | 2.3 | 0.191 | 1.2 | NA | 0.0 | 0.0 | 0.00 | 0.12 | 0.00 | 58.2 |
| All Vehicles | | 866 | 17 | 912 | 2.0 | 0.252 | 1.8 | NA | 0.4 | 3.2 | 0.11 | 0.15 | 0.11 | 57.3 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 4 [O'Connell Street/O'Connell Lane (Site Folder: Existing AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/90min | HV ] veh/90min | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 77 | 0 | 54 | 0.0 | 0.323 | 5.2 | LOS A | 2.4 | 16.7 | 0.41 | 0.57 | 0.41 | 49.0 |
| 2 | T1 | 288 | 2 | 202 | 0.7 | 0.323 | 5.7 | LOS A | 2.4 | 16.7 | 0.41 | 0.57 | 0.41 | 50.0 |
| 3 | R2 | 199 | 0 | 140 | 0.0 | 0.323 | 9.1 | LOS A | 2.4 | 16.7 | 0.41 | 0.57 | 0.41 | 53.9 |
| Approach | | 564 | 2 | 396 | 0.4 | 0.323 | 6.8 | LOS A | 2.4 | 16.7 | 0.41 | 0.57 | 0.41 | 51.8 |
| East: O'Connell Street | | | | | | | | | | | | | | |
| 4 | L2 | 115 | 2 | 81 | 1.7 | 0.177 | 5.4 | LOS A | 1.1 | 8.0 | 0.39 | 0.59 | 0.39 | 53.1 |
| 5 | T1 | 24 | 1 | 17 | 4.2 | 0.177 | 5.7 | LOS A | 1.1 | 8.0 | 0.39 | 0.59 | 0.39 | 52.5 |
| 6 | R2 | 144 | 3 | 101 | 2.1 | 0.177 | 9.1 | LOS A | 1.1 | 8.0 | 0.39 | 0.59 | 0.39 | 52.2 |
| 6u | U | 1 | 0 | 1 | 0.0 | 0.177 | 10.8 | LOS A | 1.1 | 8.0 | 0.39 | 0.59 | 0.39 | 55.4 |
| Approach | | 284 | 6 | 199 | 2.1 | 0.177 | 7.4 | LOS A | 1.1 | 8.0 | 0.39 | 0.59 | 0.39 | 52.7 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 112 | 2 | 79 | 1.8 | 0.190 | 5.8 | LOS A | 1.2 | 8.6 | 0.42 | 0.54 | 0.42 | 52.4 |
| 8 | T1 | 181 | 1 | 127 | 0.6 | 0.190 | 5.9 | LOS A | 1.2 | 8.6 | 0.42 | 0.54 | 0.42 | 50.7 |
| 9 | R2 | 10 | 2 | 7 | 20.0 | 0.190 | 9.7 | LOS A | 1.2 | 8.6 | 0.42 | 0.54 | 0.42 | 43.0 |
| Approach | | 303 | 5 | 213 | 1.7 | 0.190 | 5.9 | LOS A | 1.2 | 8.6 | 0.42 | 0.54 | 0.42 | 51.3 |
| West: WSU Access | | | | | | | | | | | | | | |
| 10 | L2 | 7 | 1 | 5 | 14.3 | 0.031 | 7.7 | LOS A | 0.2 | 1.3 | 0.59 | 0.63 | 0.59 | 40.9 |
| 11 | T1 | 18 | 2 | 13 | 11.1 | 0.031 | 7.9 | LOS A | 0.2 | 1.3 | 0.59 | 0.63 | 0.59 | 51.7 |
| 12 | R2 | 10 | 0 | 7 | 0.0 | 0.031 | 10.8 | LOS A | 0.2 | 1.3 | 0.59 | 0.63 | 0.59 | 48.4 |
| Approach | | 35 | 3 | 25 | 8.6 | 0.031 | 8.7 | LOS A | 0.2 | 1.3 | 0.59 | 0.63 | 0.59 | 49.5 |
| All Vehicles | | 1186 | 16 | 832 | 1.3 | 0.323 | 6.8 | LOS A | 2.4 | 16.7 | 0.42 | 0.57 | 0.42 | 51.9 |

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

# MOVEMENT SUMMARY

## Site: 5 [Cadda Ridge Drive/O'Connell Lane (Site Folder: Existing AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 3 | 4.0 | 3 | 4.0 | 0.046 | 6.7 | LOS A | 0.3 | 1.9 | 0.65 | 0.61 | 0.65 | 45.3 |
| 2 | T1 | 28 | 4.0 | 29 | 4.0 | 0.046 | 6.9 | LOS A | 0.3 | 1.9 | 0.65 | 0.61 | 0.65 | 45.9 |
| 3 | R2 | 3 | 4.0 | 3 | 4.0 | 0.046 | 10.6 | LOS A | 0.3 | 1.9 | 0.65 | 0.61 | 0.65 | 45.9 |
| Approach | | 34 | 4.0 | 36 | 4.0 | 0.046 | 7.2 | LOS A | 0.3 | 1.9 | 0.65 | 0.61 | 0.65 | 45.8 |
| East: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 4 | L2 | 3 | 4.0 | 3 | 4.0 | 0.351 | 4.4 | LOS A | 2.8 | 19.9 | 0.45 | 0.58 | 0.45 | 44.9 |
| 5 | T1 | 107 | 4.0 | 113 | 4.0 | 0.351 | 4.4 | LOS A | 2.8 | 19.9 | 0.45 | 0.58 | 0.45 | 45.8 |
| 6 | R2 | 288 | 4.0 | 303 | 4.0 | 0.351 | 8.1 | LOS A | 2.8 | 19.9 | 0.45 | 0.58 | 0.45 | 45.4 |
| Approach | | 398 | 4.0 | 419 | 4.0 | 0.351 | 7.1 | LOS A | 2.8 | 19.9 | 0.45 | 0.58 | 0.45 | 45.5 |
| North: O'Connell Lane | | | | | | | | | | | | | | |
| 7 | L2 | 187 | 4.0 | 197 | 4.0 | 0.316 | 5.4 | LOS A | 2.3 | 17.0 | 0.58 | 0.63 | 0.58 | 45.1 |
| 8 | T1 | 9 | 4.0 | 9 | 4.0 | 0.316 | 5.4 | LOS A | 2.3 | 17.0 | 0.58 | 0.63 | 0.58 | 46.0 |
| 9 | R2 | 110 | 4.0 | 116 | 4.0 | 0.316 | 8.9 | LOS A | 2.3 | 17.0 | 0.58 | 0.63 | 0.58 | 45.9 |
| Approach | | 306 | 4.0 | 322 | 4.0 | 0.316 | 6.6 | LOS A | 2.3 | 17.0 | 0.58 | 0.63 | 0.58 | 45.4 |
| West: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 10 | L2 | 248 | 4.0 | 261 | 4.0 | 0.527 | 7.0 | LOS A | 4.5 | 32.3 | 0.75 | 0.74 | 0.78 | 44.9 |
| 11 | T1 | 212 | 4.0 | 223 | 4.0 | 0.527 | 7.2 | LOS A | 4.5 | 32.3 | 0.75 | 0.74 | 0.78 | 46.0 |
| 12 | R2 | 3 | 4.0 | 3 | 4.0 | 0.527 | 10.7 | LOS A | 4.5 | 32.3 | 0.75 | 0.74 | 0.78 | 45.8 |
| Approach | | 463 | 4.0 | 487 | 4.0 | 0.527 | 7.1 | LOS A | 4.5 | 32.3 | 0.75 | 0.74 | 0.78 | 45.4 |
| All Vehicles | | 1201 | 4.0 | 1264 | 4.0 | 0.527 | 7.0 | LOS A | 4.5 | 32.3 | 0.61 | 0.65 | 0.62 | 45.4 |

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

# MOVEMENT SUMMARY

## Site: 6 [O'Connell St & Starline Dr (Site Folder: Existing AM)]

80 O'Connell St, Caddens NSW
Site Category: Proposed Residential Development
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Starline Drive | | | | | | | | | | | | | | |
| 1 | L2 | 35 | 4.0 | 37 | 4.0 | 0.126 | 5.7 | LOS A | 0.4 | 3.2 | 0.44 | 0.69 | 0.44 | 43.4 |
| 3 | R2 | 63 | 4.0 | 66 | 4.0 | 0.126 | 7.7 | LOS A | 0.4 | 3.2 | 0.44 | 0.69 | 0.44 | 44.9 |
| Approach | | 98 | 4.0 | 103 | 4.0 | 0.126 | 7.0 | LOS A | 0.4 | 3.2 | 0.44 | 0.69 | 0.44 | 44.4 |
| East: O'Connell St | | | | | | | | | | | | | | |
| 4 | L2 | 27 | 4.0 | 28 | 4.0 | 0.169 | 4.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 49.1 |
| 5 | T1 | 277 | 4.0 | 292 | 4.0 | 0.169 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 49.7 |
| Approach | | 304 | 4.0 | 320 | 4.0 | 0.169 | 0.5 | NA | 0.0 | 0.0 | 0.00 | 0.05 | 0.00 | 49.6 |
| West: O'Connell St | | | | | | | | | | | | | | |
| 11 | T1 | 263 | 4.0 | 277 | 4.0 | 0.157 | 0.1 | LOS A | 0.1 | 1.0 | 0.06 | 0.03 | 0.06 | 49.7 |
| 12 | R2 | 14 | 4.0 | 15 | 4.0 | 0.157 | 6.0 | LOS A | 0.1 | 1.0 | 0.06 | 0.03 | 0.06 | 48.1 |
| Approach | | 277 | 4.0 | 292 | 4.0 | 0.157 | 0.4 | NA | 0.1 | 1.0 | 0.06 | 0.03 | 0.06 | 49.6 |
| All Vehicles | | 679 | 4.0 | 715 | 4.0 | 0.169 | 1.4 | NA | 0.4 | 3.2 | 0.09 | 0.13 | 0.09 | 48.9 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 7 [Gipps Street/Sunflower Drive (Site Folder: Existing AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 116 | 4.0 | 122 | 4.0 | * 0.495 | 22.4 | LOS B | 14.9 | 108.2 | 0.67 | 0.65 | 0.67 | 41.9 |
| 2 | T1 | 843 | 4.0 | 887 | 4.0 | 0.495 | 15.1 | LOS B | 15.4 | 111.7 | 0.67 | 0.62 | 0.67 | 57.5 |
| 3 | R2 | 1 | 4.0 | 1 | 4.0 | 0.010 | 56.1 | LOS D | 0.0 | 0.4 | 0.96 | 0.59 | 0.96 | 29.1 |
| Approach | | 960 | 4.0 | 1011 | 4.0 | 0.495 | 16.0 | LOS B | 15.4 | 111.7 | 0.67 | 0.62 | 0.67 | 55.8 |
| East: Fowler Street | | | | | | | | | | | | | | |
| 4 | L2 | 5 | 4.0 | 5 | 4.0 | 0.029 | 39.2 | LOS C | 0.4 | 3.0 | 0.83 | 0.62 | 0.83 | 33.9 |
| 5 | T1 | 5 | 4.0 | 5 | 4.0 | 0.029 | 34.6 | LOS C | 0.4 | 3.0 | 0.83 | 0.62 | 0.83 | 28.3 |
| 6 | R2 | 12 | 4.0 | 13 | 4.0 | 0.059 | 46.6 | LOS D | 0.6 | 4.0 | 0.90 | 0.68 | 0.90 | 33.1 |
| Approach | | 22 | 4.0 | 23 | 4.0 | 0.059 | 42.2 | LOS C | 0.6 | 4.0 | 0.87 | 0.65 | 0.87 | 32.3 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 9 | 0.0 | 9 | 0.0 | 0.388 | 20.6 | LOS B | 11.4 | 79.9 | 0.61 | 0.54 | 0.61 | 49.5 |
| 8 | T1 | 780 | 0.0 | 821 | 0.0 | 0.388 | 13.7 | LOS A | 11.5 | 80.3 | 0.61 | 0.54 | 0.61 | 59.6 |
| 9 | R2 | 47 | 0.0 | 49 | 0.0 | * 0.444 | 59.5 | LOS E | 2.5 | 17.6 | 1.00 | 0.74 | 1.00 | 25.4 |
| Approach | | 836 | 0.0 | 880 | 0.0 | 0.444 | 16.3 | LOS B | 11.5 | 80.3 | 0.64 | 0.55 | 0.64 | 56.2 |
| West: Sunflower Drive | | | | | | | | | | | | | | |
| 10 | L2 | 75 | 4.0 | 79 | 4.0 | 0.204 | 36.8 | LOS C | 3.5 | 25.2 | 0.83 | 0.74 | 0.83 | 31.9 |
| 11 | T1 | 10 | 4.0 | 11 | 4.0 | 0.204 | 32.2 | LOS C | 3.5 | 25.2 | 0.83 | 0.74 | 0.83 | 28.5 |
| 12 | R2 | 124 | 4.0 | 131 | 4.0 | * 0.513 | 47.5 | LOS D | 6.0 | 43.8 | 0.96 | 0.79 | 0.96 | 24.4 |
| Approach | | 209 | 4.0 | 220 | 4.0 | 0.513 | 42.9 | LOS D | 6.0 | 43.8 | 0.91 | 0.77 | 0.91 | 27.2 |
| All Vehicles | | 2027 | 2.4 | 2134 | 2.4 | 0.513 | 19.2 | LOS B | 15.4 | 111.7 | 0.68 | 0.61 | 0.68 | 51.6 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 213.8 | 220.5 | 1.03 |
| East: Fowler Street | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 207.2 | 211.9 | 1.02 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 5 | 5 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 213.8 | 220.5 | 1.03 |
| West: Sunflower Drive | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 207.2 | 211.9 | 1.02 |
| All Pedestrians | | 20 | 21 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 210.5 | 216.2 | 1.03 |

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: 8 [Gipps St & Caddens Rd & Kent Rd (Site Folder: Existing AM)]

68-80 O'Connell Street, Kingswood
Site Category: Mixed-Use Development
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] veh/h | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | | | |
| 1 | L2 | 176 | 5 | 185 | 2.8 | 0.737 | 41.1 | LOS C | 26.5 | 191.2 | 0.92 | 0.84 | 0.92 | 38.9 |
| 2 | T1 | 830 | 34 | 874 | 4.1 | * 0.737 | 34.0 | LOS C | 26.5 | 191.2 | 0.92 | 0.83 | 0.92 | 39.4 |
| 3 | R2 | 14 | 3 | 15 | 21.4 | 0.055 | 28.4 | LOS B | 0.5 | 4.0 | 0.74 | 0.69 | 0.74 | 40.9 |
| Approach | | 1020 | 42 | 1074 | 4.1 | 0.737 | 35.1 | LOS C | 26.5 | 191.7 | 0.92 | 0.83 | 0.92 | 39.3 |
| East: Caddens Road | | | | | | | | | | | | | | |
| 4 | L2 | 66 | 3 | 69 | 4.5 | 0.139 | 25.1 | LOS B | 3.8 | 27.7 | 0.62 | 0.63 | 0.62 | 41.4 |
| 5 | T1 | 40 | 3 | 42 | 7.5 | 0.139 | 20.5 | LOS B | 3.8 | 27.7 | 0.62 | 0.63 | 0.62 | 42.5 |
| 6 | R2 | 64 | 3 | 67 | 4.7 | 0.159 | 32.9 | LOS C | 2.7 | 19.6 | 0.72 | 0.72 | 0.72 | 38.6 |
| Approach | | 170 | 9 | 179 | 5.3 | 0.159 | 26.9 | LOS B | 3.8 | 27.7 | 0.66 | 0.66 | 0.66 | 40.7 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 23 | 5 | 24 | 21.7 | 0.489 | 37.4 | LOS C | 15.5 | 113.6 | 0.81 | 0.71 | 0.81 | 40.6 |
| 8 | T1 | 648 | 28 | 682 | 4.3 | 0.489 | 30.0 | LOS C | 15.7 | 113.8 | 0.81 | 0.71 | 0.81 | 42.3 |
| 9 | R2 | 51 | 5 | 54 | 9.8 | * 0.274 | 32.8 | LOS C | 1.8 | 13.8 | 0.88 | 0.75 | 0.88 | 40.8 |
| Approach | | 722 | 38 | 760 | 5.3 | 0.489 | 30.4 | LOS C | 15.7 | 113.8 | 0.82 | 0.71 | 0.82 | 42.0 |
| West: Caddens Road | | | | | | | | | | | | | | |
| 10 | L2 | 164 | 6 | 173 | 3.7 | 0.311 | 23.7 | LOS B | 6.8 | 49.0 | 0.62 | 0.69 | 0.62 | 42.9 |
| 11 | T1 | 28 | 1 | 29 | 3.6 | 0.311 | 19.1 | LOS B | 6.8 | 49.0 | 0.62 | 0.69 | 0.62 | 42.6 |
| 12 | R2 | 276 | 3 | 291 | 1.1 | * 0.747 | 39.4 | LOS C | 14.3 | 101.3 | 0.85 | 0.85 | 0.91 | 37.2 |
| Approach | | 468 | 10 | 493 | 2.1 | 0.747 | 32.7 | LOS C | 14.3 | 101.3 | 0.75 | 0.78 | 0.79 | 39.4 |
| All Vehicles | | 2380 | 99 | 2505 | 4.2 | 0.747 | 32.6 | LOS C | 26.5 | 191.7 | 0.84 | 0.77 | 0.84 | 40.1 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | |
| P1 | Full | 50 | 53 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 224.2 | 220.9 | 0.99 |
| East: Caddens Road | | | | | | | | | | | | |
| P2 | Full | 50 | 53 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 217.3 | 211.9 | 0.98 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 50 | 53 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 224.0 | 220.6 | 0.98 |
| West: Caddens Road | | | | | | | | | | | | |
| P4 | Full | 50 | 53 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 217.3 | 211.9 | 0.98 |
| All Pedestrians | | 200 | 211 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 220.7 | 216.3 | 0.98 |

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

# MOVEMENT SUMMARY

## Site: 1 [Great Western Highway/O'Connell Street (Site Folder: 2031 STFM + W/O Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 1 | L2 | 108 | 2.2 | 114 | 2.2 | 0.202 | 33.5 | LOS C | 5.4 | 38.4 | 0.71 | 0.71 | 0.71 | 38.1 |
| 2 | T1 | 24 | 4.2 | 25 | 4.2 | 0.852 | 28.2 | LOS B | 16.5 | 120.5 | 0.73 | 0.72 | 0.74 | 33.0 |
| 3 | R2 | 247 | 4.9 | 260 | 4.9 | * 0.852 | 60.2 | LOS E | 16.5 | 120.5 | 0.98 | 0.98 | 1.23 | 30.4 |
| Approach | | 379 | 4.1 | 399 | 4.1 | 0.852 | 50.6 | LOS D | 16.5 | 120.5 | 0.89 | 0.89 | 1.05 | 32.4 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 273 | 3.6 | 287 | 3.6 | 0.346 | 28.2 | LOS B | 10.7 | 77.2 | 0.69 | 0.77 | 0.69 | 39.6 |
| 5 | T1 | 1400 | 2.5 | 1474 | 2.5 | * 0.847 | 34.9 | LOS C | 41.1 | 293.8 | 0.95 | 0.91 | 1.01 | 38.2 |
| 6 | R2 | 20 | 5.0 | 21 | 5.0 | 0.081 | 23.0 | LOS B | 0.5 | 3.9 | 0.74 | 0.69 | 0.74 | 37.0 |
| Approach | | 1693 | 2.7 | 1782 | 2.7 | 0.847 | 33.7 | LOS C | 41.1 | 293.8 | 0.91 | 0.89 | 0.96 | 38.4 |
| North: French Street | | | | | | | | | | | | | | |
| 7 | L2 | 47 | 0.0 | 49 | 0.0 | 0.075 | 30.1 | LOS C | 1.9 | 13.6 | 0.65 | 0.69 | 0.65 | 34.4 |
| 8 | T1 | 50 | 0.0 | 53 | 0.0 | 0.262 | 36.8 | LOS C | 4.9 | 34.9 | 0.81 | 0.73 | 0.81 | 31.3 |
| 9 | R2 | 57 | 1.8 | 60 | 1.8 | 0.262 | 42.4 | LOS C | 4.9 | 34.9 | 0.82 | 0.74 | 0.82 | 29.9 |
| Approach | | 154 | 0.6 | 162 | 0.6 | 0.262 | 36.8 | LOS C | 4.9 | 34.9 | 0.76 | 0.72 | 0.76 | 31.6 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 10 | L2 | 17 | 29.4 | 18 | 29.4 | 0.744 | 31.1 | LOS C | 14.3 | 104.2 | 0.71 | 0.65 | 0.75 | 35.2 |
| 11 | T1 | 1276 | 3.7 | 1343 | 3.7 | 0.782 | 27.5 | LOS B | 27.9 | 201.1 | 0.78 | 0.72 | 0.82 | 41.4 |
| 12 | R2 | 115 | 6.9 | 121 | 6.9 | * 0.544 | 31.6 | LOS C | 3.9 | 28.6 | 0.97 | 0.80 | 0.97 | 38.4 |
| Approach | | 1408 | 4.2 | 1482 | 4.2 | 0.782 | 27.9 | LOS B | 27.9 | 201.1 | 0.80 | 0.72 | 0.83 | 41.1 |
| All Vehicles | | 3634 | 3.4 | 3825 | 3.4 | 0.852 | 33.3 | LOS C | 41.1 | 293.8 | 0.86 | 0.82 | 0.91 | 38.3 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: Great Western Highway | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All Pedestrians | 10 | 11 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

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

# MOVEMENT SUMMARY

## Site: 2 [Great Western Highway/Gipps Street (Site Folder: 2031 STFM + W/O Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 761 | 5.1 | 801 | 5.1 | 0.852 | 30.2 | LOS C | 31.1 | 227.5 | 0.64 | 0.83 | 0.70 | 45.0 |
| 3 | R2 | 770 | 6.4 | 811 | 6.4 | * 0.913 | 71.4 | LOS F | 28.0 | 206.6 | 1.00 | 0.98 | 1.30 | 22.1 |
| Approach | | 1531 | 5.7 | 1612 | 5.7 | 0.913 | 50.9 | LOS D | 31.1 | 227.5 | 0.82 | 0.90 | 1.00 | 31.0 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 415 | 8.9 | 437 | 8.9 | 0.477 | 26.6 | LOS B | 16.0 | 120.6 | 0.68 | 0.80 | 0.68 | 38.6 |
| 5 | T1 | 1114 | 2.0 | 1173 | 2.0 | * 0.925 | 69.1 | LOS E | 28.1 | 200.2 | 1.00 | 1.06 | 1.34 | 28.3 |
| Approach | | 1529 | 3.9 | 1609 | 3.9 | 0.925 | 57.6 | LOS E | 28.1 | 200.2 | 0.91 | 0.99 | 1.16 | 30.1 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 11 | T1 | 1051 | 3.1 | 1106 | 3.1 | 0.297 | 9.6 | LOS A | 9.2 | 65.8 | 0.47 | 0.41 | 0.47 | 63.5 |
| 12 | R2 | 575 | 5.6 | 605 | 5.6 | * 0.949 | 73.8 | LOS F | 44.8 | 328.8 | 1.00 | 1.02 | 1.34 | 26.1 |
| Approach | | 1626 | 4.0 | 1712 | 4.0 | 0.949 | 32.3 | LOS C | 44.8 | 328.8 | 0.65 | 0.62 | 0.78 | 42.0 |
| All Vehicles | | 4686 | 4.5 | 4933 | 4.5 | 0.949 | 46.6 | LOS D | 44.8 | 328.8 | 0.79 | 0.83 | 0.98 | 33.9 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 219.8 | 215.3 | 0.98 |
| P1B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| East: Great Western Highway | | | | | | | | | | | | |
| P2B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 230.0 | 228.6 | 0.99 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.1 | 213.1 | 0.98 |

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: 3 [O'Connell Street/Corr Road (Site Folder: 2031 STFM + W/O Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 2 | T1 | 491 | 1.3 | 517 | 1.3 | 0.316 | 0.4 | LOS A | 0.7 | 4.9 | 0.15 | 0.06 | 0.15 | 58.7 |
| 3 | R2 | 51 | 2.4 | 54 | 2.4 | 0.316 | 8.1 | LOS A | 0.7 | 4.9 | 0.15 | 0.06 | 0.15 | 52.8 |
| Approach | | 542 | 1.4 | 571 | 1.4 | 0.316 | 1.1 | NA | 0.7 | 4.9 | 0.15 | 0.06 | 0.15 | 58.4 |
| East: Corr Road | | | | | | | | | | | | | | |
| 4 | L2 | 41 | 0.0 | 43 | 0.0 | 0.037 | 6.7 | LOS A | 0.1 | 1.0 | 0.39 | 0.61 | 0.39 | 44.8 |
| 6 | R2 | 67 | 5.3 | 71 | 5.3 | 0.169 | 12.6 | LOS A | 0.5 | 3.9 | 0.71 | 0.88 | 0.71 | 46.8 |
| Approach | | 108 | 3.3 | 114 | 3.3 | 0.169 | 10.4 | LOS A | 0.5 | 3.9 | 0.59 | 0.78 | 0.59 | 46.4 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 83 | 5.9 | 87 | 5.9 | 0.233 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.12 | 0.00 | 56.2 |
| 8 | T1 | 337 | 1.4 | 355 | 1.4 | 0.233 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.12 | 0.00 | 58.7 |
| Approach | | 420 | 2.3 | 442 | 2.3 | 0.233 | 1.2 | NA | 0.0 | 0.0 | 0.00 | 0.12 | 0.00 | 58.2 |
| All Vehicles | | 1070 | 1.9 | 1126 | 1.9 | 0.316 | 2.1 | NA | 0.7 | 4.9 | 0.13 | 0.16 | 0.14 | 57.0 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 4 [O'Connell Street/O'Connell Lane (Site Folder: 2031 STFM + W/O Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/90min ] | HV ] % | DEMAND FLOWS [ Total veh/h ] | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh ] | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 77 | 0.0 | 54 | 0.0 | 0.367 | 5.6 | LOS A | 2.8 | 19.6 | 0.49 | 0.59 | 0.49 | 48.7 |
| 2 | T1 | 332 | 0.7 | 233 | 0.7 | 0.367 | 6.0 | LOS A | 2.8 | 19.6 | 0.49 | 0.59 | 0.49 | 49.7 |
| 3 | R2 | 199 | 0.0 | 140 | 0.0 | 0.367 | 9.4 | LOS A | 2.8 | 19.6 | 0.49 | 0.59 | 0.49 | 53.7 |
| Approach | | 608 | 0.4 | 427 | 0.4 | 0.367 | 7.1 | LOS A | 2.8 | 19.6 | 0.49 | 0.59 | 0.49 | 51.4 |
| East: O'Connell Street | | | | | | | | | | | | | | |
| 4 | L2 | 115 | 1.7 | 81 | 1.7 | 0.214 | 5.7 | LOS A | 1.4 | 9.9 | 0.44 | 0.62 | 0.44 | 52.9 |
| 5 | T1 | 24 | 4.2 | 17 | 4.2 | 0.214 | 6.0 | LOS A | 1.4 | 9.9 | 0.44 | 0.62 | 0.44 | 52.2 |
| 6 | R2 | 192 | 2.1 | 135 | 2.1 | 0.214 | 9.4 | LOS A | 1.4 | 9.9 | 0.44 | 0.62 | 0.44 | 51.9 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.214 | 11.0 | LOS A | 1.4 | 9.9 | 0.44 | 0.62 | 0.44 | 55.2 |
| Approach | | 332 | 2.1 | 233 | 2.1 | 0.214 | 7.9 | LOS A | 1.4 | 9.9 | 0.44 | 0.62 | 0.44 | 52.3 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 150 | 1.8 | 105 | 1.8 | 0.236 | 5.8 | LOS A | 1.6 | 11.3 | 0.44 | 0.55 | 0.44 | 52.4 |
| 8 | T1 | 211 | 0.6 | 148 | 0.6 | 0.236 | 5.9 | LOS A | 1.6 | 11.3 | 0.44 | 0.55 | 0.44 | 50.6 |
| 9 | R2 | 18 | 20.0 | 13 | 20.0 | 0.236 | 9.7 | LOS A | 1.6 | 11.3 | 0.44 | 0.55 | 0.44 | 42.8 |
| Approach | | 379 | 2.0 | 266 | 2.0 | 0.236 | 6.0 | LOS A | 1.6 | 11.3 | 0.44 | 0.55 | 0.44 | 51.2 |
| West: WSU Access | | | | | | | | | | | | | | |
| 10 | L2 | 18 | 14.3 | 13 | 14.3 | 0.044 | 8.3 | LOS A | 0.2 | 1.9 | 0.64 | 0.66 | 0.64 | 40.5 |
| 11 | T1 | 18 | 11.1 | 13 | 11.1 | 0.044 | 8.5 | LOS A | 0.2 | 1.9 | 0.64 | 0.66 | 0.64 | 51.5 |
| 12 | R2 | 10 | 0.0 | 7 | 0.0 | 0.044 | 11.4 | LOS A | 0.2 | 1.9 | 0.64 | 0.66 | 0.64 | 48.1 |
| Approach | | 46 | 9.9 | 32 | 9.9 | 0.044 | 9.0 | LOS A | 0.2 | 1.9 | 0.64 | 0.66 | 0.64 | 47.7 |
| All Vehicles | | 1365 | 1.6 | 958 | 1.6 | 0.367 | 7.1 | LOS A | 2.8 | 19.6 | 0.47 | 0.59 | 0.47 | 51.5 |

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

# MOVEMENT SUMMARY

## Site: 5 [Cadda Ridge Drive/O'Connell Lane (Site Folder: 2031 STFM + W/O Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 3 | 4.0 | 3 | 4.0 | 0.051 | 7.1 | LOS A | 0.3 | 2.2 | 0.67 | 0.63 | 0.67 | 45.1 |
| 2 | T1 | 30 | 4.0 | 32 | 4.0 | 0.051 | 7.2 | LOS A | 0.3 | 2.2 | 0.67 | 0.63 | 0.67 | 45.7 |
| 3 | R2 | 3 | 4.0 | 3 | 4.0 | 0.051 | 10.9 | LOS A | 0.3 | 2.2 | 0.67 | 0.63 | 0.67 | 45.8 |
| Approach | | 36 | 4.0 | 38 | 4.0 | 0.051 | 7.5 | LOS A | 0.3 | 2.2 | 0.67 | 0.63 | 0.67 | 45.7 |
| East: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 4 | L2 | 3 | 4.0 | 3 | 4.0 | 0.377 | 4.5 | LOS A | 3.0 | 21.9 | 0.48 | 0.59 | 0.48 | 44.8 |
| 5 | T1 | 107 | 4.0 | 113 | 4.0 | 0.377 | 4.6 | LOS A | 3.0 | 21.9 | 0.48 | 0.59 | 0.48 | 45.7 |
| 6 | R2 | 310 | 4.0 | 326 | 4.0 | 0.377 | 8.3 | LOS A | 3.0 | 21.9 | 0.48 | 0.59 | 0.48 | 45.3 |
| Approach | | 420 | 4.0 | 442 | 4.0 | 0.377 | 7.3 | LOS A | 3.0 | 21.9 | 0.48 | 0.59 | 0.48 | 45.4 |
| North: O'Connell Lane | | | | | | | | | | | | | | |
| 7 | L2 | 205 | 4.0 | 216 | 4.0 | 0.346 | 5.4 | LOS A | 2.7 | 19.2 | 0.60 | 0.63 | 0.60 | 45.0 |
| 8 | T1 | 10 | 4.0 | 11 | 4.0 | 0.346 | 5.4 | LOS A | 2.7 | 19.2 | 0.60 | 0.63 | 0.60 | 45.9 |
| 9 | R2 | 121 | 4.0 | 127 | 4.0 | 0.346 | 9.0 | LOS A | 2.7 | 19.2 | 0.60 | 0.63 | 0.60 | 45.8 |
| Approach | | 336 | 4.0 | 354 | 4.0 | 0.346 | 6.7 | LOS A | 2.7 | 19.2 | 0.60 | 0.63 | 0.60 | 45.3 |
| West: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 10 | L2 | 267 | 4.0 | 281 | 4.0 | 0.565 | 8.0 | LOS A | 5.3 | 38.1 | 0.80 | 0.80 | 0.87 | 44.4 |
| 11 | T1 | 212 | 4.0 | 223 | 4.0 | 0.565 | 8.2 | LOS A | 5.3 | 38.1 | 0.80 | 0.80 | 0.87 | 45.5 |
| 12 | R2 | 3 | 4.0 | 3 | 4.0 | 0.565 | 11.7 | LOS A | 5.3 | 38.1 | 0.80 | 0.80 | 0.87 | 45.4 |
| Approach | | 482 | 4.0 | 507 | 4.0 | 0.565 | 8.1 | LOS A | 5.3 | 38.1 | 0.80 | 0.80 | 0.87 | 44.9 |
| All Vehicles | | 1274 | 4.0 | 1341 | 4.0 | 0.565 | 7.4 | LOS A | 5.3 | 38.1 | 0.64 | 0.68 | 0.67 | 45.2 |

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

# MOVEMENT SUMMARY

## Site: 6 [O'Connell St & Starline Dr (Site Folder: 2031 STFM + W/O Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Proposed Residential Development
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Starline Drive | | | | | | | | | | | | | | |
| 1 | L2 | 35 | 2.0 | 37 | 2.0 | 0.165 | 5.8 | LOS A | 0.6 | 4.1 | 0.52 | 0.73 | 0.52 | 42.4 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.165 | 8.3 | LOS A | 0.6 | 4.1 | 0.52 | 0.73 | 0.52 | 46.9 |
| 3 | R2 | 63 | 2.0 | 66 | 2.0 | 0.165 | 9.9 | LOS A | 0.6 | 4.1 | 0.52 | 0.73 | 0.52 | 44.1 |
| Approach | | 99 | 2.0 | 104 | 2.0 | 0.165 | 8.5 | LOS A | 0.6 | 4.1 | 0.52 | 0.73 | 0.52 | 43.7 |
| East: O'Connell St | | | | | | | | | | | | | | |
| 4 | L2 | 27 | 2.0 | 28 | 2.0 | 0.196 | 5.0 | LOS A | 0.1 | 0.9 | 0.04 | 0.06 | 0.04 | 49.2 |
| 5 | T1 | 315 | 2.0 | 332 | 2.0 | 0.196 | 0.1 | LOS A | 0.1 | 0.9 | 0.04 | 0.06 | 0.04 | 49.7 |
| 6 | R2 | 10 | 0.0 | 11 | 0.0 | 0.196 | 6.8 | LOS A | 0.1 | 0.9 | 0.04 | 0.06 | 0.04 | 51.9 |
| Approach | | 352 | 1.9 | 371 | 1.9 | 0.196 | 0.6 | NA | 0.1 | 0.9 | 0.04 | 0.06 | 0.04 | 49.8 |
| North: Site Access | | | | | | | | | | | | | | |
| 7 | L2 | 4 | 0.0 | 4 | 0.0 | 0.026 | 6.5 | LOS A | 0.1 | 0.6 | 0.49 | 0.70 | 0.49 | 52.2 |
| 8 | T1 | 1 | 0.0 | 1 | 0.0 | 0.026 | 7.9 | LOS A | 0.1 | 0.6 | 0.49 | 0.70 | 0.49 | 49.5 |
| 9 | R2 | 10 | 0.0 | 11 | 0.0 | 0.026 | 10.2 | LOS A | 0.1 | 0.6 | 0.49 | 0.70 | 0.49 | 49.4 |
| Approach | | 15 | 0.0 | 16 | 0.0 | 0.026 | 9.1 | LOS A | 0.1 | 0.6 | 0.49 | 0.70 | 0.49 | 50.3 |
| West: O'Connell St | | | | | | | | | | | | | | |
| 10 | L2 | 4 | 0.0 | 4 | 0.0 | 0.177 | 6.9 | LOS A | 0.2 | 1.1 | 0.06 | 0.03 | 0.06 | 53.2 |
| 11 | T1 | 297 | 2.0 | 313 | 2.0 | 0.177 | 0.1 | LOS A | 0.2 | 1.1 | 0.06 | 0.03 | 0.06 | 49.7 |
| 12 | R2 | 14 | 2.0 | 15 | 2.0 | 0.177 | 6.2 | LOS A | 0.2 | 1.1 | 0.06 | 0.03 | 0.06 | 48.1 |
| Approach | | 315 | 2.0 | 332 | 2.0 | 0.177 | 0.5 | NA | 0.2 | 1.1 | 0.06 | 0.03 | 0.06 | 49.7 |
| All Vehicles | | 781 | 1.9 | 822 | 1.9 | 0.196 | 1.7 | NA | 0.6 | 4.1 | 0.12 | 0.15 | 0.12 | 49.0 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 7 [Gipps Street/Sunflower Drive (Site Folder: 2031 STFM + W/O Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 170 | 4.0 | 179 | 4.0 | 0.697 | 24.5 | LOS B | 31.1 | 225.2 | 0.75 | 0.72 | 0.75 | 40.2 |
| 2 | T1 | 1330 | 4.0 | 1400 | 4.0 | 0.697 | 17.5 | LOS B | 31.4 | 227.5 | 0.75 | 0.70 | 0.75 | 55.1 |
| 3 | R2 | 1 | 4.0 | 1 | 4.0 | * 0.006 | 37.0 | LOS C | 0.0 | 0.3 | 0.92 | 0.59 | 0.92 | 35.2 |
| Approach | | 1501 | 4.0 | 1580 | 4.0 | 0.697 | 18.3 | LOS B | 31.4 | 227.5 | 0.75 | 0.70 | 0.75 | 53.7 |
| East: Fowler Street | | | | | | | | | | | | | | |
| 4 | L2 | 5 | 4.0 | 5 | 4.0 | 0.025 | 42.3 | LOS C | 0.5 | 3.4 | 0.80 | 0.61 | 0.80 | 32.8 |
| 5 | T1 | 5 | 4.0 | 5 | 4.0 | 0.025 | 37.7 | LOS C | 0.5 | 3.4 | 0.80 | 0.61 | 0.80 | 27.3 |
| 6 | R2 | 12 | 4.0 | 13 | 4.0 | 0.054 | 50.4 | LOS D | 0.6 | 4.6 | 0.87 | 0.68 | 0.87 | 32.0 |
| Approach | | 22 | 4.0 | 23 | 4.0 | 0.054 | 45.7 | LOS D | 0.6 | 4.6 | 0.84 | 0.65 | 0.84 | 31.3 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 9 | 0.0 | 9 | 0.0 | 0.692 | 31.3 | LOS C | 29.8 | 208.7 | 0.83 | 0.75 | 0.83 | 43.3 |
| 8 | T1 | 1248 | 0.0 | 1314 | 0.0 | * 0.692 | 24.1 | LOS B | 29.8 | 208.7 | 0.82 | 0.74 | 0.82 | 49.9 |
| 9 | R2 | 47 | 0.0 | 49 | 0.0 | * 0.533 | 71.5 | LOS F | 3.0 | 21.3 | 1.00 | 0.75 | 1.02 | 22.6 |
| Approach | | 1304 | 0.0 | 1373 | 0.0 | 0.692 | 25.9 | LOS B | 29.8 | 208.7 | 0.82 | 0.74 | 0.82 | 48.3 |
| West: Sunflower Drive | | | | | | | | | | | | | | |
| 10 | L2 | 75 | 4.0 | 79 | 4.0 | 0.186 | 41.1 | LOS C | 4.0 | 29.2 | 0.81 | 0.73 | 0.81 | 30.2 |
| 11 | T1 | 10 | 4.0 | 11 | 4.0 | 0.186 | 36.5 | LOS C | 4.0 | 29.2 | 0.81 | 0.73 | 0.81 | 27.1 |
| 12 | R2 | 173 | 4.0 | 182 | 4.0 | * 0.699 | 54.2 | LOS D | 10.2 | 73.6 | 0.96 | 0.85 | 1.03 | 22.5 |
| Approach | | 258 | 4.0 | 272 | 4.0 | 0.699 | 49.7 | LOS D | 10.2 | 73.6 | 0.91 | 0.81 | 0.96 | 24.8 |
| All Vehicles | | 3085 | 2.3 | 3247 | 2.3 | 0.699 | 24.3 | LOS B | 31.4 | 227.5 | 0.79 | 0.73 | 0.80 | 47.8 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |
| East: Fowler Street | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 217.2 | 211.9 | 0.98 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |
| West: Sunflower Drive | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 217.2 | 211.9 | 0.98 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 220.5 | 216.2 | 0.98 |

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: 8 [Gipps St & Caddens Rd & Kent Rd (Site Folder: 2031 STFM + W/O Development AM)]

68-80 O'Connell Street, Kingswood
Site Category: Mixed-Use Development
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 105 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | | | |
| 1 | L2 | 189 | 2.8 | 199 | 2.8 | 1.065 | 133.2 | LOS F | 73.7 | 532.5 | 1.00 | 1.52 | 1.92 | 22.2 |
| 2 | T1 | 1261 | 4.1 | 1327 | 4.1 | * 1.065 | 126.1 | LOS F | 73.9 | 535.6 | 1.00 | 1.52 | 1.92 | 16.6 |
| 3 | R2 | 14 | 21.4 | 15 | 21.4 | 0.064 | 23.9 | LOS B | 0.4 | 3.0 | 0.75 | 0.69 | 0.75 | 42.7 |
| Approach | | 1464 | 4.1 | 1541 | 4.1 | 1.065 | 126.1 | LOS F | 73.9 | 535.6 | 1.00 | 1.51 | 1.91 | 17.7 |
| East: Caddens Road | | | | | | | | | | | | | | |
| 4 | L2 | 66 | 4.5 | 69 | 4.5 | 0.169 | 28.3 | LOS B | 3.8 | 27.9 | 0.71 | 0.67 | 0.71 | 40.2 |
| 5 | T1 | 40 | 7.5 | 42 | 7.5 | 0.169 | 23.7 | LOS B | 3.8 | 27.9 | 0.71 | 0.67 | 0.71 | 41.7 |
| 6 | R2 | 64 | 4.7 | 67 | 4.7 | 0.266 | 42.4 | LOS C | 3.0 | 21.5 | 0.87 | 0.76 | 0.87 | 35.7 |
| Approach | | 170 | 5.3 | 179 | 5.3 | 0.266 | 32.5 | LOS C | 3.8 | 27.9 | 0.77 | 0.70 | 0.77 | 39.0 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 23 | 21.7 | 24 | 21.7 | 0.639 | 32.0 | LOS C | 21.0 | 153.3 | 0.84 | 0.75 | 0.84 | 42.7 |
| 8 | T1 | 982 | 4.3 | 1034 | 4.3 | 0.639 | 24.7 | LOS B | 21.1 | 153.5 | 0.84 | 0.75 | 0.84 | 46.2 |
| 9 | R2 | 233 | 9.8 | 245 | 9.8 | * 0.914 | 55.7 | LOS D | 11.3 | 85.9 | 1.00 | 0.99 | 1.45 | 34.3 |
| Approach | | 1238 | 5.7 | 1303 | 5.7 | 0.914 | 30.6 | LOS C | 21.1 | 153.5 | 0.87 | 0.79 | 0.95 | 41.8 |
| West: Caddens Road | | | | | | | | | | | | | | |
| 10 | L2 | 274 | 3.7 | 288 | 3.7 | 0.684 | 25.7 | LOS B | 11.0 | 79.1 | 0.72 | 0.75 | 0.72 | 42.1 |
| 11 | T1 | 28 | 3.6 | 29 | 3.6 | 0.684 | 21.1 | LOS B | 11.0 | 79.1 | 0.72 | 0.75 | 0.72 | 42.0 |
| 12 | R2 | 291 | 1.1 | 306 | 1.1 | * 1.104 | 172.7 | LOS F | 33.8 | 239.1 | 1.00 | 1.50 | 2.34 | 18.1 |
| Approach | | 593 | 2.4 | 624 | 2.4 | 1.104 | 97.6 | LOS F | 33.8 | 239.1 | 0.86 | 1.12 | 1.52 | 25.8 |
| All Vehicles | | 3465 | 4.4 | 3647 | 4.4 | 1.104 | 82.5 | LOS F | 73.9 | 535.6 | 0.92 | 1.15 | 1.45 | 25.4 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | |
| P1 | Full | 50 | 53 | 46.8 | LOS E | 0.1 | 0.1 | 0.94 | 0.94 | 216.7 | 220.9 | 1.02 |
| East: Caddens Road | | | | | | | | | | | | |
| P2 | Full | 50 | 53 | 46.8 | LOS E | 0.1 | 0.1 | 0.94 | 0.94 | 209.8 | 211.9 | 1.01 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 50 | 53 | 46.8 | LOS E | 0.1 | 0.1 | 0.94 | 0.94 | 216.5 | 220.6 | 1.02 |
| West: Caddens Road | | | | | | | | | | | | |
| P4 | Full | 50 | 53 | 46.8 | LOS E | 0.1 | 0.1 | 0.94 | 0.94 | 209.8 | 211.9 | 1.01 |
| All Pedestrians | | 200 | 211 | 46.8 | LOS E | 0.1 | 0.1 | 0.94 | 0.94 | 213.2 | 216.3 | 1.01 |

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

# MOVEMENT SUMMARY

## Site: 1 [Great Western Highway/O'Connell Street (Site Folder: 2031 STFM + Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 1 | L2 | 139 | 2.2 | 146 | 2.2 | 0.229 | 31.2 | LOS C | 6.4 | 45.8 | 0.69 | 0.72 | 0.69 | 38.9 |
| 2 | T1 | 24 | 4.2 | 25 | 4.2 | 0.884 | 26.1 | LOS B | 18.2 | 133.5 | 0.70 | 0.73 | 0.72 | 33.7 |
| 3 | R2 | 262 | 4.9 | 276 | 4.9 | * 0.884 | 64.2 | LOS E | 18.2 | 133.5 | 0.97 | 1.02 | 1.29 | 29.5 |
| Approach | | 425 | 4.0 | 447 | 4.0 | 0.884 | 51.2 | LOS D | 18.2 | 133.5 | 0.86 | 0.90 | 1.06 | 32.3 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 279 | 3.6 | 294 | 3.6 | 0.374 | 30.4 | LOS C | 11.5 | 83.0 | 0.72 | 0.78 | 0.72 | 38.8 |
| 5 | T1 | 1400 | 2.5 | 1474 | 2.5 | * 0.901 | 46.1 | LOS D | 46.9 | 335.7 | 0.99 | 1.03 | 1.15 | 34.2 |
| 6 | R2 | 20 | 5.0 | 21 | 5.0 | 0.084 | 25.2 | LOS B | 0.6 | 4.1 | 0.79 | 0.70 | 0.79 | 35.9 |
| Approach | | 1699 | 2.7 | 1788 | 2.7 | 0.901 | 43.3 | LOS D | 46.9 | 335.7 | 0.95 | 0.98 | 1.08 | 35.0 |
| North: French Street | | | | | | | | | | | | | | |
| 7 | L2 | 47 | 0.0 | 49 | 0.0 | 0.072 | 28.8 | LOS C | 1.9 | 13.4 | 0.63 | 0.69 | 0.63 | 35.1 |
| 8 | T1 | 50 | 0.0 | 53 | 0.0 | 0.251 | 35.0 | LOS C | 4.8 | 33.9 | 0.79 | 0.73 | 0.79 | 31.8 |
| 9 | R2 | 57 | 1.8 | 60 | 1.8 | 0.251 | 40.8 | LOS C | 4.8 | 33.9 | 0.81 | 0.73 | 0.81 | 30.5 |
| Approach | | 154 | 0.6 | 162 | 0.6 | 0.251 | 35.2 | LOS C | 4.8 | 33.9 | 0.75 | 0.72 | 0.75 | 32.2 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 10 | L2 | 17 | 29.4 | 18 | 29.4 | 0.793 | 37.0 | LOS C | 15.9 | 115.9 | 0.74 | 0.72 | 0.85 | 32.4 |
| 11 | T1 | 1276 | 3.7 | 1343 | 3.7 | 0.833 | 34.2 | LOS C | 31.2 | 225.2 | 0.82 | 0.80 | 0.92 | 38.5 |
| 12 | R2 | 127 | 6.9 | 134 | 6.9 | * 0.613 | 33.6 | LOS C | 4.2 | 31.4 | 0.99 | 0.81 | 1.01 | 37.7 |
| Approach | | 1420 | 4.2 | 1495 | 4.2 | 0.833 | 34.2 | LOS C | 31.2 | 225.2 | 0.83 | 0.80 | 0.93 | 38.4 |
| All Vehicles | | 3698 | 3.4 | 3893 | 3.4 | 0.901 | 40.4 | LOS C | 46.9 | 335.7 | 0.89 | 0.89 | 1.00 | 35.7 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: Great Western Highway | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All Pedestrians | 10 | 11 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

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


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# MOVEMENT SUMMARY

## Site: 2 [Great Western Highway/Gipps Street (Site Folder: 2031 STFM + Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 761 | 5.1 | 801 | 5.1 | 0.856 | 30.8 | LOS C | 31.5 | 229.9 | 0.64 | 0.83 | 0.70 | 44.6 |
| 3 | R2 | 785 | 6.4 | 826 | 6.4 | * 0.930 | 75.9 | LOS F | 29.6 | 218.8 | 1.00 | 1.00 | 1.35 | 21.1 |
| Approach | | 1546 | 5.7 | 1627 | 5.7 | 0.930 | 53.7 | LOS D | 31.5 | 229.9 | 0.82 | 0.92 | 1.03 | 30.0 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 421 | 8.9 | 443 | 8.9 | 0.483 | 26.7 | LOS B | 16.3 | 122.9 | 0.68 | 0.80 | 0.68 | 38.6 |
| 5 | T1 | 1120 | 2.0 | 1179 | 2.0 | * 0.930 | 70.4 | LOS E | 28.6 | 203.5 | 1.00 | 1.06 | 1.36 | 27.9 |
| Approach | | 1541 | 3.9 | 1622 | 3.9 | 0.930 | 58.5 | LOS E | 28.6 | 203.5 | 0.91 | 0.99 | 1.17 | 29.8 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 11 | T1 | 1066 | 3.1 | 1122 | 3.1 | 0.301 | 9.6 | LOS A | 9.3 | 67.0 | 0.47 | 0.41 | 0.47 | 63.5 |
| 12 | R2 | 575 | 5.6 | 605 | 5.6 | * 0.951 | 74.3 | LOS F | 45.0 | 330.0 | 1.00 | 1.02 | 1.35 | 26.0 |
| Approach | | 1641 | 4.0 | 1727 | 4.0 | 0.951 | 32.3 | LOS C | 45.0 | 330.0 | 0.65 | 0.62 | 0.78 | 42.0 |
| All Vehicles | | 4728 | 4.5 | 4977 | 4.5 | 0.951 | 47.8 | LOS D | 45.0 | 330.0 | 0.79 | 0.84 | 0.99 | 33.4 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 219.8 | 215.3 | 0.98 |
| P1B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| East: Great Western Highway | | | | | | | | | | | | |
| P2B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 230.0 | 228.6 | 0.99 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.1 | 213.1 | 0.98 |

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: 3 [O'Connell Street/Corr Road (Site Folder: 2031 STFM + Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 2 | T1 | 491 | 1.3 | 517 | 1.3 | 0.317 | 0.5 | LOS A | 0.7 | 5.1 | 0.15 | 0.06 | 0.16 | 58.7 |
| 3 | R2 | 51 | 2.4 | 54 | 2.4 | 0.317 | 8.2 | LOS A | 0.7 | 5.1 | 0.15 | 0.06 | 0.16 | 52.8 |
| Approach | | 542 | 1.4 | 571 | 1.4 | 0.317 | 1.2 | NA | 0.7 | 5.1 | 0.15 | 0.06 | 0.16 | 58.3 |
| East: Corr Road | | | | | | | | | | | | | | |
| 4 | L2 | 41 | 0.0 | 43 | 0.0 | 0.037 | 6.7 | LOS A | 0.1 | 1.0 | 0.39 | 0.61 | 0.39 | 44.8 |
| 6 | R2 | 113 | 5.3 | 119 | 5.3 | 0.289 | 13.9 | LOS A | 1.0 | 7.6 | 0.74 | 0.93 | 0.87 | 46.0 |
| Approach | | 154 | 3.9 | 162 | 3.9 | 0.289 | 12.0 | LOS A | 1.0 | 7.6 | 0.65 | 0.85 | 0.74 | 45.8 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 101 | 5.9 | 106 | 5.9 | 0.243 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.14 | 0.00 | 56.0 |
| 8 | T1 | 337 | 1.4 | 355 | 1.4 | 0.243 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.14 | 0.00 | 58.5 |
| Approach | | 438 | 2.5 | 461 | 2.5 | 0.243 | 1.4 | NA | 0.0 | 0.0 | 0.00 | 0.14 | 0.00 | 57.9 |
| All Vehicles | | 1134 | 2.1 | 1194 | 2.1 | 0.317 | 2.7 | NA | 1.0 | 7.6 | 0.16 | 0.20 | 0.18 | 56.3 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 4 [O'Connell Street/O'Connell Lane (Site Folder: 2031 STFM + Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/90min | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 77 | 0.0 | 54 | 0.0 | 0.378 | 5.6 | LOS A | 2.9 | 20.4 | 0.50 | 0.60 | 0.50 | 48.7 |
| 2 | T1 | 332 | 0.7 | 233 | 0.7 | 0.378 | 6.1 | LOS A | 2.9 | 20.4 | 0.50 | 0.60 | 0.50 | 49.6 |
| 3 | R2 | 217 | 0.0 | 152 | 0.0 | 0.378 | 9.5 | LOS A | 2.9 | 20.4 | 0.50 | 0.60 | 0.50 | 53.7 |
| Approach | | 626 | 0.4 | 439 | 0.4 | 0.378 | 7.2 | LOS A | 2.9 | 20.4 | 0.50 | 0.60 | 0.50 | 51.4 |
| East: O'Connell Street | | | | | | | | | | | | | | |
| 4 | L2 | 161 | 1.7 | 113 | 1.7 | 0.242 | 5.7 | LOS A | 1.6 | 11.6 | 0.45 | 0.61 | 0.45 | 53.0 |
| 5 | T1 | 24 | 4.2 | 17 | 4.2 | 0.242 | 6.0 | LOS A | 1.6 | 11.6 | 0.45 | 0.61 | 0.45 | 52.4 |
| 6 | R2 | 192 | 2.1 | 135 | 2.1 | 0.242 | 9.4 | LOS A | 1.6 | 11.6 | 0.45 | 0.61 | 0.45 | 52.1 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.242 | 11.1 | LOS A | 1.6 | 11.6 | 0.45 | 0.61 | 0.45 | 55.3 |
| Approach | | 378 | 2.1 | 265 | 2.1 | 0.242 | 7.6 | LOS A | 1.6 | 11.6 | 0.45 | 0.61 | 0.45 | 52.5 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 150 | 1.8 | 105 | 1.8 | 0.240 | 5.9 | LOS A | 1.6 | 11.5 | 0.46 | 0.56 | 0.46 | 52.3 |
| 8 | T1 | 211 | 0.6 | 148 | 0.6 | 0.240 | 6.0 | LOS A | 1.6 | 11.5 | 0.46 | 0.56 | 0.46 | 50.5 |
| 9 | R2 | 18 | 20.0 | 13 | 20.0 | 0.240 | 9.8 | LOS A | 1.6 | 11.5 | 0.46 | 0.56 | 0.46 | 42.7 |
| Approach | | 379 | 2.0 | 266 | 2.0 | 0.240 | 6.1 | LOS A | 1.6 | 11.5 | 0.46 | 0.56 | 0.46 | 51.1 |
| West: WSU Access | | | | | | | | | | | | | | |
| 10 | L2 | 18 | 14.3 | 13 | 14.3 | 0.044 | 8.4 | LOS A | 0.3 | 1.9 | 0.65 | 0.67 | 0.65 | 40.4 |
| 11 | T1 | 18 | 11.1 | 13 | 11.1 | 0.044 | 8.6 | LOS A | 0.3 | 1.9 | 0.65 | 0.67 | 0.65 | 51.4 |
| 12 | R2 | 10 | 0.0 | 7 | 0.0 | 0.044 | 11.5 | LOS A | 0.3 | 1.9 | 0.65 | 0.67 | 0.65 | 48.0 |
| Approach | | 46 | 9.9 | 32 | 9.9 | 0.044 | 9.1 | LOS A | 0.3 | 1.9 | 0.65 | 0.67 | 0.65 | 47.6 |
| All Vehicles | | 1429 | 1.5 | 1003 | 1.5 | 0.378 | 7.1 | LOS A | 2.9 | 20.4 | 0.48 | 0.59 | 0.48 | 51.6 |

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

# MOVEMENT SUMMARY

## Site: 5 [Cadda Ridge Drive/O'Connell Lane (Site Folder: 2031 STFM + Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 3 | 4.0 | 3 | 4.0 | 0.053 | 7.4 | LOS A | 0.3 | 2.3 | 0.70 | 0.65 | 0.70 | 44.9 |
| 2 | T1 | 30 | 4.0 | 32 | 4.0 | 0.053 | 7.6 | LOS A | 0.3 | 2.3 | 0.70 | 0.65 | 0.70 | 45.5 |
| 3 | R2 | 3 | 4.0 | 3 | 4.0 | 0.053 | 11.3 | LOS A | 0.3 | 2.3 | 0.70 | 0.65 | 0.70 | 45.6 |
| Approach | | 36 | 4.0 | 38 | 4.0 | 0.053 | 7.9 | LOS A | 0.3 | 2.3 | 0.70 | 0.65 | 0.70 | 45.5 |
| East: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 4 | L2 | 3 | 4.0 | 3 | 4.0 | 0.402 | 4.9 | LOS A | 3.3 | 23.5 | 0.54 | 0.62 | 0.54 | 44.6 |
| 5 | T1 | 107 | 4.0 | 113 | 4.0 | 0.402 | 4.9 | LOS A | 3.3 | 23.5 | 0.54 | 0.62 | 0.54 | 45.5 |
| 6 | R2 | 317 | 4.0 | 334 | 4.0 | 0.402 | 8.6 | LOS A | 3.3 | 23.5 | 0.54 | 0.62 | 0.54 | 45.2 |
| Approach | | 427 | 4.0 | 449 | 4.0 | 0.402 | 7.6 | LOS A | 3.3 | 23.5 | 0.54 | 0.62 | 0.54 | 45.3 |
| North: O'Connell Lane | | | | | | | | | | | | | | |
| 7 | L2 | 221 | 4.0 | 233 | 4.0 | 0.391 | 5.5 | LOS A | 3.1 | 22.7 | 0.62 | 0.64 | 0.62 | 44.9 |
| 8 | T1 | 10 | 4.0 | 11 | 4.0 | 0.391 | 5.5 | LOS A | 3.1 | 22.7 | 0.62 | 0.64 | 0.62 | 45.8 |
| 9 | R2 | 151 | 4.0 | 159 | 4.0 | 0.391 | 9.0 | LOS A | 3.1 | 22.7 | 0.62 | 0.64 | 0.62 | 45.7 |
| Approach | | 382 | 4.0 | 402 | 4.0 | 0.391 | 6.9 | LOS A | 3.1 | 22.7 | 0.62 | 0.64 | 0.62 | 45.2 |
| West: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 10 | L2 | 280 | 4.0 | 295 | 4.0 | 0.588 | 8.5 | LOS A | 5.8 | 41.9 | 0.82 | 0.83 | 0.92 | 44.1 |
| 11 | T1 | 212 | 4.0 | 223 | 4.0 | 0.588 | 8.6 | LOS A | 5.8 | 41.9 | 0.82 | 0.83 | 0.92 | 45.2 |
| 12 | R2 | 3 | 4.0 | 3 | 4.0 | 0.588 | 12.1 | LOS A | 5.8 | 41.9 | 0.82 | 0.83 | 0.92 | 45.1 |
| Approach | | 495 | 4.0 | 521 | 4.0 | 0.588 | 8.6 | LOS A | 5.8 | 41.9 | 0.82 | 0.83 | 0.92 | 44.6 |
| All Vehicles | | 1340 | 4.0 | 1411 | 4.0 | 0.588 | 7.8 | LOS A | 5.8 | 41.9 | 0.67 | 0.70 | 0.71 | 45.0 |

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

# MOVEMENT SUMMARY

## Site: 6 [O'Connell St & Starline Dr (Site Folder: 2031 STFM + Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Proposed Residential Development
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Starline Drive | | | | | | | | | | | | | | |
| 1 | L2 | 35 | 2.0 | 37 | 2.0 | 0.193 | 5.8 | LOS A | 0.7 | 4.8 | 0.54 | 0.75 | 0.54 | 42.4 |
| 2 | T1 | 12 | 0.0 | 13 | 0.0 | 0.193 | 8.5 | LOS A | 0.7 | 4.8 | 0.54 | 0.75 | 0.54 | 46.9 |
| 3 | R2 | 63 | 2.0 | 66 | 2.0 | 0.193 | 10.6 | LOS A | 0.7 | 4.8 | 0.54 | 0.75 | 0.54 | 44.1 |
| Approach | | 110 | 1.8 | 116 | 1.8 | 0.193 | 8.9 | LOS A | 0.7 | 4.8 | 0.54 | 0.75 | 0.54 | 43.9 |
| East: O'Connell St | | | | | | | | | | | | | | |
| 4 | L2 | 27 | 2.0 | 28 | 2.0 | 0.201 | 5.2 | LOS A | 0.2 | 1.5 | 0.07 | 0.07 | 0.07 | 49.2 |
| 5 | T1 | 315 | 2.0 | 332 | 2.0 | 0.201 | 0.1 | LOS A | 0.2 | 1.5 | 0.07 | 0.07 | 0.07 | 49.7 |
| 6 | R2 | 16 | 0.0 | 17 | 0.0 | 0.201 | 6.9 | LOS A | 0.2 | 1.5 | 0.07 | 0.07 | 0.07 | 51.9 |
| Approach | | 358 | 1.9 | 377 | 1.9 | 0.201 | 0.8 | NA | 0.2 | 1.5 | 0.07 | 0.07 | 0.07 | 49.8 |
| North: Site Access | | | | | | | | | | | | | | |
| 7 | L2 | 19 | 0.0 | 20 | 0.0 | 0.192 | 6.7 | LOS A | 0.7 | 4.7 | 0.55 | 0.78 | 0.55 | 51.9 |
| 8 | T1 | 31 | 0.0 | 33 | 0.0 | 0.192 | 8.6 | LOS A | 0.7 | 4.7 | 0.55 | 0.78 | 0.55 | 49.0 |
| 9 | R2 | 56 | 0.0 | 59 | 0.0 | 0.192 | 11.2 | LOS A | 0.7 | 4.7 | 0.55 | 0.78 | 0.55 | 49.0 |
| Approach | | 106 | 0.0 | 112 | 0.0 | 0.192 | 9.6 | LOS A | 0.7 | 4.7 | 0.55 | 0.78 | 0.55 | 49.7 |
| West: O'Connell St | | | | | | | | | | | | | | |
| 10 | L2 | 22 | 0.0 | 23 | 0.0 | 0.187 | 6.3 | LOS A | 0.2 | 1.3 | 0.07 | 0.06 | 0.07 | 53.1 |
| 11 | T1 | 297 | 2.0 | 313 | 2.0 | 0.187 | 0.1 | LOS A | 0.2 | 1.3 | 0.07 | 0.06 | 0.07 | 49.7 |
| 12 | R2 | 14 | 2.0 | 15 | 2.0 | 0.187 | 6.2 | LOS A | 0.2 | 1.3 | 0.07 | 0.06 | 0.07 | 48.1 |
| Approach | | 333 | 1.9 | 351 | 1.9 | 0.187 | 0.8 | NA | 0.2 | 1.3 | 0.07 | 0.06 | 0.07 | 49.8 |
| All Vehicles | | 907 | 1.7 | 955 | 1.7 | 0.201 | 2.8 | NA | 0.7 | 4.8 | 0.18 | 0.23 | 0.18 | 49.1 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 7 [Gipps Street/Sunflower Drive (Site Folder: 2031 STFM + Development AM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 170 | 4.0 | 179 | 4.0 | 0.707 | 25.2 | LOS B | 31.8 | 230.2 | 0.76 | 0.73 | 0.76 | 39.6 |
| 2 | T1 | 1330 | 4.0 | 1400 | 4.0 | 0.707 | 18.2 | LOS B | 32.1 | 232.2 | 0.76 | 0.71 | 0.76 | 54.4 |
| 3 | R2 | 2 | 4.0 | 2 | 4.0 | * 0.012 | 36.9 | LOS C | 0.1 | 0.5 | 0.92 | 0.61 | 0.92 | 35.3 |
| Approach | | 1502 | 4.0 | 1581 | 4.0 | 0.707 | 19.0 | LOS B | 32.1 | 232.2 | 0.76 | 0.72 | 0.76 | 53.0 |
| East: Fowler Street | | | | | | | | | | | | | | |
| 4 | L2 | 5 | 4.0 | 5 | 4.0 | 0.024 | 41.5 | LOS C | 0.5 | 3.4 | 0.79 | 0.61 | 0.79 | 33.1 |
| 5 | T1 | 5 | 4.0 | 5 | 4.0 | 0.024 | 36.9 | LOS C | 0.5 | 3.4 | 0.79 | 0.61 | 0.79 | 27.6 |
| 6 | R2 | 12 | 4.0 | 13 | 4.0 | 0.054 | 50.4 | LOS D | 0.6 | 4.6 | 0.87 | 0.68 | 0.87 | 32.0 |
| Approach | | 22 | 4.0 | 23 | 4.0 | 0.054 | 45.3 | LOS D | 0.6 | 4.6 | 0.83 | 0.65 | 0.83 | 31.4 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 9 | 0.0 | 9 | 0.0 | 0.705 | 32.2 | LOS C | 30.4 | 212.9 | 0.84 | 0.76 | 0.84 | 42.8 |
| 8 | T1 | 1248 | 0.0 | 1314 | 0.0 | * 0.705 | 25.0 | LOS B | 30.4 | 212.9 | 0.83 | 0.75 | 0.83 | 49.3 |
| 9 | R2 | 53 | 0.0 | 56 | 0.0 | * 0.601 | 72.1 | LOS F | 3.5 | 24.3 | 1.00 | 0.77 | 1.08 | 22.4 |
| Approach | | 1310 | 0.0 | 1379 | 0.0 | 0.705 | 26.9 | LOS B | 30.4 | 212.9 | 0.84 | 0.75 | 0.84 | 47.5 |
| West: Sunflower Drive | | | | | | | | | | | | | | |
| 10 | L2 | 90 | 4.0 | 95 | 4.0 | 0.208 | 39.8 | LOS C | 4.7 | 33.9 | 0.80 | 0.74 | 0.80 | 30.7 |
| 11 | T1 | 10 | 4.0 | 11 | 4.0 | 0.208 | 35.2 | LOS C | 4.7 | 33.9 | 0.80 | 0.74 | 0.80 | 27.5 |
| 12 | R2 | 173 | 4.0 | 182 | 4.0 | * 0.691 | 53.0 | LOS D | 10.0 | 72.6 | 0.95 | 0.84 | 1.01 | 22.8 |
| Approach | | 273 | 4.0 | 287 | 4.0 | 0.691 | 48.0 | LOS D | 10.0 | 72.6 | 0.90 | 0.80 | 0.93 | 25.4 |
| All Vehicles | | 3107 | 2.3 | 3271 | 2.3 | 0.707 | 25.1 | LOS B | 32.1 | 232.2 | 0.81 | 0.74 | 0.81 | 47.2 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |
| East: Fowler Street | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 217.2 | 211.9 | 0.98 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |
| West: Sunflower Drive | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 217.2 | 211.9 | 0.98 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 220.5 | 216.2 | 0.98 |

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: 8 [Gipps St & Caddens Rd & Kent Rd (Site Folder: 2031 STFM + Development AM)]

68-80 O'Connell Street, Kingswood
Site Category: Mixed-Use Development
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | | | |
| 1 | L2 | 204 | 2.7 | 215 | 2.7 | 1.118 | 180.2 | LOS F | 92.0 | 664.0 | 1.00 | 1.64 | 2.09 | 18.1 |
| 2 | T1 | 1261 | 4.0 | 1327 | 4.0 | * 1.118 | 173.1 | LOS F | 92.2 | 667.7 | 1.00 | 1.65 | 2.09 | 12.8 |
| 3 | R2 | 14 | 21.4 | 15 | 21.4 | 0.072 | 28.0 | LOS B | 0.4 | 3.7 | 0.78 | 0.69 | 0.78 | 41.1 |
| Approach | | 1479 | 4.0 | 1557 | 4.0 | 1.118 | 172.7 | LOS F | 92.2 | 667.7 | 1.00 | 1.64 | 2.07 | 13.8 |
| East: Caddens Road | | | | | | | | | | | | | | |
| 4 | L2 | 66 | 4.5 | 69 | 4.5 | 0.153 | 28.4 | LOS B | 4.1 | 29.8 | 0.67 | 0.65 | 0.67 | 40.2 |
| 5 | T1 | 40 | 7.5 | 42 | 7.5 | 0.153 | 23.8 | LOS B | 4.1 | 29.8 | 0.67 | 0.65 | 0.67 | 41.7 |
| 6 | R2 | 64 | 4.7 | 67 | 4.7 | 0.229 | 42.3 | LOS C | 3.1 | 22.8 | 0.82 | 0.75 | 0.82 | 35.8 |
| Approach | | 170 | 5.3 | 179 | 5.3 | 0.229 | 32.5 | LOS C | 4.1 | 29.8 | 0.72 | 0.69 | 0.72 | 39.0 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 23 | 21.7 | 24 | 21.7 | 0.658 | 36.8 | LOS C | 24.4 | 178.3 | 0.86 | 0.77 | 0.86 | 40.9 |
| 8 | T1 | 982 | 4.2 | 1034 | 4.2 | 0.658 | 29.4 | LOS C | 24.6 | 178.6 | 0.86 | 0.77 | 0.86 | 42.7 |
| 9 | R2 | 233 | 9.8 | 245 | 9.8 | * 0.985 | 84.6 | LOS F | 15.9 | 120.8 | 1.00 | 1.06 | 1.65 | 28.6 |
| Approach | | 1238 | 5.5 | 1303 | 5.5 | 0.985 | 39.9 | LOS C | 24.6 | 178.6 | 0.89 | 0.82 | 1.01 | 37.3 |
| West: Caddens Road | | | | | | | | | | | | | | |
| 10 | L2 | 274 | 3.7 | 288 | 3.7 | 0.719 | 27.3 | LOS B | 12.1 | 87.4 | 0.68 | 0.75 | 0.71 | 41.5 |
| 11 | T1 | 28 | 3.6 | 29 | 3.6 | 0.719 | 22.7 | LOS B | 12.1 | 87.4 | 0.68 | 0.75 | 0.71 | 41.6 |
| 12 | R2 | 337 | 1.0 | 355 | 1.0 | * 1.128 | 198.3 | LOS F | 45.0 | 317.6 | 1.00 | 1.49 | 2.29 | 16.5 |
| Approach | | 639 | 2.3 | 673 | 2.3 | 1.128 | 117.3 | LOS F | 45.0 | 317.6 | 0.85 | 1.14 | 1.54 | 23.3 |
| All Vehicles | | 3526 | 4.3 | 3712 | 4.3 | 1.128 | 109.3 | LOS F | 92.2 | 667.7 | 0.92 | 1.22 | 1.54 | 21.2 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | |
| P1 | Full | 50 | 53 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 224.2 | 220.9 | 0.99 |
| East: Caddens Road | | | | | | | | | | | | |
| P2 | Full | 50 | 53 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 217.3 | 211.9 | 0.98 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 50 | 53 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 224.0 | 220.6 | 0.98 |
| West: Caddens Road | | | | | | | | | | | | |
| P4 | Full | 50 | 53 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 217.3 | 211.9 | 0.98 |
| All Pedestrians | | 200 | 211 | 54.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 220.7 | 216.3 | 0.98 |

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

# MOVEMENT SUMMARY

## Site: 1 [Great Western Highway/O'Connell Street (Site Folder: Existing PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] veh/h | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 1 | L2 | 79 | 0 | 83 | 0.0 | 0.178 | 36.9 | LOS C | 4.5 | 31.6 | 0.75 | 0.71 | 0.75 | 37.0 |
| 2 | T1 | 25 | 1 | 26 | 4.0 | 0.673 | 31.5 | LOS C | 11.5 | 83.1 | 0.76 | 0.71 | 0.76 | 31.9 |
| 3 | R2 | 201 | 7 | 212 | 3.5 | * 0.673 | 49.3 | LOS D | 11.5 | 83.1 | 0.95 | 0.84 | 0.97 | 32.9 |
| Approach | | 305 | 8 | 321 | 2.6 | 0.673 | 44.6 | LOS D | 11.5 | 83.1 | 0.88 | 0.80 | 0.90 | 33.8 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 213 | 6 | 224 | 2.8 | 0.264 | 26.5 | LOS B | 7.9 | 56.4 | 0.65 | 0.75 | 0.65 | 40.2 |
| 5 | T1 | 1114 | 18 | 1173 | 1.6 | 0.676 | 26.1 | LOS B | 27.5 | 195.2 | 0.83 | 0.74 | 0.83 | 42.0 |
| 6 | R2 | 58 | 0 | 61 | 0.0 | * 0.251 | 20.7 | LOS B | 1.5 | 10.5 | 0.71 | 0.72 | 0.71 | 38.4 |
| Approach | | 1385 | 24 | 1458 | 1.7 | 0.676 | 26.0 | LOS B | 27.5 | 195.2 | 0.79 | 0.74 | 0.79 | 41.6 |
| North: French Street | | | | | | | | | | | | | | |
| 7 | L2 | 36 | 1 | 38 | 2.8 | 0.067 | 34.1 | LOS C | 1.6 | 11.6 | 0.70 | 0.70 | 0.70 | 32.6 |
| 8 | T1 | 36 | 0 | 38 | 0.0 | 0.235 | 38.9 | LOS C | 4.1 | 29.0 | 0.82 | 0.73 | 0.82 | 30.5 |
| 9 | R2 | 52 | 0 | 55 | 0.0 | 0.235 | 44.5 | LOS D | 4.1 | 29.0 | 0.84 | 0.74 | 0.84 | 29.1 |
| Approach | | 124 | 1 | 131 | 0.8 | 0.235 | 39.9 | LOS C | 4.1 | 29.0 | 0.79 | 0.72 | 0.79 | 30.4 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 10 | L2 | 13 | 0 | 14 | 0.0 | 0.626 | 23.2 | LOS B | 12.2 | 86.2 | 0.63 | 0.55 | 0.63 | 39.9 |
| 11 | T1 | 1264 | 16 | 1331 | 1.3 | * 0.658 | 19.3 | LOS B | 22.3 | 158.1 | 0.68 | 0.60 | 0.68 | 45.7 |
| 12 | R2 | 124 | 3 | 131 | 2.4 | 0.420 | 23.9 | LOS B | 3.3 | 23.6 | 0.84 | 0.78 | 0.84 | 41.3 |
| Approach | | 1401 | 19 | 1475 | 1.4 | 0.658 | 19.7 | LOS B | 22.3 | 158.1 | 0.69 | 0.61 | 0.69 | 45.2 |
| All Vehicles | | 3215 | 52 | 3384 | 1.6 | 0.676 | 25.5 | LOS B | 27.5 | 195.2 | 0.76 | 0.69 | 0.76 | 41.6 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: Great Western Highway | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All Pedestrians | 10 | 11 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

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


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# MOVEMENT SUMMARY

## Site: 2 [Great Western Highway/Gipps Street (Site Folder: Existing PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] veh/h | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 436 | 22 | 459 | 5.0 | 0.399 | 20.1 | LOS B | 12.7 | 92.8 | 0.52 | 0.76 | 0.52 | 50.2 |
| 3 | R2 | 470 | 25 | 495 | 5.3 | 0.691 | 56.6 | LOS E | 13.8 | 101.1 | 0.98 | 0.85 | 1.01 | 25.8 |
| Approach | | 906 | 47 | 954 | 5.2 | 0.691 | 39.1 | LOS C | 13.8 | 101.1 | 0.76 | 0.80 | 0.77 | 35.2 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 537 | 16 | 565 | 3.0 | * 0.761 | 29.8 | LOS C | 23.4 | 167.7 | 0.77 | 0.83 | 0.77 | 37.3 |
| 5 | T1 | 1008 | 19 | 1061 | 1.9 | 0.711 | 44.6 | LOS D | 19.0 | 135.1 | 0.97 | 0.84 | 0.97 | 36.5 |
| Approach | | 1545 | 35 | 1626 | 2.3 | 0.761 | 39.4 | LOS C | 23.4 | 167.7 | 0.90 | 0.83 | 0.90 | 36.7 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 11 | T1 | 944 | 18 | 994 | 1.9 | 0.246 | 6.8 | LOS A | 6.9 | 48.8 | 0.39 | 0.34 | 0.39 | 67.5 |
| 12 | R2 | 513 | 18 | 540 | 3.5 | * 0.761 | 41.5 | LOS C | 27.5 | 198.0 | 0.93 | 0.88 | 0.94 | 36.4 |
| Approach | | 1457 | 36 | 1534 | 2.5 | 0.761 | 19.0 | LOS B | 27.5 | 198.0 | 0.58 | 0.53 | 0.58 | 51.8 |
| All Vehicles | | 3908 | 118 | 4114 | 3.0 | 0.761 | 31.7 | LOS C | 27.5 | 198.0 | 0.75 | 0.71 | 0.75 | 41.1 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 219.8 | 215.3 | 0.98 |
| P1B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| East: Great Western Highway | | | | | | | | | | | | |
| P2B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 230.0 | 228.6 | 0.99 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.1 | 213.1 | 0.98 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.

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


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# MOVEMENT SUMMARY

## Site: 3 [O'Connell Street/Corr Road (Site Folder: Existing PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] veh/h | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 2 | T1 | 231 | 4 | 243 | 1.7 | 0.170 | 0.7 | LOS A | 0.5 | 3.5 | 0.22 | 0.10 | 0.22 | 58.0 |
| 3 | R2 | 40 | 1 | 42 | 2.5 | 0.170 | 8.3 | LOS A | 0.5 | 3.5 | 0.22 | 0.10 | 0.22 | 51.7 |
| Approach | | 271 | 5 | 285 | 1.8 | 0.170 | 1.9 | NA | 0.5 | 3.5 | 0.22 | 0.10 | 0.22 | 57.4 |
| East: Corr Road | | | | | | | | | | | | | | |
| 4 | L2 | 68 | 3 | 72 | 4.4 | 0.064 | 7.0 | LOS A | 0.2 | 1.8 | 0.41 | 0.63 | 0.41 | 44.1 |
| 6 | R2 | 128 | 1 | 135 | 0.8 | 0.226 | 10.0 | LOS A | 0.8 | 5.6 | 0.60 | 0.85 | 0.63 | 48.8 |
| Approach | | 196 | 4 | 206 | 2.0 | 0.226 | 9.0 | LOS A | 0.8 | 5.6 | 0.53 | 0.77 | 0.55 | 47.8 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 172 | 1 | 181 | 0.6 | 0.288 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.20 | 0.00 | 56.1 |
| 8 | T1 | 348 | 6 | 366 | 1.7 | 0.288 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.20 | 0.00 | 57.8 |
| Approach | | 520 | 7 | 547 | 1.3 | 0.288 | 1.9 | NA | 0.0 | 0.0 | 0.00 | 0.20 | 0.00 | 57.2 |
| All Vehicles | | 987 | 16 | 1039 | 1.6 | 0.288 | 3.3 | NA | 0.8 | 5.6 | 0.17 | 0.28 | 0.17 | 55.4 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 4 [O'Connell Street/O'Connell Lane (Site Folder: Existing PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] veh/h | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 17 | 0 | 18 | 0.0 | 0.293 | 5.5 | LOS A | 2.1 | 15.0 | 0.48 | 0.60 | 0.48 | 48.5 |
| 2 | T1 | 168 | 2 | 177 | 1.2 | 0.293 | 6.0 | LOS A | 2.1 | 15.0 | 0.48 | 0.60 | 0.48 | 49.4 |
| 3 | R2 | 130 | 0 | 137 | 0.0 | 0.293 | 9.4 | LOS A | 2.1 | 15.0 | 0.48 | 0.60 | 0.48 | 53.6 |
| Approach | | 315 | 2 | 332 | 0.6 | 0.293 | 7.3 | LOS A | 2.1 | 15.0 | 0.48 | 0.60 | 0.48 | 51.6 |
| East: O'Connell Street | | | | | | | | | | | | | | |
| 4 | L2 | 146 | 2 | 154 | 1.4 | 0.331 | 6.9 | LOS A | 2.3 | 16.4 | 0.62 | 0.70 | 0.62 | 52.6 |
| 5 | T1 | 13 | 0 | 14 | 0.0 | 0.331 | 7.1 | LOS A | 2.3 | 16.4 | 0.62 | 0.70 | 0.62 | 52.2 |
| 6 | R2 | 137 | 2 | 144 | 1.5 | 0.331 | 10.6 | LOS A | 2.3 | 16.4 | 0.62 | 0.70 | 0.62 | 51.6 |
| 6u | U | 2 | 0 | 2 | 0.0 | 0.331 | 12.2 | LOS A | 2.3 | 16.4 | 0.62 | 0.70 | 0.62 | 54.9 |
| Approach | | 298 | 4 | 314 | 1.3 | 0.331 | 8.6 | LOS A | 2.3 | 16.4 | 0.62 | 0.70 | 0.62 | 52.2 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 152 | 3 | 160 | 2.0 | 0.376 | 6.4 | LOS A | 2.8 | 19.7 | 0.55 | 0.60 | 0.55 | 52.0 |
| 8 | T1 | 228 | 3 | 240 | 1.3 | 0.376 | 6.5 | LOS A | 2.8 | 19.7 | 0.55 | 0.60 | 0.55 | 50.1 |
| 9 | R2 | 7 | 2 | 7 | 28.6 | 0.376 | 10.7 | LOS A | 2.8 | 19.7 | 0.55 | 0.60 | 0.55 | 41.0 |
| Approach | | 387 | 8 | 407 | 2.1 | 0.376 | 6.6 | LOS A | 2.8 | 19.7 | 0.55 | 0.60 | 0.55 | 50.9 |
| West: WSU Access | | | | | | | | | | | | | | |
| 10 | L2 | 6 | 0 | 6 | 0.0 | 0.098 | 7.5 | LOS A | 0.6 | 4.1 | 0.62 | 0.70 | 0.62 | 41.5 |
| 11 | T1 | 25 | 1 | 26 | 4.0 | 0.098 | 8.0 | LOS A | 0.6 | 4.1 | 0.62 | 0.70 | 0.62 | 51.1 |
| 12 | R2 | 46 | 0 | 48 | 0.0 | 0.098 | 11.2 | LOS A | 0.6 | 4.1 | 0.62 | 0.70 | 0.62 | 47.4 |
| Approach | | 77 | 1 | 81 | 1.3 | 0.098 | 9.8 | LOS A | 0.6 | 4.1 | 0.62 | 0.70 | 0.62 | 48.6 |
| All Vehicles | | 1077 | 15 | 1134 | 1.4 | 0.376 | 7.6 | LOS A | 2.8 | 19.7 | 0.55 | 0.63 | 0.55 | 51.4 |

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

# MOVEMENT SUMMARY

## Site: 5 [Cadda Ridge Drive/O'Connell Lane (Site Folder: Existing PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 1 | 4.0 | 1 | 4.0 | 0.014 | 5.5 | LOS A | 0.1 | 0.6 | 0.55 | 0.51 | 0.55 | 45.7 |
| 2 | T1 | 10 | 4.0 | 11 | 4.0 | 0.014 | 5.7 | LOS A | 0.1 | 0.6 | 0.55 | 0.51 | 0.55 | 46.3 |
| 3 | R2 | 1 | 4.0 | 1 | 4.0 | 0.014 | 9.4 | LOS A | 0.1 | 0.6 | 0.55 | 0.51 | 0.55 | 46.3 |
| Approach | | 12 | 4.0 | 13 | 4.0 | 0.014 | 6.0 | LOS A | 0.1 | 0.6 | 0.55 | 0.51 | 0.55 | 46.3 |
| East: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 4.0 | 1 | 4.0 | 0.213 | 4.6 | LOS A | 1.4 | 10.1 | 0.45 | 0.60 | 0.45 | 44.9 |
| 5 | T1 | 58 | 4.0 | 61 | 4.0 | 0.213 | 4.6 | LOS A | 1.4 | 10.1 | 0.45 | 0.60 | 0.45 | 45.8 |
| 6 | R2 | 161 | 4.0 | 169 | 4.0 | 0.213 | 8.3 | LOS A | 1.4 | 10.1 | 0.45 | 0.60 | 0.45 | 45.4 |
| Approach | | 220 | 4.0 | 232 | 4.0 | 0.213 | 7.3 | LOS A | 1.4 | 10.1 | 0.45 | 0.60 | 0.45 | 45.5 |
| North: O'Connell Lane | | | | | | | | | | | | | | |
| 7 | L2 | 256 | 4.0 | 269 | 4.0 | 0.358 | 4.5 | LOS A | 2.8 | 20.2 | 0.44 | 0.55 | 0.44 | 45.4 |
| 8 | T1 | 13 | 4.0 | 14 | 4.0 | 0.358 | 4.5 | LOS A | 2.8 | 20.2 | 0.44 | 0.55 | 0.44 | 46.3 |
| 9 | R2 | 147 | 4.0 | 155 | 4.0 | 0.358 | 8.1 | LOS A | 2.8 | 20.2 | 0.44 | 0.55 | 0.44 | 46.2 |
| Approach | | 416 | 4.0 | 438 | 4.0 | 0.358 | 5.8 | LOS A | 2.8 | 20.2 | 0.44 | 0.55 | 0.44 | 45.7 |
| West: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 10 | L2 | 142 | 4.0 | 149 | 4.0 | 0.252 | 4.8 | LOS A | 1.7 | 12.3 | 0.47 | 0.53 | 0.47 | 45.9 |
| 11 | T1 | 116 | 4.0 | 122 | 4.0 | 0.252 | 4.9 | LOS A | 1.7 | 12.3 | 0.47 | 0.53 | 0.47 | 47.0 |
| 12 | R2 | 1 | 4.0 | 1 | 4.0 | 0.252 | 8.4 | LOS A | 1.7 | 12.3 | 0.47 | 0.53 | 0.47 | 46.8 |
| Approach | | 259 | 4.0 | 273 | 4.0 | 0.252 | 4.9 | LOS A | 1.7 | 12.3 | 0.47 | 0.53 | 0.47 | 46.4 |
| All Vehicles | | 907 | 4.0 | 955 | 4.0 | 0.358 | 5.9 | LOS A | 2.8 | 20.2 | 0.45 | 0.55 | 0.45 | 45.8 |

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

# MOVEMENT SUMMARY

## Site: 6 [O'Connell St & Starline Dr (Site Folder: Existing PM)]

80 O'Connell St, Caddens NSW
Site Category: Proposed Residential Development
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Starline Drive | | | | | | | | | | | | | | |
| 1 | L2 | 20 | 2.0 | 21 | 2.0 | 0.066 | 5.4 | LOS A | 0.2 | 1.6 | 0.39 | 0.64 | 0.39 | 43.7 |
| 3 | R2 | 34 | 2.0 | 36 | 2.0 | 0.066 | 7.4 | LOS A | 0.2 | 1.6 | 0.39 | 0.64 | 0.39 | 45.1 |
| Approach | | 54 | 2.0 | 57 | 2.0 | 0.066 | 6.7 | LOS A | 0.2 | 1.6 | 0.39 | 0.64 | 0.39 | 44.7 |
| East: O'Connell St | | | | | | | | | | | | | | |
| 4 | L2 | 30 | 2.0 | 32 | 2.0 | 0.141 | 4.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 49.1 |
| 5 | T1 | 226 | 2.0 | 238 | 2.0 | 0.141 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 49.6 |
| Approach | | 256 | 2.0 | 269 | 2.0 | 0.141 | 0.6 | NA | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 49.5 |
| West: O'Connell St | | | | | | | | | | | | | | |
| 11 | T1 | 301 | 2.0 | 317 | 2.0 | 0.179 | 0.1 | LOS A | 0.2 | 1.2 | 0.06 | 0.03 | 0.06 | 49.7 |
| 12 | R2 | 18 | 2.0 | 19 | 2.0 | 0.179 | 5.7 | LOS A | 0.2 | 1.2 | 0.06 | 0.03 | 0.06 | 48.1 |
| Approach | | 319 | 2.0 | 336 | 2.0 | 0.179 | 0.4 | NA | 0.2 | 1.2 | 0.06 | 0.03 | 0.06 | 49.6 |
| All Vehicles | | 629 | 2.0 | 662 | 2.0 | 0.179 | 1.0 | NA | 0.2 | 1.6 | 0.06 | 0.10 | 0.06 | 49.2 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 7 [Gipps Street/Sunflower Drive (Site Folder: Existing PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 100 | 4.0 | 105 | 4.0 | 0.409 | 23.2 | LOS B | 11.7 | 84.7 | 0.66 | 0.64 | 0.66 | 41.1 |
| 2 | T1 | 663 | 4.0 | 698 | 4.0 | 0.409 | 15.5 | LOS B | 11.9 | 86.5 | 0.65 | 0.60 | 0.65 | 57.0 |
| 3 | R2 | 4 | 4.0 | 4 | 4.0 | 0.029 | 54.0 | LOS D | 0.2 | 1.4 | 0.94 | 0.64 | 0.94 | 29.7 |
| Approach | | 767 | 4.0 | 807 | 4.0 | 0.409 | 16.7 | LOS B | 11.9 | 86.5 | 0.65 | 0.60 | 0.65 | 54.9 |
| East: Fowler Street | | | | | | | | | | | | | | |
| 4 | L2 | 3 | 4.0 | 3 | 4.0 | 0.011 | 36.3 | LOS C | 0.2 | 1.1 | 0.79 | 0.60 | 0.79 | 34.5 |
| 5 | T1 | 1 | 4.0 | 1 | 4.0 | 0.011 | 31.7 | LOS C | 0.2 | 1.1 | 0.79 | 0.60 | 0.79 | 28.9 |
| 6 | R2 | 7 | 4.0 | 7 | 4.0 | 0.031 | 44.2 | LOS D | 0.3 | 2.3 | 0.88 | 0.66 | 0.88 | 33.8 |
| Approach | | 11 | 4.0 | 12 | 4.0 | 0.031 | 40.9 | LOS C | 0.3 | 2.3 | 0.85 | 0.64 | 0.85 | 33.6 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 9 | 4.0 | 9 | 4.0 | * 0.468 | 22.7 | LOS B | 14.2 | 102.7 | 0.67 | 0.60 | 0.67 | 48.2 |
| 8 | T1 | 885 | 4.0 | 932 | 4.0 | 0.468 | 15.7 | LOS B | 14.2 | 103.1 | 0.67 | 0.60 | 0.67 | 57.5 |
| 9 | R2 | 63 | 4.0 | 66 | 4.0 | * 0.459 | 57.2 | LOS E | 3.3 | 23.8 | 0.99 | 0.76 | 0.99 | 26.0 |
| Approach | | 957 | 4.0 | 1007 | 4.0 | 0.468 | 18.5 | LOS B | 14.2 | 103.1 | 0.69 | 0.61 | 0.69 | 54.1 |
| West: Sunflower Drive | | | | | | | | | | | | | | |
| 10 | L2 | 43 | 4.0 | 45 | 4.0 | 0.099 | 33.3 | LOS C | 1.7 | 12.7 | 0.77 | 0.70 | 0.77 | 33.4 |
| 11 | T1 | 3 | 4.0 | 3 | 4.0 | 0.099 | 28.7 | LOS C | 1.7 | 12.7 | 0.77 | 0.70 | 0.77 | 29.6 |
| 12 | R2 | 115 | 4.0 | 121 | 4.0 | * 0.476 | 47.2 | LOS D | 5.6 | 40.3 | 0.96 | 0.79 | 0.96 | 24.5 |
| Approach | | 161 | 4.0 | 169 | 4.0 | 0.476 | 43.2 | LOS D | 5.6 | 40.3 | 0.90 | 0.76 | 0.90 | 26.8 |
| All Vehicles | | 1896 | 4.0 | 1996 | 4.0 | 0.476 | 20.0 | LOS B | 14.2 | 103.1 | 0.70 | 0.62 | 0.70 | 51.1 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 213.8 | 220.5 | 1.03 |
| East: Fowler Street | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 207.2 | 211.9 | 1.02 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 5 | 5 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 213.8 | 220.5 | 1.03 |
| West: Sunflower Drive | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 207.2 | 211.9 | 1.02 |
| All Pedestrians | | 20 | 21 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 210.5 | 216.2 | 1.03 |

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: 8 [Gipps St & Caddens Rd & Kent Rd (Site Folder: Existing PM)]

68-80 O'Connell Street, Kingswood
Site Category: Mixed-Use Development
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 50 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] veh/h | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | | | |
| 1 | L2 | 252 | 3 | 265 | 1.2 | 0.760 | 25.8 | LOS B | 11.9 | 84.4 | 0.95 | 0.91 | 1.09 | 43.9 |
| 2 | T1 | 680 | 16 | 716 | 2.4 | * 0.760 | 18.7 | LOS B | 12.1 | 86.6 | 0.95 | 0.89 | 1.09 | 50.4 |
| 3 | R2 | 46 | 1 | 48 | 2.2 | 0.117 | 15.3 | LOS B | 0.5 | 3.9 | 0.79 | 0.72 | 0.79 | 46.7 |
| Approach | | 978 | 20 | 1029 | 2.0 | 0.760 | 20.4 | LOS B | 12.1 | 86.6 | 0.94 | 0.89 | 1.08 | 47.5 |
| East: Caddens Road | | | | | | | | | | | | | | |
| 4 | L2 | 34 | 2 | 36 | 5.9 | 0.137 | 21.3 | LOS B | 1.2 | 8.7 | 0.82 | 0.68 | 0.82 | 42.9 |
| 5 | T1 | 22 | 2 | 23 | 9.1 | 0.137 | 16.7 | LOS B | 1.2 | 8.7 | 0.82 | 0.68 | 0.82 | 43.6 |
| 6 | R2 | 52 | 3 | 55 | 5.8 | 0.232 | 26.7 | LOS B | 1.3 | 9.4 | 0.92 | 0.73 | 0.92 | 40.7 |
| Approach | | 108 | 7 | 114 | 6.5 | 0.232 | 23.0 | LOS B | 1.3 | 9.4 | 0.87 | 0.71 | 0.87 | 42.1 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 84 | 2 | 88 | 2.4 | 0.695 | 23.8 | LOS B | 10.2 | 72.8 | 0.92 | 0.83 | 0.99 | 45.9 |
| 8 | T1 | 773 | 20 | 814 | 2.6 | 0.695 | 16.8 | LOS B | 10.3 | 73.5 | 0.92 | 0.83 | 0.99 | 52.8 |
| 9 | R2 | 98 | 1 | 103 | 1.0 | * 0.260 | 16.1 | LOS B | 1.2 | 8.6 | 0.85 | 0.75 | 0.85 | 47.2 |
| Approach | | 955 | 23 | 1005 | 2.4 | 0.695 | 17.4 | LOS B | 10.3 | 73.5 | 0.91 | 0.82 | 0.97 | 50.9 |
| West: Caddens Road | | | | | | | | | | | | | | |
| 10 | L2 | 63 | 1 | 66 | 1.6 | 0.270 | 21.9 | LOS B | 2.4 | 17.2 | 0.85 | 0.72 | 0.85 | 44.2 |
| 11 | T1 | 47 | 2 | 49 | 4.3 | 0.270 | 17.4 | LOS B | 2.4 | 17.2 | 0.85 | 0.72 | 0.85 | 43.5 |
| 12 | R2 | 195 | 3 | 205 | 1.5 | * 0.733 | 29.6 | LOS C | 5.4 | 38.5 | 1.00 | 0.92 | 1.23 | 40.2 |
| Approach | | 305 | 6 | 321 | 2.0 | 0.733 | 26.1 | LOS B | 5.4 | 38.5 | 0.95 | 0.85 | 1.10 | 41.6 |
| All Vehicles | | 2346 | 56 | 2469 | 2.4 | 0.760 | 20.0 | LOS B | 12.1 | 86.6 | 0.93 | 0.85 | 1.03 | 47.0 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | |
| P1 | Full | 50 | 53 | 19.4 | LOS B | 0.1 | 0.1 | 0.88 | 0.88 | 189.3 | 220.9 | 1.17 |
| East: Caddens Road | | | | | | | | | | | | |
| P2 | Full | 50 | 53 | 19.4 | LOS B | 0.1 | 0.1 | 0.88 | 0.88 | 182.4 | 211.9 | 1.16 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 50 | 53 | 19.4 | LOS B | 0.1 | 0.1 | 0.88 | 0.88 | 189.1 | 220.6 | 1.17 |
| West: Caddens Road | | | | | | | | | | | | |
| P4 | Full | 50 | 53 | 19.4 | LOS B | 0.1 | 0.1 | 0.88 | 0.88 | 182.4 | 211.9 | 1.16 |
| All Pedestrians | | 200 | 211 | 19.4 | LOS B | 0.1 | 0.1 | 0.88 | 0.88 | 185.8 | 216.3 | 1.16 |

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

# MOVEMENT SUMMARY

## Site: 1 [Great Western Highway/O'Connell Street (Site Folder: 2031 STFM + W/O Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 1 | L2 | 99 | 0.0 | 104 | 0.0 | 0.207 | 36.4 | LOS C | 5.3 | 37.3 | 0.75 | 0.72 | 0.75 | 37.3 |
| 2 | T1 | 25 | 4.0 | 26 | 4.0 | 0.830 | 30.9 | LOS C | 14.8 | 107.2 | 0.76 | 0.73 | 0.77 | 32.1 |
| 3 | R2 | 227 | 3.5 | 239 | 3.5 | * 0.830 | 59.3 | LOS E | 14.8 | 107.2 | 0.98 | 0.96 | 1.20 | 30.6 |
| Approach | | 351 | 2.5 | 369 | 2.5 | 0.830 | 50.8 | LOS D | 14.8 | 107.2 | 0.90 | 0.87 | 1.04 | 32.3 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 233 | 2.8 | 245 | 2.8 | 0.289 | 26.9 | LOS B | 8.7 | 62.6 | 0.66 | 0.76 | 0.66 | 40.1 |
| 5 | T1 | 1384 | 1.6 | 1457 | 1.6 | 0.834 | 32.5 | LOS C | 40.0 | 284.0 | 0.93 | 0.88 | 0.97 | 39.1 |
| 6 | R2 | 58 | 0.0 | 61 | 0.0 | 0.199 | 23.2 | LOS B | 1.4 | 10.0 | 0.78 | 0.74 | 0.78 | 36.9 |
| Approach | | 1675 | 1.7 | 1763 | 1.7 | 0.834 | 31.4 | LOS C | 40.0 | 284.0 | 0.88 | 0.86 | 0.92 | 39.2 |
| North: French Street | | | | | | | | | | | | | | |
| 7 | L2 | 36 | 2.8 | 38 | 2.8 | 0.069 | 34.3 | LOS C | 1.7 | 12.2 | 0.70 | 0.69 | 0.70 | 32.7 |
| 8 | T1 | 36 | 0.0 | 38 | 0.0 | 0.243 | 39.1 | LOS C | 4.1 | 28.7 | 0.82 | 0.73 | 0.82 | 30.4 |
| 9 | R2 | 52 | 0.0 | 55 | 0.0 | 0.243 | 45.5 | LOS D | 4.1 | 28.7 | 0.85 | 0.74 | 0.85 | 28.7 |
| Approach | | 124 | 0.8 | 131 | 0.8 | 0.243 | 40.4 | LOS C | 4.1 | 28.7 | 0.80 | 0.73 | 0.80 | 30.3 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 10 | L2 | 13 | 0.0 | 14 | 0.0 | 0.804 | 34.8 | LOS C | 17.1 | 121.3 | 0.72 | 0.70 | 0.82 | 33.6 |
| 11 | T1 | 1401 | 1.3 | 1475 | 1.3 | * 0.845 | 32.6 | LOS C | 33.1 | 234.3 | 0.79 | 0.78 | 0.90 | 39.2 |
| 12 | R2 | 164 | 2.4 | 173 | 2.4 | * 0.622 | 34.2 | LOS C | 5.9 | 42.2 | 0.99 | 0.85 | 0.99 | 37.5 |
| Approach | | 1578 | 1.4 | 1661 | 1.4 | 0.845 | 32.8 | LOS C | 33.1 | 234.3 | 0.81 | 0.79 | 0.90 | 39.0 |
| All Vehicles | | 3728 | 1.6 | 3924 | 1.6 | 0.845 | 34.1 | LOS C | 40.0 | 284.0 | 0.85 | 0.82 | 0.92 | 38.0 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: Great Western Highway | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All Pedestrians | 10 | 11 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

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


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# MOVEMENT SUMMARY

## Site: 2 [Great Western Highway/Gipps Street (Site Folder: 2031 STFM + W/O Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 663 | 5.0 | 698 | 5.0 | 0.591 | 23.4 | LOS B | 22.5 | 164.1 | 0.61 | 0.80 | 0.61 | 49.2 |
| 3 | R2 | 714 | 5.3 | 752 | 5.3 | * 0.933 | 78.2 | LOS F | 27.1 | 198.5 | 1.00 | 1.00 | 1.38 | 20.7 |
| Approach | | 1377 | 5.2 | 1449 | 5.2 | 0.933 | 51.8 | LOS D | 27.1 | 198.5 | 0.81 | 0.90 | 1.01 | 30.4 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 617 | 3.0 | 649 | 3.0 | 0.892 | 45.4 | LOS D | 35.7 | 256.3 | 0.81 | 0.91 | 0.98 | 29.7 |
| 5 | T1 | 1158 | 1.9 | 1219 | 1.9 | * 0.910 | 64.1 | LOS E | 28.8 | 204.9 | 1.00 | 1.03 | 1.29 | 29.6 |
| Approach | | 1775 | 2.3 | 1868 | 2.3 | 0.910 | 57.6 | LOS E | 35.7 | 256.3 | 0.93 | 0.99 | 1.19 | 29.6 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 11 | T1 | 1086 | 1.9 | 1143 | 1.9 | 0.293 | 8.3 | LOS A | 8.8 | 62.8 | 0.44 | 0.38 | 0.44 | 65.3 |
| 12 | R2 | 590 | 3.5 | 621 | 3.5 | * 0.943 | 70.5 | LOS E | 44.9 | 323.8 | 1.00 | 1.01 | 1.31 | 27.0 |
| Approach | | 1676 | 2.5 | 1764 | 2.5 | 0.943 | 30.2 | LOS C | 44.9 | 323.8 | 0.63 | 0.60 | 0.74 | 43.3 |
| All Vehicles | | 4828 | 3.2 | 5082 | 3.2 | 0.943 | 46.5 | LOS D | 44.9 | 323.8 | 0.79 | 0.83 | 0.98 | 33.8 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 219.8 | 215.3 | 0.98 |
| P1B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| East: Great Western Highway | | | | | | | | | | | | |
| P2B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 230.0 | 228.6 | 0.99 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.1 | 213.1 | 0.98 |

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.


Organisation: TRANSPORT AND TRAFFIC PLANNING ASSOCIATES | Licence: NETWORK / 1PC | Processed: Thursday, 2 November 2023 11:49:01 AM
Project: T:\WORK22\22078 - O'CONNELL STREET, CADDENS\MODEL\Caddens JAN24.sip9

# MOVEMENT SUMMARY

## Site: 3 [O'Connell Street/Corr Road (Site Folder: 2031 STFM + W/O Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 2 | T1 | 309 | 1.7 | 325 | 1.7 | 0.236 | 1.2 | LOS A | 0.8 | 5.9 | 0.26 | 0.10 | 0.27 | 57.4 |
| 3 | R2 | 53 | 2.5 | 56 | 2.5 | 0.236 | 9.5 | LOS A | 0.8 | 5.9 | 0.26 | 0.10 | 0.27 | 50.8 |
| Approach | | 362 | 1.8 | 381 | 1.8 | 0.236 | 2.4 | NA | 0.8 | 5.9 | 0.26 | 0.10 | 0.27 | 56.8 |
| East: Corr Road | | | | | | | | | | | | | | |
| 4 | L2 | 103 | 4.4 | 108 | 4.4 | 0.105 | 7.4 | LOS A | 0.4 | 3.0 | 0.46 | 0.68 | 0.46 | 43.8 |
| 6 | R2 | 141 | 0.8 | 148 | 0.8 | 0.321 | 13.0 | LOS A | 1.2 | 8.5 | 0.72 | 0.93 | 0.88 | 46.8 |
| Approach | | 244 | 2.3 | 257 | 2.3 | 0.321 | 10.6 | LOS A | 1.2 | 8.5 | 0.61 | 0.83 | 0.71 | 46.0 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 207 | 0.6 | 218 | 0.6 | 0.346 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.20 | 0.00 | 56.1 |
| 8 | T1 | 418 | 1.7 | 440 | 1.7 | 0.346 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.20 | 0.00 | 57.8 |
| Approach | | 625 | 1.3 | 658 | 1.3 | 0.346 | 2.0 | NA | 0.0 | 0.0 | 0.00 | 0.20 | 0.00 | 57.2 |
| All Vehicles | | 1231 | 1.7 | 1296 | 1.7 | 0.346 | 3.8 | NA | 1.2 | 8.5 | 0.20 | 0.29 | 0.22 | 54.8 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 4 [O'Connell Street/O'Connell Lane (Site Folder: 2031 STFM + W/O Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 17 | 0.0 | 18 | 0.0 | 0.359 | 6.1 | LOS A | 2.7 | 19.2 | 0.59 | 0.64 | 0.59 | 48.1 |
| 2 | T1 | 209 | 1.2 | 220 | 1.2 | 0.359 | 6.6 | LOS A | 2.7 | 19.2 | 0.59 | 0.64 | 0.59 | 49.0 |
| 3 | R2 | 130 | 0.0 | 137 | 0.0 | 0.359 | 10.0 | LOS A | 2.7 | 19.2 | 0.59 | 0.64 | 0.59 | 53.3 |
| Approach | | 356 | 0.7 | 375 | 0.7 | 0.359 | 7.8 | LOS A | 2.7 | 19.2 | 0.59 | 0.64 | 0.59 | 51.1 |
| East: O'Connell Street | | | | | | | | | | | | | | |
| 4 | L2 | 146 | 1.4 | 154 | 1.4 | 0.411 | 7.8 | LOS A | 3.0 | 21.5 | 0.73 | 0.77 | 0.73 | 51.9 |
| 5 | T1 | 13 | 0.0 | 14 | 0.0 | 0.411 | 8.0 | LOS A | 3.0 | 21.5 | 0.73 | 0.77 | 0.73 | 51.4 |
| 6 | R2 | 177 | 1.5 | 186 | 1.5 | 0.411 | 11.5 | LOS A | 3.0 | 21.5 | 0.73 | 0.77 | 0.73 | 50.8 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.411 | 13.2 | LOS A | 3.0 | 21.5 | 0.73 | 0.77 | 0.73 | 54.3 |
| Approach | | 338 | 1.4 | 356 | 1.4 | 0.411 | 9.8 | LOS A | 3.0 | 21.5 | 0.73 | 0.77 | 0.73 | 51.4 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 176 | 2.0 | 185 | 2.0 | 0.474 | 6.6 | LOS A | 3.9 | 27.9 | 0.61 | 0.62 | 0.61 | 51.7 |
| 8 | T1 | 293 | 1.3 | 308 | 1.3 | 0.474 | 6.7 | LOS A | 3.9 | 27.9 | 0.61 | 0.62 | 0.61 | 49.7 |
| 9 | R2 | 23 | 28.6 | 24 | 28.6 | 0.474 | 10.9 | LOS A | 3.9 | 27.9 | 0.61 | 0.62 | 0.61 | 40.7 |
| Approach | | 492 | 2.8 | 518 | 2.8 | 0.474 | 6.9 | LOS A | 3.9 | 27.9 | 0.61 | 0.62 | 0.61 | 50.3 |
| West: WSU Access | | | | | | | | | | | | | | |
| 10 | L2 | 16 | 0.0 | 17 | 0.0 | 0.120 | 8.3 | LOS A | 0.7 | 5.1 | 0.68 | 0.74 | 0.68 | 40.9 |
| 11 | T1 | 25 | 4.0 | 26 | 4.0 | 0.120 | 8.8 | LOS A | 0.7 | 5.1 | 0.68 | 0.74 | 0.68 | 50.8 |
| 12 | R2 | 45 | 0.0 | 47 | 0.0 | 0.120 | 11.9 | LOS A | 0.7 | 5.1 | 0.68 | 0.74 | 0.68 | 47.0 |
| Approach | | 86 | 1.2 | 91 | 1.2 | 0.120 | 10.3 | LOS A | 0.7 | 5.1 | 0.68 | 0.74 | 0.68 | 47.6 |
| All Vehicles | | 1272 | 1.7 | 1339 | 1.7 | 0.474 | 8.1 | LOS A | 3.9 | 27.9 | 0.64 | 0.67 | 0.64 | 50.7 |

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

# MOVEMENT SUMMARY

## Site: 5 [Cadda Ridge Drive/O'Connell Lane (Site Folder: 2031 STFM + W/O Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 1 | 4.0 | 1 | 4.0 | 0.016 | 5.9 | LOS A | 0.1 | 0.6 | 0.58 | 0.53 | 0.58 | 45.6 |
| 2 | T1 | 11 | 4.0 | 12 | 4.0 | 0.016 | 6.0 | LOS A | 0.1 | 0.6 | 0.58 | 0.53 | 0.58 | 46.2 |
| 3 | R2 | 1 | 4.0 | 1 | 4.0 | 0.016 | 9.7 | LOS A | 0.1 | 0.6 | 0.58 | 0.53 | 0.58 | 46.2 |
| Approach | | 13 | 4.0 | 14 | 4.0 | 0.016 | 6.3 | LOS A | 0.1 | 0.6 | 0.58 | 0.53 | 0.58 | 46.2 |
| East: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 4.0 | 1 | 4.0 | 0.241 | 4.9 | LOS A | 1.6 | 11.6 | 0.49 | 0.62 | 0.49 | 44.7 |
| 5 | T1 | 58 | 4.0 | 61 | 4.0 | 0.241 | 4.9 | LOS A | 1.6 | 11.6 | 0.49 | 0.62 | 0.49 | 45.6 |
| 6 | R2 | 182 | 4.0 | 192 | 4.0 | 0.241 | 8.6 | LOS A | 1.6 | 11.6 | 0.49 | 0.62 | 0.49 | 45.3 |
| Approach | | 241 | 4.0 | 254 | 4.0 | 0.241 | 7.7 | LOS A | 1.6 | 11.6 | 0.49 | 0.62 | 0.49 | 45.3 |
| North: O'Connell Lane | | | | | | | | | | | | | | |
| 7 | L2 | 296 | 4.0 | 312 | 4.0 | 0.412 | 4.6 | LOS A | 3.4 | 24.9 | 0.46 | 0.55 | 0.46 | 45.3 |
| 8 | T1 | 15 | 4.0 | 16 | 4.0 | 0.412 | 4.6 | LOS A | 3.4 | 24.9 | 0.46 | 0.55 | 0.46 | 46.2 |
| 9 | R2 | 170 | 4.0 | 179 | 4.0 | 0.412 | 8.1 | LOS A | 3.4 | 24.9 | 0.46 | 0.55 | 0.46 | 46.1 |
| Approach | | 481 | 4.0 | 506 | 4.0 | 0.412 | 5.8 | LOS A | 3.4 | 24.9 | 0.46 | 0.55 | 0.46 | 45.6 |
| West: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 10 | L2 | 161 | 4.0 | 169 | 4.0 | 0.279 | 5.0 | LOS A | 1.9 | 13.9 | 0.51 | 0.55 | 0.51 | 45.8 |
| 11 | T1 | 116 | 4.0 | 122 | 4.0 | 0.279 | 5.2 | LOS A | 1.9 | 13.9 | 0.51 | 0.55 | 0.51 | 46.9 |
| 12 | R2 | 1 | 4.0 | 1 | 4.0 | 0.279 | 8.7 | LOS A | 1.9 | 13.9 | 0.51 | 0.55 | 0.51 | 46.7 |
| Approach | | 278 | 4.0 | 293 | 4.0 | 0.279 | 5.1 | LOS A | 1.9 | 13.9 | 0.51 | 0.55 | 0.51 | 46.3 |
| All Vehicles | | 1013 | 4.0 | 1066 | 4.0 | 0.412 | 6.1 | LOS A | 3.4 | 24.9 | 0.49 | 0.57 | 0.49 | 45.7 |

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

# MOVEMENT SUMMARY

## Site: 6 [O'Connell St & Starline Dr (Site Folder: 2031 STFM + W/O Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Proposed Residential Development
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Starline Drive | | | | | | | | | | | | | | |
| 1 | L2 | 20 | 2.0 | 21 | 2.0 | 0.087 | 5.5 | LOS A | 0.3 | 2.1 | 0.46 | 0.69 | 0.46 | 42.8 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.087 | 7.8 | LOS A | 0.3 | 2.1 | 0.46 | 0.69 | 0.46 | 47.4 |
| 3 | R2 | 34 | 2.0 | 36 | 2.0 | 0.087 | 9.3 | LOS A | 0.3 | 2.1 | 0.46 | 0.69 | 0.46 | 44.4 |
| Approach | | 55 | 2.0 | 58 | 2.0 | 0.087 | 7.9 | LOS A | 0.3 | 2.1 | 0.46 | 0.69 | 0.46 | 44.0 |
| East: O'Connell St | | | | | | | | | | | | | | |
| 4 | L2 | 30 | 2.0 | 32 | 2.0 | 0.165 | 4.9 | LOS A | 0.1 | 0.7 | 0.04 | 0.07 | 0.04 | 49.1 |
| 5 | T1 | 258 | 2.0 | 272 | 2.0 | 0.165 | 0.1 | LOS A | 0.1 | 0.7 | 0.04 | 0.07 | 0.04 | 49.7 |
| 6 | R2 | 8 | 0.0 | 8 | 0.0 | 0.165 | 6.9 | LOS A | 0.1 | 0.7 | 0.04 | 0.07 | 0.04 | 51.8 |
| Approach | | 296 | 1.9 | 312 | 1.9 | 0.165 | 0.7 | NA | 0.1 | 0.7 | 0.04 | 0.07 | 0.04 | 49.7 |
| North: Site Access | | | | | | | | | | | | | | |
| 7 | L2 | 2 | 0.0 | 2 | 0.0 | 0.019 | 6.6 | LOS A | 0.1 | 0.4 | 0.50 | 0.70 | 0.50 | 52.3 |
| 8 | T1 | 1 | 0.0 | 1 | 0.0 | 0.019 | 7.6 | LOS A | 0.1 | 0.4 | 0.50 | 0.70 | 0.50 | 49.6 |
| 9 | R2 | 8 | 0.0 | 8 | 0.0 | 0.019 | 9.8 | LOS A | 0.1 | 0.4 | 0.50 | 0.70 | 0.50 | 49.5 |
| Approach | | 11 | 0.0 | 12 | 0.0 | 0.019 | 9.0 | LOS A | 0.1 | 0.4 | 0.50 | 0.70 | 0.50 | 50.1 |
| West: O'Connell St | | | | | | | | | | | | | | |
| 10 | L2 | 2 | 0.0 | 2 | 0.0 | 0.192 | 6.8 | LOS A | 0.2 | 1.3 | 0.06 | 0.03 | 0.06 | 53.2 |
| 11 | T1 | 323 | 2.0 | 340 | 2.0 | 0.192 | 0.1 | LOS A | 0.2 | 1.3 | 0.06 | 0.03 | 0.06 | 49.7 |
| 12 | R2 | 18 | 2.0 | 19 | 2.0 | 0.192 | 5.9 | LOS A | 0.2 | 1.3 | 0.06 | 0.03 | 0.06 | 48.1 |
| Approach | | 343 | 2.0 | 361 | 2.0 | 0.192 | 0.4 | NA | 0.2 | 1.3 | 0.06 | 0.03 | 0.06 | 49.6 |
| All Vehicles | | 705 | 1.9 | 742 | 1.9 | 0.192 | 1.3 | NA | 0.3 | 2.1 | 0.09 | 0.11 | 0.09 | 49.2 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 7 [Gipps Street/Sunflower Drive (Site Folder: 2031 STFM + W/O Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 151 | 4.0 | 159 | 4.0 | 0.574 | 21.5 | LOS B | 22.4 | 162.3 | 0.64 | 0.64 | 0.64 | 42.8 |
| 2 | T1 | 1120 | 4.0 | 1179 | 4.0 | 0.574 | 14.1 | LOS A | 22.9 | 166.0 | 0.64 | 0.60 | 0.64 | 58.4 |
| 3 | R2 | 4 | 4.0 | 4 | 4.0 | * 0.047 | 68.1 | LOS E | 0.2 | 1.8 | 0.97 | 0.64 | 0.97 | 26.3 |
| Approach | | 1275 | 4.0 | 1342 | 4.0 | 0.574 | 15.2 | LOS B | 22.9 | 166.0 | 0.64 | 0.61 | 0.64 | 56.6 |
| East: Fowler Street | | | | | | | | | | | | | | |
| 4 | L2 | 3 | 4.0 | 3 | 4.0 | 0.014 | 49.3 | LOS D | 0.2 | 1.5 | 0.86 | 0.62 | 0.86 | 30.3 |
| 5 | T1 | 1 | 4.0 | 1 | 4.0 | 0.014 | 44.7 | LOS D | 0.2 | 1.5 | 0.86 | 0.62 | 0.86 | 25.0 |
| 6 | R2 | 7 | 4.0 | 7 | 4.0 | 0.033 | 52.8 | LOS D | 0.4 | 2.7 | 0.89 | 0.66 | 0.89 | 31.3 |
| Approach | | 11 | 4.0 | 12 | 4.0 | 0.033 | 51.1 | LOS D | 0.4 | 2.7 | 0.88 | 0.65 | 0.88 | 30.6 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 9 | 4.0 | 9 | 4.0 | * 0.616 | 20.5 | LOS B | 25.5 | 184.8 | 0.64 | 0.59 | 0.64 | 49.7 |
| 8 | T1 | 1416 | 4.0 | 1491 | 4.0 | 0.616 | 13.5 | LOS A | 25.6 | 185.2 | 0.64 | 0.59 | 0.64 | 59.9 |
| 9 | R2 | 63 | 4.0 | 66 | 4.0 | 0.551 | 69.1 | LOS E | 4.0 | 29.0 | 1.00 | 0.76 | 1.02 | 23.0 |
| Approach | | 1488 | 4.0 | 1566 | 4.0 | 0.616 | 15.9 | LOS B | 25.6 | 185.2 | 0.66 | 0.60 | 0.66 | 56.9 |
| West: Sunflower Drive | | | | | | | | | | | | | | |
| 10 | L2 | 43 | 4.0 | 45 | 4.0 | 0.129 | 45.5 | LOS D | 2.3 | 16.6 | 0.84 | 0.72 | 0.84 | 28.5 |
| 11 | T1 | 3 | 4.0 | 3 | 4.0 | 0.129 | 40.9 | LOS C | 2.3 | 16.6 | 0.84 | 0.72 | 0.84 | 25.8 |
| 12 | R2 | 138 | 4.0 | 145 | 4.0 | * 0.610 | 56.4 | LOS D | 8.1 | 58.7 | 0.97 | 0.81 | 0.98 | 22.0 |
| Approach | | 184 | 4.0 | 194 | 4.0 | 0.610 | 53.6 | LOS D | 8.1 | 58.7 | 0.94 | 0.78 | 0.94 | 23.5 |
| All Vehicles | | 2958 | 4.0 | 3114 | 4.0 | 0.616 | 18.0 | LOS B | 25.6 | 185.2 | 0.67 | 0.61 | 0.67 | 53.4 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |
| East: Fowler Street | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 217.2 | 211.9 | 0.98 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |
| West: Sunflower Drive | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 217.2 | 211.9 | 0.98 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 220.5 | 216.2 | 0.98 |

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: 8 [Gipps St & Caddens Rd & Kent Rd (Site Folder: 2031 STFM + W/O Development PM)]

68-80 O'Connell Street, Kingswood
Site Category: Mixed-Use Development
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | | | |
| 1 | L2 | 258 | 1.2 | 272 | 1.2 | 0.856 | 41.7 | LOS C | 38.8 | 276.3 | 0.96 | 0.94 | 1.05 | 38.7 |
| 2 | T1 | 1129 | 2.4 | 1188 | 2.4 | * 0.856 | 34.5 | LOS C | 38.8 | 276.3 | 0.95 | 0.93 | 1.04 | 39.1 |
| 3 | R2 | 46 | 2.2 | 48 | 2.2 | 0.195 | 21.1 | LOS B | 1.0 | 7.1 | 0.72 | 0.73 | 0.72 | 44.0 |
| Approach | | 1433 | 2.1 | 1508 | 2.1 | 0.856 | 35.3 | LOS C | 38.8 | 276.3 | 0.95 | 0.93 | 1.04 | 39.2 |
| East: Caddens Road | | | | | | | | | | | | | | |
| 4 | L2 | 34 | 5.9 | 36 | 5.9 | 0.124 | 37.7 | LOS C | 2.4 | 17.9 | 0.80 | 0.68 | 0.80 | 36.9 |
| 5 | T1 | 22 | 9.1 | 23 | 9.1 | 0.124 | 33.1 | LOS C | 2.4 | 17.9 | 0.80 | 0.68 | 0.80 | 39.4 |
| 6 | R2 | 52 | 5.8 | 55 | 5.8 | 0.248 | 49.2 | LOS D | 2.6 | 19.4 | 0.91 | 0.75 | 0.91 | 33.8 |
| Approach | | 108 | 6.5 | 114 | 6.5 | 0.248 | 42.3 | LOS C | 2.6 | 19.4 | 0.85 | 0.71 | 0.85 | 36.1 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 84 | 2.4 | 88 | 2.4 | 0.649 | 25.7 | LOS B | 25.2 | 180.2 | 0.76 | 0.71 | 0.76 | 45.2 |
| 8 | T1 | 1202 | 2.6 | 1265 | 2.6 | 0.649 | 18.7 | LOS B | 25.3 | 181.4 | 0.76 | 0.70 | 0.76 | 51.1 |
| 9 | R2 | 223 | 1.0 | 235 | 1.0 | * 0.661 | 36.1 | LOS C | 7.3 | 51.4 | 0.98 | 0.87 | 0.99 | 39.7 |
| Approach | | 1509 | 2.3 | 1588 | 2.3 | 0.661 | 21.7 | LOS B | 25.3 | 181.4 | 0.79 | 0.72 | 0.79 | 47.4 |
| West: Caddens Road | | | | | | | | | | | | | | |
| 10 | L2 | 121 | 1.6 | 127 | 1.6 | 0.460 | 38.4 | LOS C | 7.6 | 54.0 | 0.84 | 0.75 | 0.84 | 38.4 |
| 11 | T1 | 47 | 4.3 | 49 | 4.3 | 0.460 | 33.9 | LOS C | 7.6 | 54.0 | 0.84 | 0.75 | 0.84 | 39.1 |
| 12 | R2 | 202 | 1.5 | 213 | 1.5 | * 0.882 | 63.3 | LOS E | 12.9 | 91.6 | 0.97 | 1.02 | 1.37 | 31.4 |
| Approach | | 370 | 1.9 | 389 | 1.9 | 0.882 | 51.4 | LOS D | 12.9 | 91.6 | 0.91 | 0.90 | 1.13 | 34.5 |
| All Vehicles | | 3420 | 2.3 | 3600 | 2.3 | 0.882 | 31.3 | LOS C | 38.8 | 276.3 | 0.87 | 0.83 | 0.93 | 41.0 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | |
| P1 | Full | 50 | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 219.2 | 220.9 | 1.01 |
| East: Caddens Road | | | | | | | | | | | | |
| P2 | Full | 50 | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 212.3 | 211.9 | 1.00 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 50 | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 219.0 | 220.6 | 1.01 |
| West: Caddens Road | | | | | | | | | | | | |
| P4 | Full | 50 | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 212.3 | 211.9 | 1.00 |
| All Pedestrians | | 200 | 211 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 215.7 | 216.3 | 1.00 |

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

# MOVEMENT SUMMARY

## Site: 1 [Great Western Highway/O'Connell Street (Site Folder: 2031 STFM + Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 1 | L2 | 116 | 0.0 | 122 | 0.0 | 0.229 | 35.9 | LOS C | 6.0 | 42.3 | 0.75 | 0.73 | 0.75 | 37.4 |
| 2 | T1 | 25 | 4.0 | 26 | 4.0 | 0.885 | 30.7 | LOS C | 16.7 | 120.5 | 0.76 | 0.74 | 0.77 | 32.1 |
| 3 | R2 | 236 | 3.5 | 248 | 3.5 | * 0.885 | 67.1 | LOS E | 16.7 | 120.5 | 0.99 | 1.03 | 1.33 | 29.0 |
| Approach | | 377 | 2.4 | 397 | 2.4 | 0.885 | 55.1 | LOS D | 16.7 | 120.5 | 0.90 | 0.91 | 1.11 | 31.3 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 250 | 2.8 | 263 | 2.8 | 0.327 | 29.3 | LOS C | 9.9 | 71.2 | 0.70 | 0.77 | 0.70 | 39.2 |
| 5 | T1 | 1384 | 1.6 | 1457 | 1.6 | * 0.883 | 41.6 | LOS C | 45.2 | 320.9 | 0.97 | 0.98 | 1.09 | 35.7 |
| 6 | R2 | 58 | 0.0 | 61 | 0.0 | 0.277 | 21.9 | LOS B | 1.5 | 10.5 | 0.74 | 0.73 | 0.74 | 37.7 |
| Approach | | 1692 | 1.7 | 1781 | 1.7 | 0.883 | 39.1 | LOS C | 45.2 | 320.9 | 0.92 | 0.94 | 1.02 | 36.3 |
| North: French Street | | | | | | | | | | | | | | |
| 7 | L2 | 36 | 2.8 | 38 | 2.8 | 0.072 | 35.1 | LOS C | 1.7 | 12.3 | 0.71 | 0.70 | 0.71 | 32.3 |
| 8 | T1 | 36 | 0.0 | 38 | 0.0 | 0.251 | 39.4 | LOS C | 4.1 | 28.9 | 0.82 | 0.74 | 0.82 | 30.3 |
| 9 | R2 | 52 | 0.0 | 55 | 0.0 | 0.251 | 45.6 | LOS D | 4.1 | 28.9 | 0.85 | 0.74 | 0.85 | 28.7 |
| Approach | | 124 | 0.8 | 131 | 0.8 | 0.251 | 40.8 | LOS C | 4.1 | 28.9 | 0.80 | 0.73 | 0.80 | 30.2 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 10 | L2 | 13 | 0.0 | 14 | 0.0 | 0.724 | 23.9 | LOS B | 13.9 | 98.5 | 0.64 | 0.57 | 0.65 | 39.5 |
| 11 | T1 | 1401 | 1.3 | 1475 | 1.3 | 0.760 | 20.6 | LOS B | 25.3 | 179.2 | 0.70 | 0.63 | 0.71 | 45.0 |
| 12 | R2 | 198 | 2.4 | 208 | 2.4 | * 0.657 | 39.7 | LOS C | 7.3 | 52.4 | 0.99 | 0.88 | 1.00 | 35.8 |
| Approach | | 1612 | 1.4 | 1697 | 1.4 | 0.760 | 22.9 | LOS B | 25.3 | 179.2 | 0.73 | 0.66 | 0.74 | 43.4 |
| All Vehicles | | 3805 | 1.6 | 4005 | 1.6 | 0.885 | 33.9 | LOS C | 45.2 | 320.9 | 0.84 | 0.81 | 0.91 | 38.1 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: Great Western Highway | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All Pedestrians | 10 | 11 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.9 | 227.1 | 0.99 |

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


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# MOVEMENT SUMMARY

## Site: 2 [Great Western Highway/Gipps Street (Site Folder: 2031 STFM + Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 663 | 5.0 | 698 | 5.0 | 0.591 | 23.6 | LOS B | 22.5 | 164.1 | 0.61 | 0.80 | 0.61 | 49.2 |
| 3 | R2 | 714 | 5.3 | 752 | 5.3 | * 0.933 | 78.2 | LOS F | 27.1 | 198.5 | 1.00 | 1.00 | 1.38 | 20.7 |
| Approach | | 1377 | 5.2 | 1449 | 5.2 | 0.933 | 51.9 | LOS D | 27.1 | 198.5 | 0.81 | 0.90 | 1.01 | 30.4 |
| East: Great Western Highway | | | | | | | | | | | | | | |
| 4 | L2 | 634 | 3.0 | 667 | 3.0 | 0.910 | 50.1 | LOS D | 38.9 | 279.4 | 0.83 | 0.93 | 1.03 | 28.0 |
| 5 | T1 | 1175 | 1.9 | 1237 | 1.9 | * 0.926 | 67.9 | LOS E | 30.3 | 215.4 | 1.00 | 1.06 | 1.34 | 28.5 |
| Approach | | 1809 | 2.3 | 1904 | 2.3 | 0.926 | 61.6 | LOS E | 38.9 | 279.4 | 0.94 | 1.01 | 1.23 | 28.4 |
| West: Great Western Highway | | | | | | | | | | | | | | |
| 11 | T1 | 1095 | 1.9 | 1153 | 1.9 | 0.296 | 8.3 | LOS A | 8.9 | 63.5 | 0.44 | 0.38 | 0.44 | 65.3 |
| 12 | R2 | 590 | 3.5 | 621 | 3.5 | * 0.944 | 70.8 | LOS F | 45.0 | 324.5 | 1.00 | 1.01 | 1.32 | 26.9 |
| Approach | | 1685 | 2.5 | 1774 | 2.5 | 0.944 | 30.2 | LOS C | 45.0 | 324.5 | 0.63 | 0.60 | 0.74 | 43.3 |
| All Vehicles | | 4871 | 3.2 | 5127 | 3.2 | 0.944 | 48.0 | LOS D | 45.0 | 324.5 | 0.80 | 0.84 | 1.00 | 33.2 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 219.8 | 215.3 | 0.98 |
| P1B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| East: Great Western Highway | | | | | | | | | | | | |
| P2B | Slip/ Bypass | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 211.3 | 204.3 | 0.97 |
| West: Great Western Highway | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 230.0 | 228.6 | 0.99 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.1 | 213.1 | 0.98 |

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: 3 [O'Connell Street/Corr Road (Site Folder: 2031 STFM + Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Street | | | | | | | | | | | | | | |
| 2 | T1 | 309 | 1.7 | 325 | 1.7 | 0.241 | 1.4 | LOS A | 0.9 | 6.6 | 0.28 | 0.11 | 0.30 | 57.1 |
| 3 | R2 | 53 | 2.5 | 56 | 2.5 | 0.241 | 10.2 | LOS A | 0.9 | 6.6 | 0.28 | 0.11 | 0.30 | 50.3 |
| Approach | | 362 | 1.8 | 381 | 1.8 | 0.241 | 2.7 | NA | 0.9 | 6.6 | 0.28 | 0.11 | 0.30 | 56.5 |
| East: Corr Road | | | | | | | | | | | | | | |
| 4 | L2 | 103 | 4.4 | 108 | 4.4 | 0.105 | 7.4 | LOS A | 0.4 | 3.0 | 0.46 | 0.68 | 0.46 | 43.8 |
| 6 | R2 | 167 | 0.8 | 176 | 0.8 | 0.396 | 14.1 | LOS A | 1.6 | 11.2 | 0.76 | 0.97 | 1.01 | 46.0 |
| Approach | | 270 | 2.2 | 284 | 2.2 | 0.396 | 11.6 | LOS A | 1.6 | 11.2 | 0.65 | 0.86 | 0.80 | 45.5 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 258 | 0.6 | 272 | 0.6 | 0.375 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.23 | 0.00 | 55.8 |
| 8 | T1 | 418 | 1.7 | 440 | 1.7 | 0.375 | 0.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.23 | 0.00 | 57.5 |
| Approach | | 676 | 1.3 | 712 | 1.3 | 0.375 | 2.3 | NA | 0.0 | 0.0 | 0.00 | 0.23 | 0.00 | 56.8 |
| All Vehicles | | 1308 | 1.6 | 1377 | 1.6 | 0.396 | 4.3 | NA | 1.6 | 11.2 | 0.21 | 0.32 | 0.25 | 54.3 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 4 [O'Connell Street/O'Connell Lane (Site Folder: 2031 STFM + Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 17 | 0.0 | 18 | 0.0 | 0.407 | 6.2 | LOS A | 3.3 | 22.9 | 0.61 | 0.66 | 0.61 | 47.9 |
| 2 | T1 | 209 | 1.2 | 220 | 1.2 | 0.407 | 6.7 | LOS A | 3.3 | 22.9 | 0.61 | 0.66 | 0.61 | 48.7 |
| 3 | R2 | 181 | 0.0 | 191 | 0.0 | 0.407 | 10.0 | LOS A | 3.3 | 22.9 | 0.61 | 0.66 | 0.61 | 53.1 |
| Approach | | 407 | 0.6 | 428 | 0.6 | 0.407 | 8.1 | LOS A | 3.3 | 22.9 | 0.61 | 0.66 | 0.61 | 51.2 |
| East: O'Connell Street | | | | | | | | | | | | | | |
| 4 | L2 | 172 | 1.4 | 181 | 1.4 | 0.446 | 7.9 | LOS A | 3.4 | 24.2 | 0.75 | 0.78 | 0.75 | 51.9 |
| 5 | T1 | 13 | 0.0 | 14 | 0.0 | 0.446 | 8.1 | LOS A | 3.4 | 24.2 | 0.75 | 0.78 | 0.75 | 51.4 |
| 6 | R2 | 177 | 1.5 | 186 | 1.5 | 0.446 | 11.6 | LOS A | 3.4 | 24.2 | 0.75 | 0.78 | 0.75 | 50.8 |
| 6u | U | 2 | 0.0 | 2 | 0.0 | 0.446 | 13.3 | LOS A | 3.4 | 24.2 | 0.75 | 0.78 | 0.75 | 54.3 |
| Approach | | 364 | 1.4 | 383 | 1.4 | 0.446 | 9.8 | LOS A | 3.4 | 24.2 | 0.75 | 0.78 | 0.75 | 51.4 |
| North: O'Connell Street | | | | | | | | | | | | | | |
| 7 | L2 | 176 | 2.0 | 185 | 2.0 | 0.508 | 7.2 | LOS A | 4.2 | 30.4 | 0.69 | 0.68 | 0.69 | 51.5 |
| 8 | T1 | 293 | 1.3 | 308 | 1.3 | 0.508 | 7.3 | LOS A | 4.2 | 30.4 | 0.69 | 0.68 | 0.69 | 49.3 |
| 9 | R2 | 23 | 28.6 | 24 | 28.6 | 0.508 | 11.7 | LOS A | 4.2 | 30.4 | 0.69 | 0.68 | 0.69 | 40.3 |
| Approach | | 492 | 2.8 | 518 | 2.8 | 0.508 | 7.4 | LOS A | 4.2 | 30.4 | 0.69 | 0.68 | 0.69 | 50.0 |
| West: WSU Access | | | | | | | | | | | | | | |
| 10 | L2 | 16 | 0.0 | 17 | 0.0 | 0.127 | 8.8 | LOS A | 0.8 | 5.5 | 0.72 | 0.76 | 0.72 | 40.4 |
| 11 | T1 | 25 | 4.0 | 26 | 4.0 | 0.127 | 9.3 | LOS A | 0.8 | 5.5 | 0.72 | 0.76 | 0.72 | 50.4 |
| 12 | R2 | 45 | 0.0 | 47 | 0.0 | 0.127 | 12.4 | LOS A | 0.8 | 5.5 | 0.72 | 0.76 | 0.72 | 46.5 |
| Approach | | 86 | 1.2 | 91 | 1.2 | 0.127 | 10.8 | LOS A | 0.8 | 5.5 | 0.72 | 0.76 | 0.72 | 47.2 |
| All Vehicles | | 1349 | 1.7 | 1420 | 1.7 | 0.508 | 8.5 | LOS A | 4.2 | 30.4 | 0.68 | 0.70 | 0.68 | 50.7 |

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

# MOVEMENT SUMMARY

## Site: 5 [Cadda Ridge Drive/O'Connell Lane (Site Folder: 2031 STFM + Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: O'Connell Lane | | | | | | | | | | | | | | |
| 1 | L2 | 1 | 4.0 | 1 | 4.0 | 0.017 | 6.1 | LOS A | 0.1 | 0.7 | 0.60 | 0.54 | 0.60 | 45.5 |
| 2 | T1 | 11 | 4.0 | 12 | 4.0 | 0.017 | 6.3 | LOS A | 0.1 | 0.7 | 0.60 | 0.54 | 0.60 | 46.1 |
| 3 | R2 | 1 | 4.0 | 1 | 4.0 | 0.017 | 10.0 | LOS A | 0.1 | 0.7 | 0.60 | 0.54 | 0.60 | 46.2 |
| Approach | | 13 | 4.0 | 14 | 4.0 | 0.017 | 6.6 | LOS A | 0.1 | 0.7 | 0.60 | 0.54 | 0.60 | 46.1 |
| East: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 4.0 | 1 | 4.0 | 0.263 | 5.0 | LOS A | 1.8 | 12.9 | 0.52 | 0.63 | 0.52 | 44.6 |
| 5 | T1 | 58 | 4.0 | 61 | 4.0 | 0.263 | 5.1 | LOS A | 1.8 | 12.9 | 0.52 | 0.63 | 0.52 | 45.5 |
| 6 | R2 | 199 | 4.0 | 209 | 4.0 | 0.263 | 8.8 | LOS A | 1.8 | 12.9 | 0.52 | 0.63 | 0.52 | 45.2 |
| Approach | | 258 | 4.0 | 272 | 4.0 | 0.263 | 7.9 | LOS A | 1.8 | 12.9 | 0.52 | 0.63 | 0.52 | 45.2 |
| North: O'Connell Lane | | | | | | | | | | | | | | |
| 7 | L2 | 305 | 4.0 | 321 | 4.0 | 0.433 | 4.6 | LOS A | 3.7 | 27.0 | 0.48 | 0.55 | 0.48 | 45.3 |
| 8 | T1 | 15 | 4.0 | 16 | 4.0 | 0.433 | 4.6 | LOS A | 3.7 | 27.0 | 0.48 | 0.55 | 0.48 | 46.2 |
| 9 | R2 | 187 | 4.0 | 197 | 4.0 | 0.433 | 8.1 | LOS A | 3.7 | 27.0 | 0.48 | 0.55 | 0.48 | 46.1 |
| Approach | | 507 | 4.0 | 534 | 4.0 | 0.433 | 5.9 | LOS A | 3.7 | 27.0 | 0.48 | 0.55 | 0.48 | 45.6 |
| West: Cadda Ridge Drive | | | | | | | | | | | | | | |
| 10 | L2 | 195 | 4.0 | 205 | 4.0 | 0.319 | 5.2 | LOS A | 2.3 | 16.4 | 0.55 | 0.58 | 0.55 | 45.7 |
| 11 | T1 | 116 | 4.0 | 122 | 4.0 | 0.319 | 5.4 | LOS A | 2.3 | 16.4 | 0.55 | 0.58 | 0.55 | 46.8 |
| 12 | R2 | 1 | 4.0 | 1 | 4.0 | 0.319 | 8.9 | LOS A | 2.3 | 16.4 | 0.55 | 0.58 | 0.55 | 46.6 |
| Approach | | 312 | 4.0 | 328 | 4.0 | 0.319 | 5.3 | LOS A | 2.3 | 16.4 | 0.55 | 0.58 | 0.55 | 46.1 |
| All Vehicles | | 1090 | 4.0 | 1147 | 4.0 | 0.433 | 6.2 | LOS A | 3.7 | 27.0 | 0.51 | 0.58 | 0.51 | 45.7 |

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

# MOVEMENT SUMMARY

## Site: 6 [O'Connell St & Starline Dr (Site Folder: 2031 STFM + Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Proposed Residential Development
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Starline Drive | | | | | | | | | | | | | | |
| 1 | L2 | 20 | 2.0 | 21 | 2.0 | 0.149 | 5.5 | LOS A | 0.5 | 3.7 | 0.52 | 0.74 | 0.52 | 43.5 |
| 2 | T1 | 34 | 0.0 | 36 | 0.0 | 0.149 | 8.6 | LOS A | 0.5 | 3.7 | 0.52 | 0.74 | 0.52 | 48.1 |
| 3 | R2 | 34 | 2.0 | 36 | 2.0 | 0.149 | 10.0 | LOS A | 0.5 | 3.7 | 0.52 | 0.74 | 0.52 | 44.9 |
| Approach | | 88 | 1.2 | 93 | 1.2 | 0.149 | 8.5 | LOS A | 0.5 | 3.7 | 0.52 | 0.74 | 0.52 | 45.7 |
| East: O'Connell St | | | | | | | | | | | | | | |
| 4 | L2 | 30 | 2.0 | 32 | 2.0 | 0.180 | 5.5 | LOS A | 0.3 | 2.3 | 0.12 | 0.10 | 0.12 | 49.0 |
| 5 | T1 | 258 | 2.0 | 272 | 2.0 | 0.180 | 0.2 | LOS A | 0.3 | 2.3 | 0.12 | 0.10 | 0.12 | 49.6 |
| 6 | R2 | 25 | 0.0 | 26 | 0.0 | 0.180 | 7.2 | LOS A | 0.3 | 2.3 | 0.12 | 0.10 | 0.12 | 51.7 |
| Approach | | 313 | 1.8 | 329 | 1.8 | 0.180 | 1.3 | NA | 0.3 | 2.3 | 0.12 | 0.10 | 0.12 | 49.7 |
| North: Site Access | | | | | | | | | | | | | | |
| 7 | L2 | 11 | 0.0 | 12 | 0.0 | 0.114 | 6.7 | LOS A | 0.4 | 2.7 | 0.54 | 0.78 | 0.54 | 52.0 |
| 8 | T1 | 17 | 0.0 | 18 | 0.0 | 0.114 | 8.4 | LOS A | 0.4 | 2.7 | 0.54 | 0.78 | 0.54 | 49.1 |
| 9 | R2 | 34 | 0.0 | 36 | 0.0 | 0.114 | 11.0 | LOS A | 0.4 | 2.7 | 0.54 | 0.78 | 0.54 | 49.1 |
| Approach | | 62 | 0.0 | 65 | 0.0 | 0.114 | 9.5 | LOS A | 0.4 | 2.7 | 0.54 | 0.78 | 0.54 | 49.7 |
| West: O'Connell St | | | | | | | | | | | | | | |
| 10 | L2 | 53 | 0.0 | 56 | 0.0 | 0.221 | 5.9 | LOS A | 0.2 | 1.7 | 0.07 | 0.10 | 0.07 | 53.1 |
| 11 | T1 | 323 | 2.0 | 340 | 2.0 | 0.221 | 0.1 | LOS A | 0.2 | 1.7 | 0.07 | 0.10 | 0.07 | 49.6 |
| 12 | R2 | 18 | 2.0 | 19 | 2.0 | 0.221 | 5.9 | LOS A | 0.2 | 1.7 | 0.07 | 0.10 | 0.07 | 48.0 |
| Approach | | 394 | 1.7 | 415 | 1.7 | 0.221 | 1.2 | NA | 0.2 | 1.7 | 0.07 | 0.10 | 0.07 | 49.9 |
| All Vehicles | | 857 | 1.6 | 902 | 1.6 | 0.221 | 2.6 | NA | 0.5 | 3.7 | 0.17 | 0.21 | 0.17 | 49.4 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 7 [Gipps Street/Sunflower Drive (Site Folder: 2031 STFM + Development PM)]

80 O'Connell St, Caddens NSW
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | | | |
| 1 | L2 | 151 | 4.0 | 159 | 4.0 | 0.590 | 22.8 | LOS B | 23.4 | 169.4 | 0.67 | 0.66 | 0.67 | 41.6 |
| 2 | T1 | 1120 | 4.0 | 1179 | 4.0 | 0.590 | 15.4 | LOS B | 24.0 | 173.6 | 0.66 | 0.63 | 0.66 | 57.1 |
| 3 | R2 | 4 | 4.0 | 4 | 4.0 | * 0.047 | 68.1 | LOS E | 0.2 | 1.8 | 0.97 | 0.64 | 0.97 | 26.3 |
| Approach | | 1275 | 4.0 | 1342 | 4.0 | 0.590 | 16.5 | LOS B | 24.0 | 173.6 | 0.67 | 0.63 | 0.67 | 55.3 |
| East: Fowler Street | | | | | | | | | | | | | | |
| 4 | L2 | 3 | 4.0 | 3 | 4.0 | 0.014 | 49.3 | LOS D | 0.2 | 1.5 | 0.86 | 0.62 | 0.86 | 30.3 |
| 5 | T1 | 1 | 4.0 | 1 | 4.0 | 0.014 | 44.7 | LOS D | 0.2 | 1.5 | 0.86 | 0.62 | 0.86 | 25.0 |
| 6 | R2 | 7 | 4.0 | 7 | 4.0 | 0.034 | 53.8 | LOS D | 0.4 | 2.7 | 0.90 | 0.66 | 0.90 | 31.1 |
| Approach | | 11 | 4.0 | 12 | 4.0 | 0.034 | 51.7 | LOS D | 0.4 | 2.7 | 0.88 | 0.65 | 0.88 | 30.4 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 9 | 4.0 | 9 | 4.0 | * 0.616 | 20.5 | LOS B | 25.5 | 184.8 | 0.64 | 0.59 | 0.64 | 49.7 |
| 8 | T1 | 1416 | 4.0 | 1491 | 4.0 | 0.616 | 13.5 | LOS A | 25.6 | 185.2 | 0.64 | 0.59 | 0.64 | 59.9 |
| 9 | R2 | 80 | 4.0 | 84 | 4.0 | 0.560 | 66.9 | LOS E | 5.0 | 36.1 | 1.00 | 0.78 | 1.01 | 23.5 |
| Approach | | 1505 | 4.0 | 1584 | 4.0 | 0.616 | 16.3 | LOS B | 25.6 | 185.2 | 0.66 | 0.60 | 0.66 | 56.3 |
| West: Sunflower Drive | | | | | | | | | | | | | | |
| 10 | L2 | 52 | 4.0 | 55 | 4.0 | 0.144 | 43.9 | LOS D | 2.7 | 19.5 | 0.83 | 0.73 | 0.83 | 29.0 |
| 11 | T1 | 3 | 4.0 | 3 | 4.0 | 0.144 | 39.3 | LOS C | 2.7 | 19.5 | 0.83 | 0.73 | 0.83 | 26.2 |
| 12 | R2 | 138 | 4.0 | 145 | 4.0 | * 0.620 | 56.5 | LOS D | 8.1 | 58.8 | 0.97 | 0.81 | 0.99 | 21.9 |
| Approach | | 193 | 4.0 | 203 | 4.0 | 0.620 | 52.8 | LOS D | 8.1 | 58.8 | 0.93 | 0.79 | 0.94 | 23.8 |
| All Vehicles | | 2984 | 4.0 | 3141 | 4.0 | 0.620 | 18.9 | LOS B | 25.6 | 185.2 | 0.68 | 0.63 | 0.68 | 52.6 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Gipps Street | | | | | | | | | | | | |
| P1 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |
| East: Fowler Street | | | | | | | | | | | | |
| P2 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 217.2 | 211.9 | 0.98 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |
| West: Sunflower Drive | | | | | | | | | | | | |
| P4 | Full | 5 | 5 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 217.2 | 211.9 | 0.98 |
| All Pedestrians | | 20 | 21 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 220.5 | 216.2 | 0.98 |

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: 8 [Gipps St & Caddens Rd & Kent Rd (Site Folder: 2031 STFM + Development PM)]

68-80 O'Connell Street, Kingswood
Site Category: Mixed-Use Development
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | | | |
| 1 | L2 | 309 | 1.1 | 325 | 1.1 | 0.905 | 51.1 | LOS D | 45.8 | 325.4 | 1.00 | 1.02 | 1.18 | 35.9 |
| 2 | T1 | 1129 | 2.2 | 1188 | 2.2 | * 0.905 | 43.9 | LOS D | 45.8 | 325.4 | 0.99 | 1.02 | 1.18 | 34.4 |
| 3 | R2 | 46 | 2.2 | 48 | 2.2 | 0.201 | 22.3 | LOS B | 1.0 | 7.5 | 0.75 | 0.74 | 0.75 | 43.4 |
| Approach | | 1484 | 2.0 | 1562 | 2.0 | 0.905 | 44.8 | LOS D | 45.8 | 325.4 | 0.98 | 1.02 | 1.16 | 35.1 |
| East: Caddens Road | | | | | | | | | | | | | | |
| 4 | L2 | 34 | 5.9 | 36 | 5.9 | 0.116 | 36.1 | LOS C | 2.3 | 17.4 | 0.78 | 0.67 | 0.78 | 37.5 |
| 5 | T1 | 22 | 9.1 | 23 | 9.1 | 0.116 | 31.4 | LOS C | 2.3 | 17.4 | 0.78 | 0.67 | 0.78 | 39.8 |
| 6 | R2 | 52 | 5.8 | 55 | 5.8 | 0.225 | 47.1 | LOS D | 2.6 | 18.9 | 0.89 | 0.75 | 0.89 | 34.4 |
| Approach | | 108 | 6.5 | 114 | 6.5 | 0.225 | 40.4 | LOS C | 2.6 | 18.9 | 0.83 | 0.71 | 0.83 | 36.6 |
| North: Gipps Street | | | | | | | | | | | | | | |
| 7 | L2 | 84 | 2.4 | 88 | 2.4 | 0.671 | 27.3 | LOS B | 26.2 | 187.5 | 0.79 | 0.73 | 0.79 | 44.5 |
| 8 | T1 | 1202 | 2.5 | 1265 | 2.5 | 0.671 | 20.3 | LOS B | 26.4 | 188.7 | 0.79 | 0.72 | 0.79 | 49.7 |
| 9 | R2 | 223 | 1.0 | 235 | 1.0 | * 0.714 | 40.8 | LOS C | 8.1 | 56.9 | 0.99 | 0.89 | 1.06 | 38.3 |
| Approach | | 1509 | 2.3 | 1588 | 2.3 | 0.714 | 23.7 | LOS B | 26.4 | 188.7 | 0.82 | 0.75 | 0.83 | 46.0 |
| West: Caddens Road | | | | | | | | | | | | | | |
| 10 | L2 | 121 | 1.6 | 127 | 1.6 | 0.436 | 36.7 | LOS C | 7.4 | 52.5 | 0.82 | 0.74 | 0.82 | 38.9 |
| 11 | T1 | 47 | 4.3 | 49 | 4.3 | 0.436 | 32.1 | LOS C | 7.4 | 52.5 | 0.82 | 0.74 | 0.82 | 39.5 |
| 12 | R2 | 228 | 1.4 | 240 | 1.4 | * 0.925 | 71.8 | LOS F | 15.8 | 112.2 | 0.98 | 1.08 | 1.48 | 29.8 |
| Approach | | 396 | 1.8 | 417 | 1.8 | 0.925 | 56.4 | LOS D | 15.8 | 112.2 | 0.91 | 0.94 | 1.20 | 33.4 |
| All Vehicles | | 3497 | 2.2 | 3681 | 2.2 | 0.925 | 36.8 | LOS C | 45.8 | 325.4 | 0.90 | 0.88 | 1.01 | 38.5 |

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

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Input Vol. ped/h | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Kent Road | | | | | | | | | | | | |
| P1 | Full | 50 | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 219.2 | 220.9 | 1.01 |
| East: Caddens Road | | | | | | | | | | | | |
| P2 | Full | 50 | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 212.3 | 211.9 | 1.00 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North: Gipps Street | | | | | | | | | | | | |
| P3 | Full | 50 | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 219.0 | 220.6 | 1.01 |
| West: Caddens Road | | | | | | | | | | | | |
| P4 | Full | 50 | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 212.3 | 211.9 | 1.00 |
| All Pedestrians | | 200 | 211 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | 215.7 | 216.3 | 1.00 |

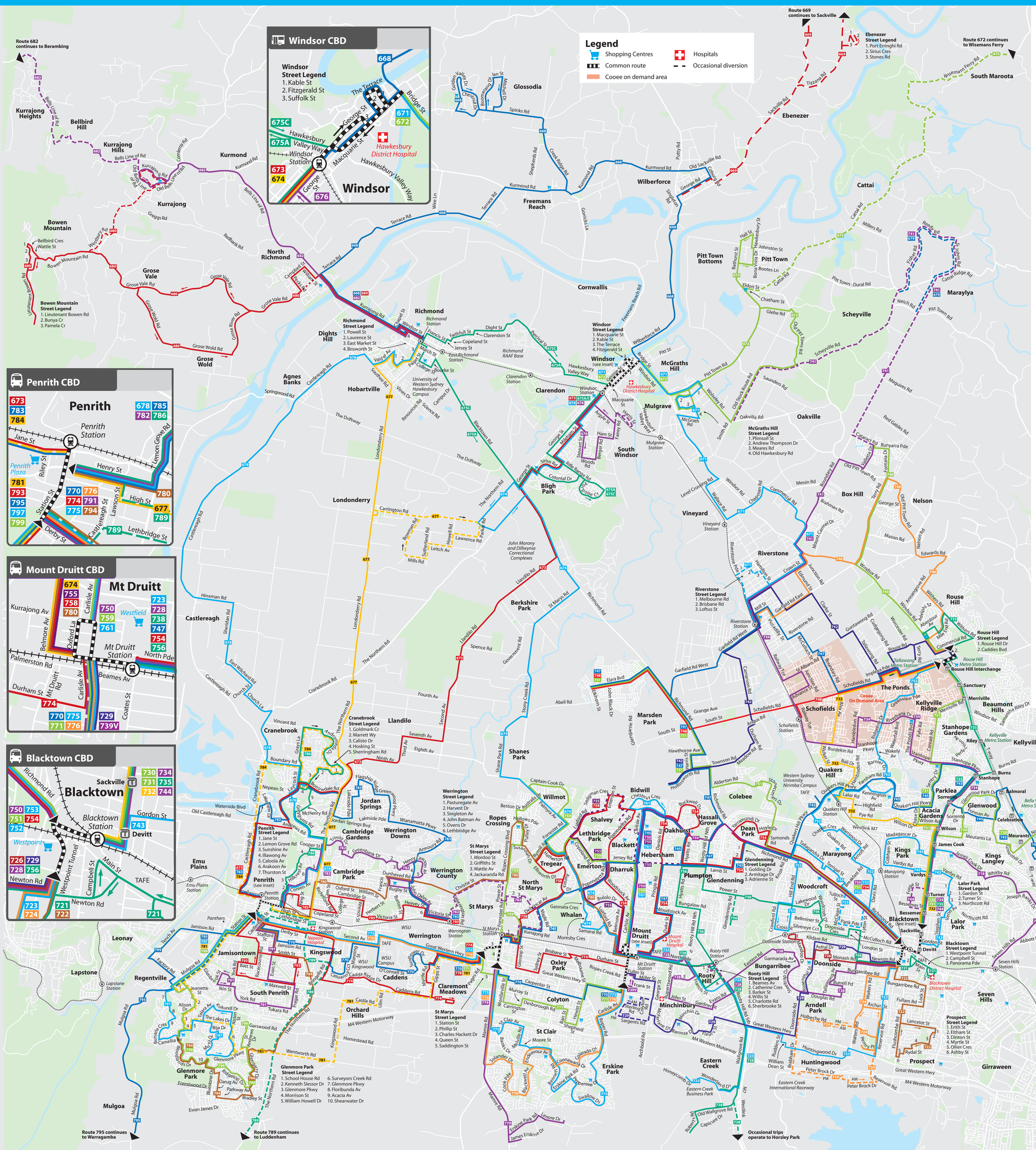
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

# Appendix E
# Transport Services

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

# Greater Western Sydney Bus Network Map - Effective: 18 April 2021

Busways




## Bus routes

| | |
|---|---|
| 668 | Windsor to Richmond via Wilberforce, Glossodia & North Richmond |
| 669 | Wilberforce to Sackville |
| 671 | Windsor to Riverstone via McGraths Hill |
| 672 | Windsor to Pitt Town & Wisemans Ferry via McGraths Hill |
| 673 | Windsor to Penrith via Bligh Park, Llandilo & Cranebrook |
| 674 | Windsor to Mt Druitt via Bligh Park, Shanes Park & Whalan |
| 675C | Windsor - RAAF -Richmond - UWS Hawkesbury - Bligh Park - Windsor |
| 675A | Windsor - Bligh Park - UWS Hawkesbury - Richmond - RAAF - Windsor |
| 676 | Windsor to South Windsor |
| 677 | Richmond to Penrith via Londonderry & The Northern Rds |
| 668 | Richmond to Penrith via Agnes Banks, Castlereagh & Cranebrook |
| 679 | Windsor to Maraylya & Oakville |
| 680 | Richmond to Bowen Mtn via Nth Richmond, Grose Wold & Grose Vale |
| 682 | Richmond to Kurrajong & Berambing via Nth Richmond & Kurmond |
| 718 | Seven Hills to Kings Langley |
| 721 | Blacktown to Blacktown Hospital |
| 722 | Blacktown to Prospect via Flushcombe Rd |
| 723 | Blacktown to Mt Druitt via Huntingwood & Eastern Creek |
| 724 | Blacktown to Arndell Park & Eastern Creek Industrial |
| 726 | Blacktown to Doonside via Monash Rd |
| 728 | Blacktown to Mt Druitt via Bungarribee & Rooty Hill |
| 729 | Blacktown to Mt Druitt via Kildare Rd & Minchinbury |
| 730 | Blacktown to Castle Hill via Glenwood & Norwest Business Park |
| 731 | Blacktown to Rouse Hill via Stanhope Gardens & Kellyville Ridge |
| 732 | Blacktown to Rouse Hill via Pye Rd & The Ponds |
| 734 | Blacktown to Riverstone via The Ponds & Schofields |
| 735 | Blacktown to Rouse Hill via T-way |
| 738 | Mt Druitt to Eastern Creek Business Park via Rooty Hill |
| 739V | Mt Druitt to Frank St |
| 740 | Rouse Hill to Box Hill via Windsor Rd |
| 741 | Riverstone to Oakville via Box Hill |
| 742 | Rouse Hill to Marsden Park (Hollinsworth Rd) via Riverstone |
| 743 | Blacktown to Kings Langley via Kings Park |
| 744 | Blacktown to Bessemer St Industrial |
| 745 | St Marys to Bella Vista via Plumpton & Glenwood |
| 746 | Rouse Hill to Riverstone via Box Hill |
| 747 | Mt Druitt to Rouse Hill via Marsden Park (Elara Estate) & Riverstone |
| 748 | Rouse Hill to Marsden Park (Elara Estate) via Schofields |
| 750 | Blacktown to Mt Druitt via Richmond Rd & Carlisle Av |
| 751 | Blacktown to Marsden Park (Elara Estate) via Colebee |
| 752 | Blacktown to Rouse Hill via Quakers Hill & The Ponds |
| 753 | Blacktown to Doonside via Tallagandra Dr |
| 754 | Blacktown to Mt Druitt via Dean Park & Hassall Grove |
| 755 | Mt Druitt to Shalvey & Plumpton |
| 756 | Mt Druitt to Blacktown via Plumpton & Woodcroft |
| 758 | Mt Druitt to St Marys via Shalvey & Tregear |
| 759 | Mt Druitt to St Marys via Emerton, Willmot & Ropes Crossing |
| 761 | Mt Druitt to Bidwill via Carlisle Av |
| 770 | Mt Druitt to Penrith via Colyton, St Marys & Claremont Meadows |
| 771 | Mt Druitt to St Marys via Colyton |
| 774 | Penrith to Mt Druitt via Caddens, Claremont Meadows, St Marys & Oxley Park |
| 775 | Penrith to via UWS, St Marys, St Clair & Erskine Park |
| 776 | Penrith to Mt Druitt via Nepean Hospital, UWS & St Clair |
| 779 | St Marys to Erskine Park Industrial Area |
| 780 | Penrith to Mt Druitt via Cambridge Park, Ropes Crossing & Tregear |
| 781 | Penrith St Marys via Glenmore Park, Orchard Hills & Claremont Meadows |
| 782 | Penrith to Werrington & St Marys via Cambridge Gardens |
| 783 | Penrith to Werrington via Jordan Springs |
| 784 | Penrith to Cranebrook via Castlereagh Rd |
| 785 | Penrith to Werrington via Cambridge Park |
| 786 | Penrith to Cranebrook via Greygums Rd |
| 789 | Penrith to Luddenham |
| 791 | Penrith to Jamisontown via South Penrith |
| 793 | Penrith to South Penrith |
| 794 | Penrith to Glenmore Park via South Penrith |
| 795 | Penrith to Warragamba via Nepean Shores & Mulgoa Rd |
| 797 | Penrith to Glenmore Park via Mulgoa Rd |
| 799 | Penrith to Glenmore Park & Blue Hills Estate |

# Sydney rail network

Metro Trains


## Sydney metro and train lines

- **M** *Metro North West Line* — Chatswood, Tallawong
- **T1** *North Shore & Western Line* — North Shore, Western, Richmond
- **T2** *Inner West & Leppington Line* — Inner West, Leppington, City
- **T3** *Bankstown Line* — Liverpool, Lidcombe, City
- **T4** *Eastern Suburbs & Illawarra Line* — Eastern Suburbs, Illawarra, Cronulla
- **T5** *Cumberland Line* — Leppington, Richmond
- **T6** *Carlingford Line* — Carlingford, Clyde
- **T7** *Olympic Park Line* — Olympic Park, Lidcombe
- **T8** *Airport & South Line* — Airport, South, City
- **T9** *Northern Line* — Northern, Gordon

Stop · Interchange · Interchange · End of line

Line under construction

NORTH

Check timetables and trip planners for train services and connections

Visit **transportnsw.info**



1812TMS-E-MWT-A4P

# Appendix F

# WSU Transport Access Guide

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES

Established 1994

# Getting to and from UWS Penrith campus

The Penrith campus consists of three sites: Werrington North, Werrington South and Kingswood. Below are the walking options to each campus from the closest train station. Please look out for wildlife when walking on unmade paths.

The **walk to Werrington North** from Werrington train station is approximately 1.25kms and will take about 15 minutes. Exit Werrington station onto Railway Street. Turn left into Landers Street then right into Chapman Street. Follow until the end then step over the vehicle bar gate which takes you into the University grounds. Follow the partially unmade path across the grounds to the Werrington North campus.

The **walk to Werrington South** from the Werrington train station is approximately 2kms and will take about 20–30 minutes. Exit Werrington Station onto Railway Street. Turn left into Landers Street then right into Chapman Street and follow until the end and into the University grounds. Follow the partially unmade path across the grounds to the Werrington North campus. Use the 'highway cross over bridge' between North and South campuses to enter Werrington South campus.

The **walk to the Kingswood campus** from the Werrington South campus is just over 1km and will take approximately 10–15 minutes. From the Werrington South campus, follow King St, passing building BD to the roundabout and turn right at the roundabout. Follow the road until you reach the hockey parking site and then turn left into O'Connell Street. Pass the hockey fields on your right and then follow the footpath.

The **walk to the Kingswood campus** from Kingswood train station is approximately 1.5kms and will take about 10–15 minutes. Exit Kingswood Station onto the Great Western Highway. Follow the walking path on the Highway to Kingswood Park and then the footpath across the park onto Second Avenue to the entrance of the Kingswood campus.

Bicycle parking and showers are located on all Penrith campuses. Please see www.uws.edu.au/cycling for locations.

Cycling options include on-road cycling on the Great Western Highway. Please download a copy of the Penrith-Windsor-Blue Mountains cycle-ways map at www.uws.edu.au/campus.

The University is continuing to improve its cycling facilities. Bike parking is available at most locations. Thinking about cycling to campus? Need more confidence? Register for cycling proficiency skills training at transportaccess@uws.edu.au.

**Werrington Station** is serviced by the Western Line. From the station it is a 15 minute walk to the Werrington North campus and a 30 minute walk to the Werrington South campus.

**Kingswood Station** is serviced by the Western Line. The Kingswood campus is a 10–15 minute walk from the station or a 5 minute bus trip via the UWS Shuttle.

**Penrith Station** is serviced by the Western and Blue Mountains lines and has the most frequent services. The Penrith campus is a 15 minute bus trip from the Penrith Station Interchange at stop number 275080 via Westbus 774-776 services.

**St Marys Station** is serviced by the Western Line. The Penrith campus is a 15 minute bus trip from St Marys Station Interchange at stop number 2760215 via Westbus 774-776 services.

**Westbus Services 774-776** operate from the St Marys and Penrith stations, stopping at the Kingswood campus on Second Avenue and on the Great Western Highway for the Werrington North and South campuses. Services run approximately every 10 minutes.

**UWS Shuttle** operates between the Penrith campus and Kingswood train station every 10 to 15 minutes. There is no charge to use the UWS Shuttle but a current UWS staff or student ID card must be shown upon boarding. For shuttle hours of operation and for real time tracking visit http://uwsconnect.com.au/shuttlebus.html.

**Westbus Services 774-776** offer wheelchair accessible services at limited times. Please consult the Busways timetable and look for the accessible symbol for these services.

**Werrington, St Marys** and **Penrith train stations** are wheelchair accessible. **Kingswood train station** may be accessible with assistance from a friend or carer. Specific station details can be found on the CityRail website www.cityrail.com.au or contact Transport Info.

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## Transport Access Guide

Your guide for accessing Penrith campus


# Penrith campus

## Fares

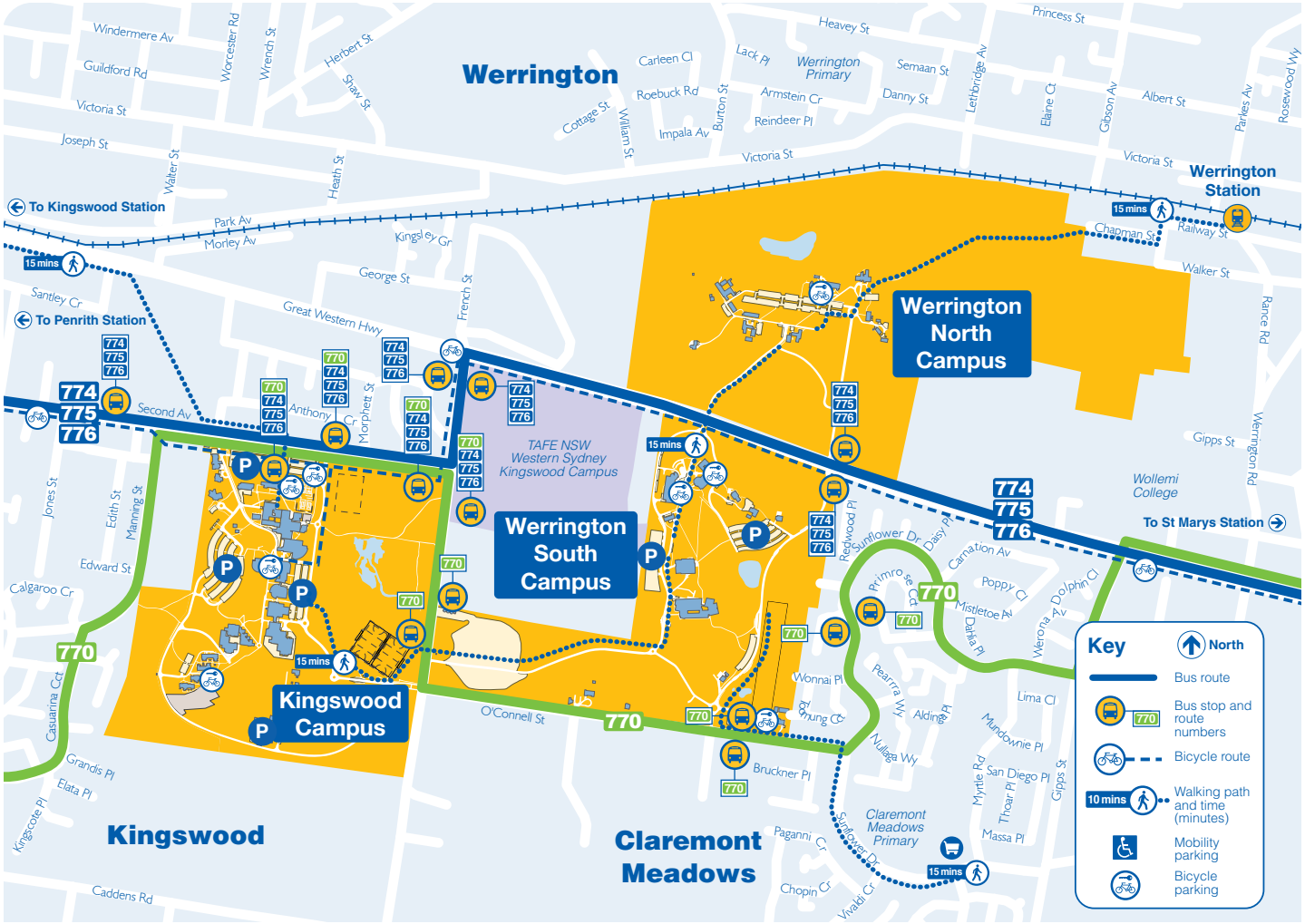
Please contact Transport Info on 131 500 for latest fare information and travel passes.

### Westbus Bus Fare Information

| Bus Service | Departing | Fare Section | Adult | Concession |
|---|---|---|---|---|
| 774 to 776 | Penrith Station | 4 | $3.50 | $1.70 |
| 774 to 776 | St Marys Station | 3 | $3.50 | $1.70 |

Entrance to the Werrington North and South campuses is via the Great Western Highway. Entrance to the Kingswood campus is via O'Connell Street then turn into Second Avenue. The closest motorway to the campuses is the M4. Take the Mamre Road exit and follow until the end where you turn left onto the Great Western Highway.

Please be aware that parking is limited on this campus and parking permits and fees apply. For further information on parking please visit www.uws.edu.au/parking. To plan your trip using this travel option please use the UWS Interactive Map at www.uws.edu.au/campus.




## Planning your Trip

UWS recommends contacting the service providers below to plan your trip and obtain the latest timetable, fare and wheelchair accessible information.

131500.com.au Transport Info
*Information for people on the move*

**Westbus** (bus services)
Phone: 02 9890 0000
Website: www.westbus.com.au

## UWS Campus Map

In conjunction with this travel access guide, it is recommended you download a copy of the UWS Penrith campus map available at http://www.uws.edu.au/campus.

## UWS Campus Safety and Security

UWS Information Centre, Building K
Phone: (02) 4736 0431

For comments, suggestions and feedback on travelling to UWS please email transportaccess@uws.edu.au.

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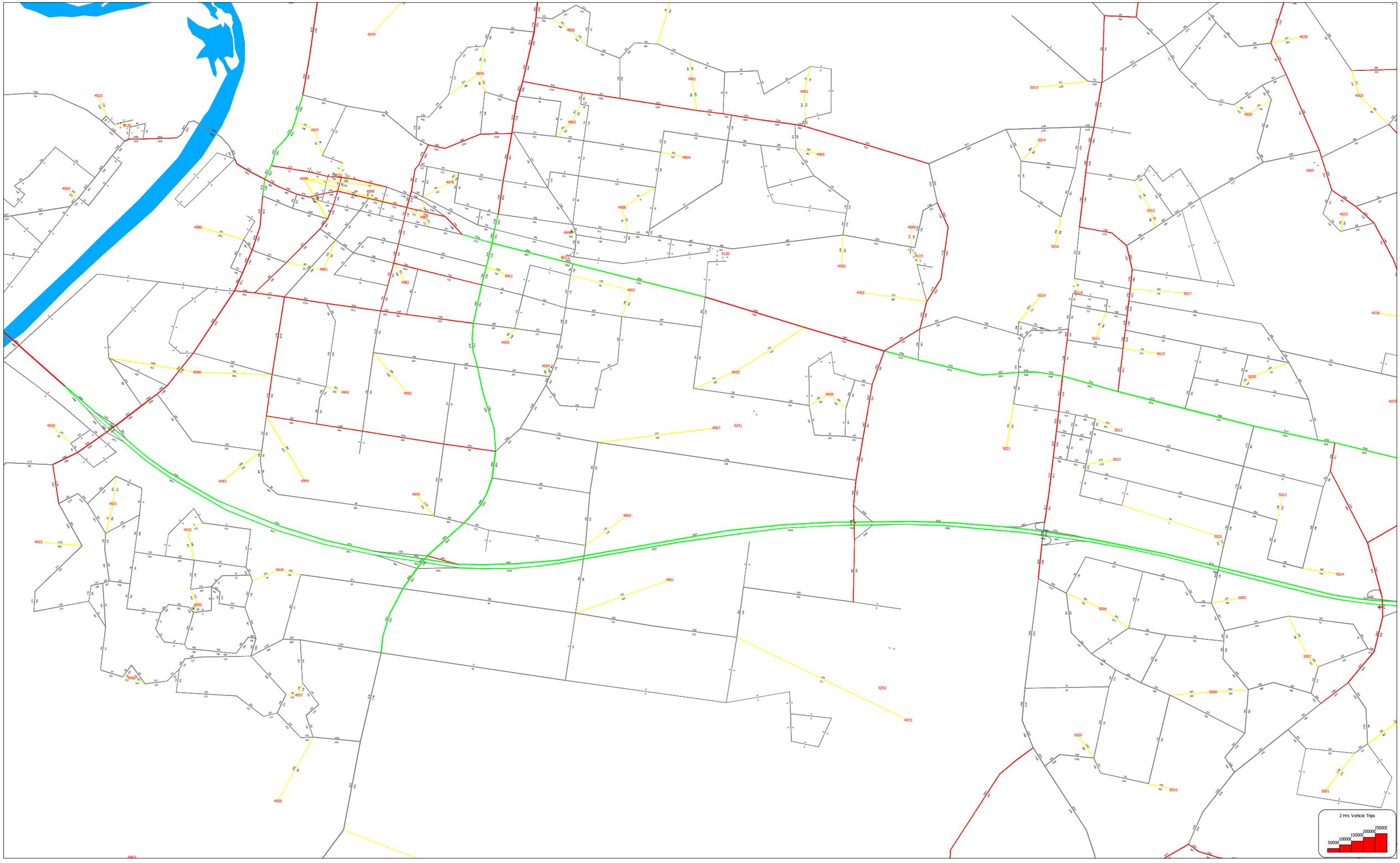
Version 3

# Appendix G
# STFM Model Extracts

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

TRAFFIC VOLUMES__

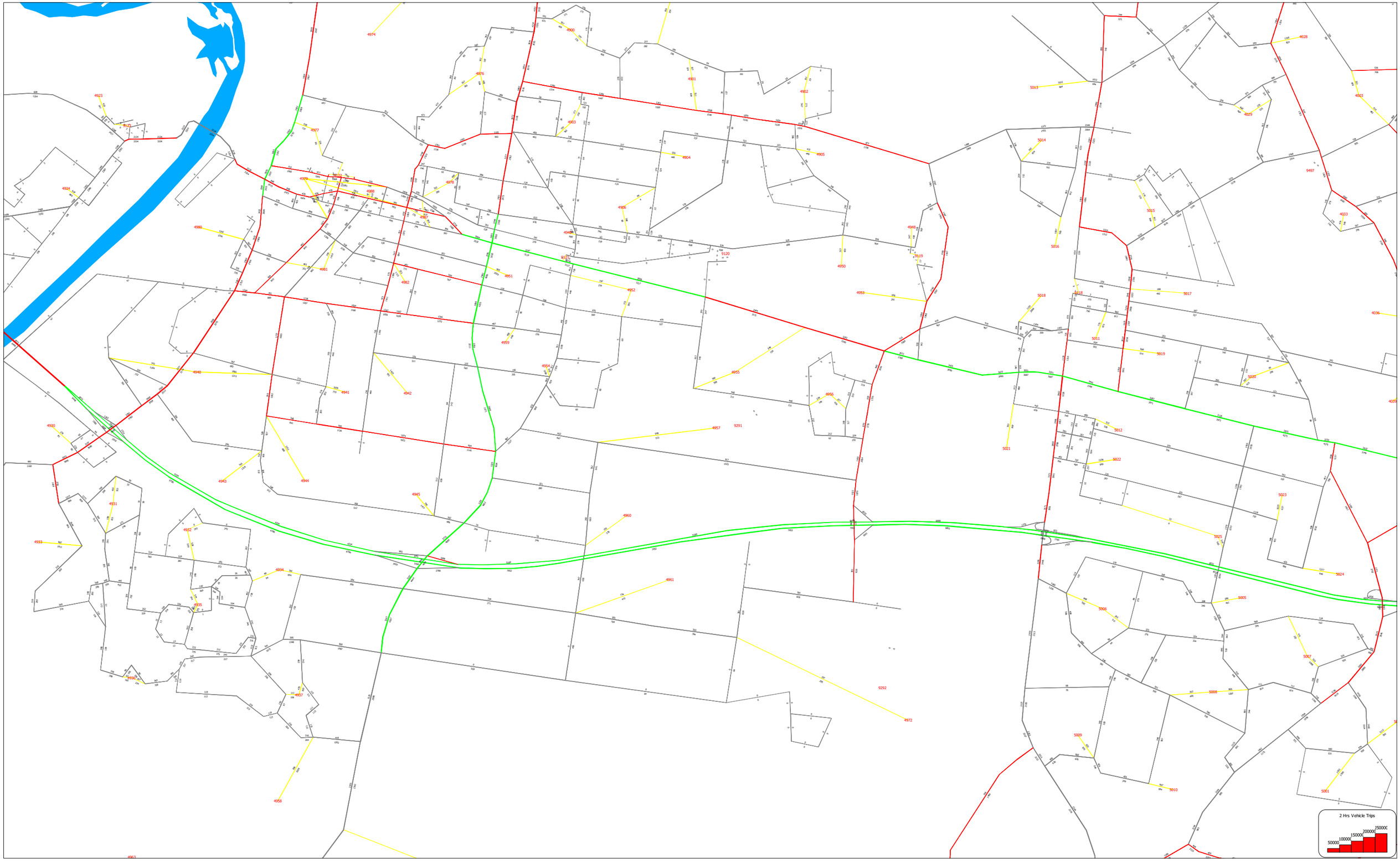



SYDNEY GMA STRATEGIC TRAFFIC FORECASTING MODEL(STFM)
Scenario 2021: 2021 ROAD NETWORK MODEL(TZP19STMV3.8FMMV7.1)-7-9AM(mf33)
2021-09-16 07:33

LANE (1WAY):

1
2
3
4
5

TRAFFIC VOLUMES__

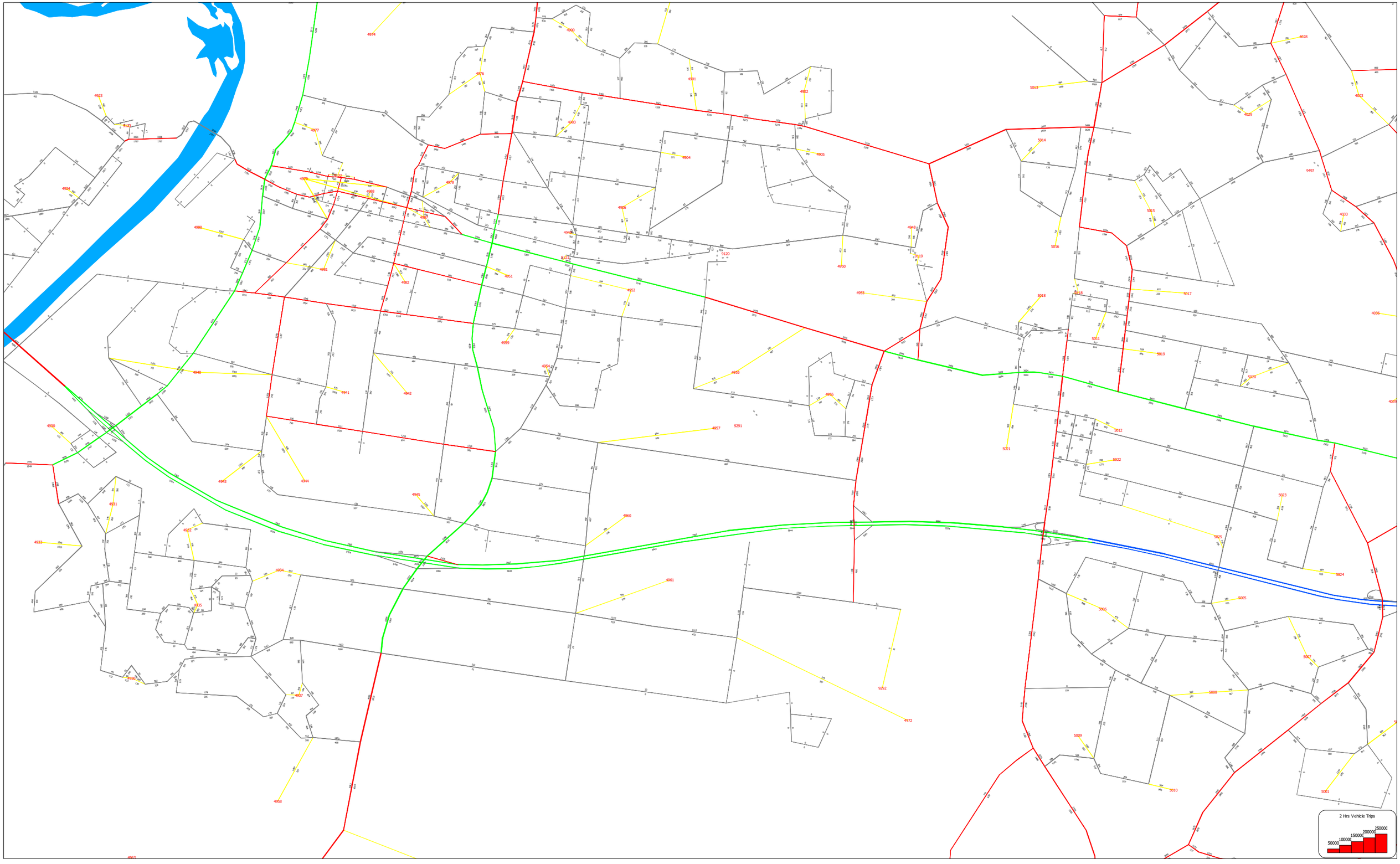



SYDNEY GMA STRATEGIC TRAFFIC FORECASTING MODEL(STFM)
Scenario 20210: 2021 ROAD NETWORK MODEL(TZP19STMV3.8FMMV7.1)-4-6PM(mf53)
2021-09-16 07:33

LANE (1WAY):

1
2
3
4
5

TRAFFIC VOLUMES__

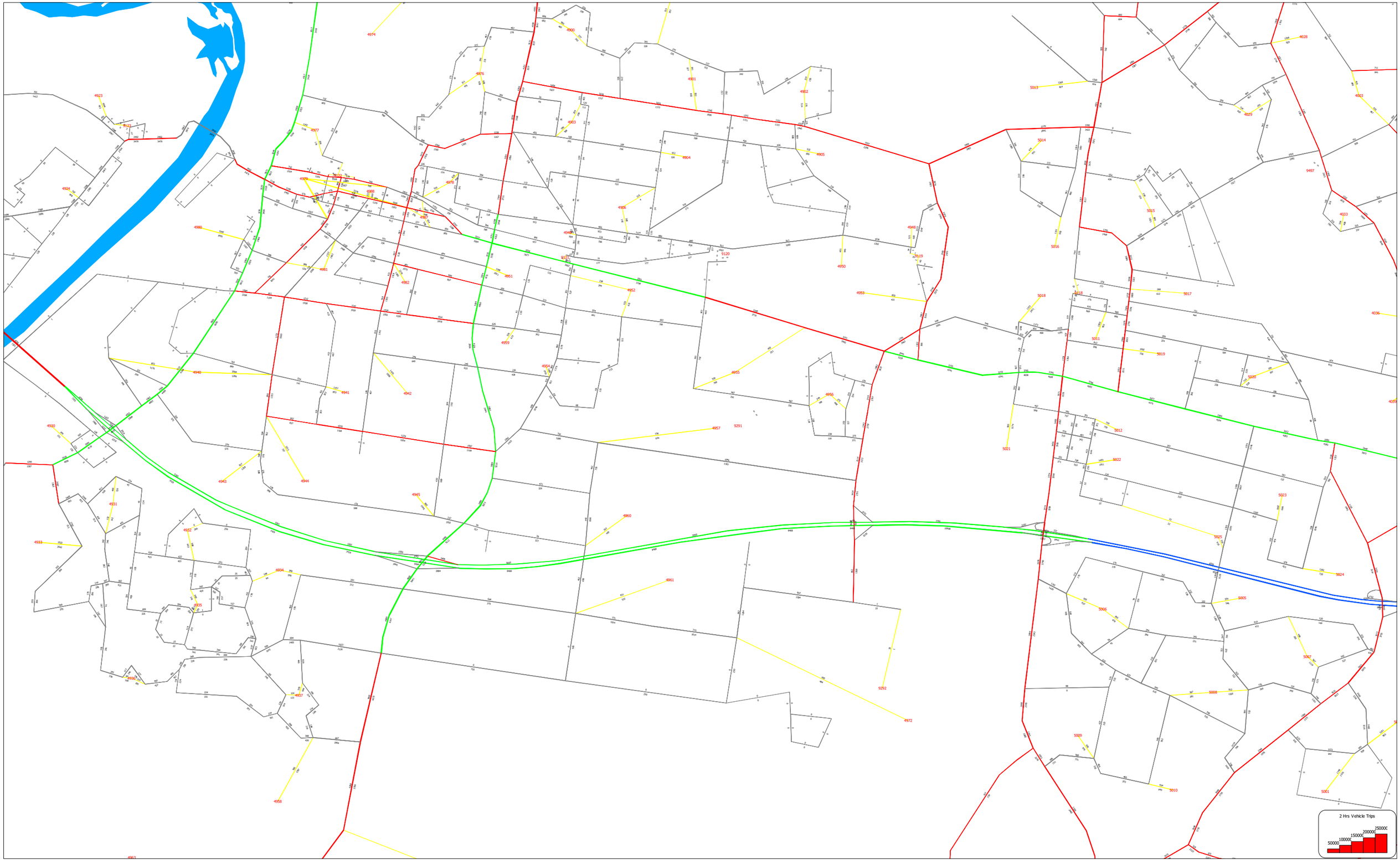



SYDNEY GMA STRATEGIC TRAFFIC FORECASTING MODEL(STFM)
Scenario 2031: 2031 ROAD NETWORK MODEL(TZP19STMV3.8FMMV7.1)-7-9AM(mf35)
2021-09-16 07:33

LANE (1WAY):

1
2
3
4
5

TRAFFIC VOLUMES__




SYDNEY GMA STRATEGIC TRAFFIC FORECASTING MODEL(STFM)
Scenario 20310: 2031 ROAD NETWORK MODEL(TZP19STMV3.8FMMV7.1)-4-6PM(mf55)
2021-09-16 07:34

LANE (1WAY):

1
2
3
4
5

# Appendix H
# Swept Path Assessment

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
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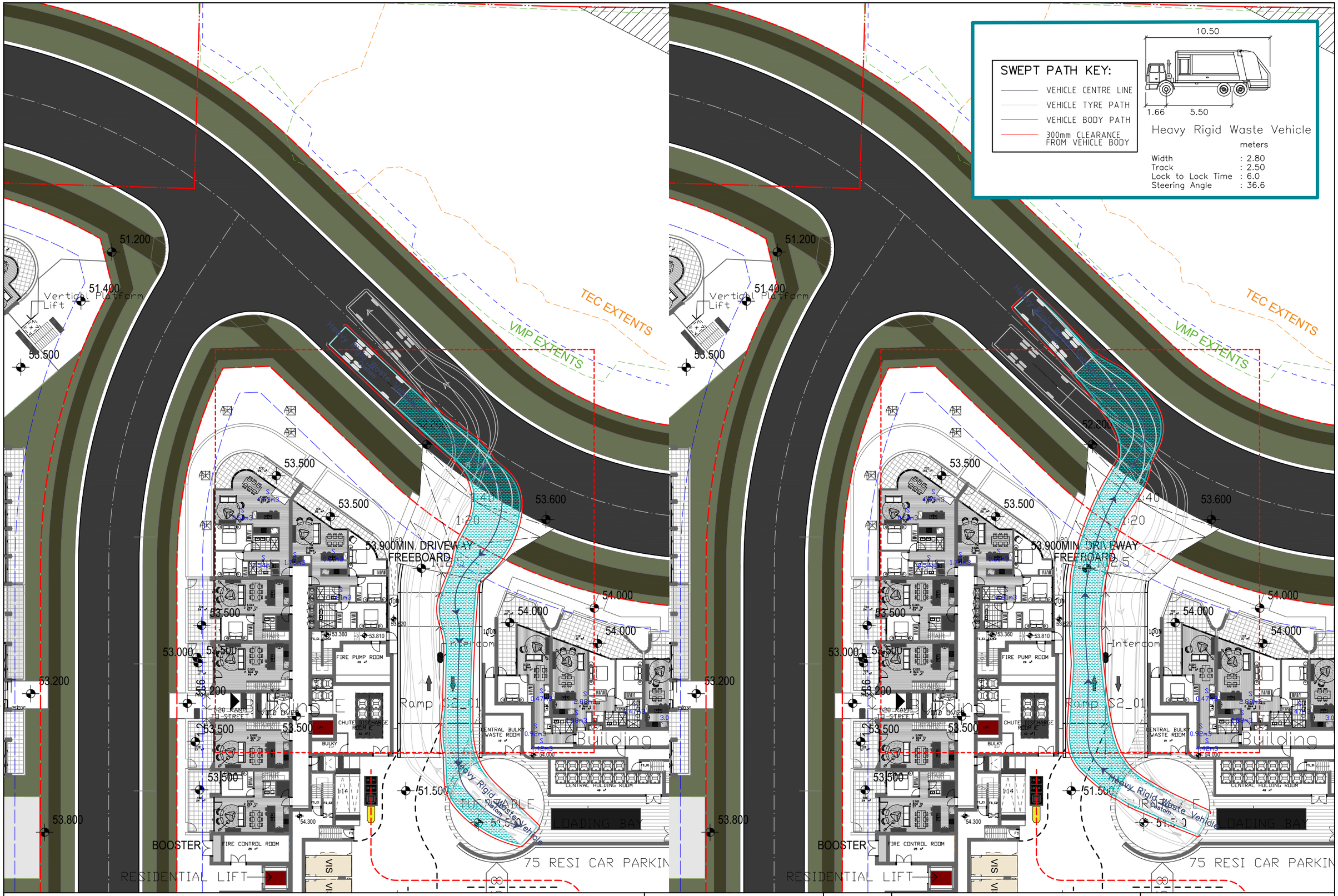


O'CONNELL STREET, CADDENS
ENTRY AND EXIT INTO LOADING DOCK FOR A 10.5m HEAVY RIGID WASTE VEHICLE
SWEPT PATH ASSESSMENT

DRAWING REF NO. 22078-V7.3-SP

SHEET NO. 01 OF 09

ISSUE DATE 29 February 2024

DESIGNED BY L.ELLSON

SCALE A3 0 4.0 8.0 1:400

N

DISCLAIMER

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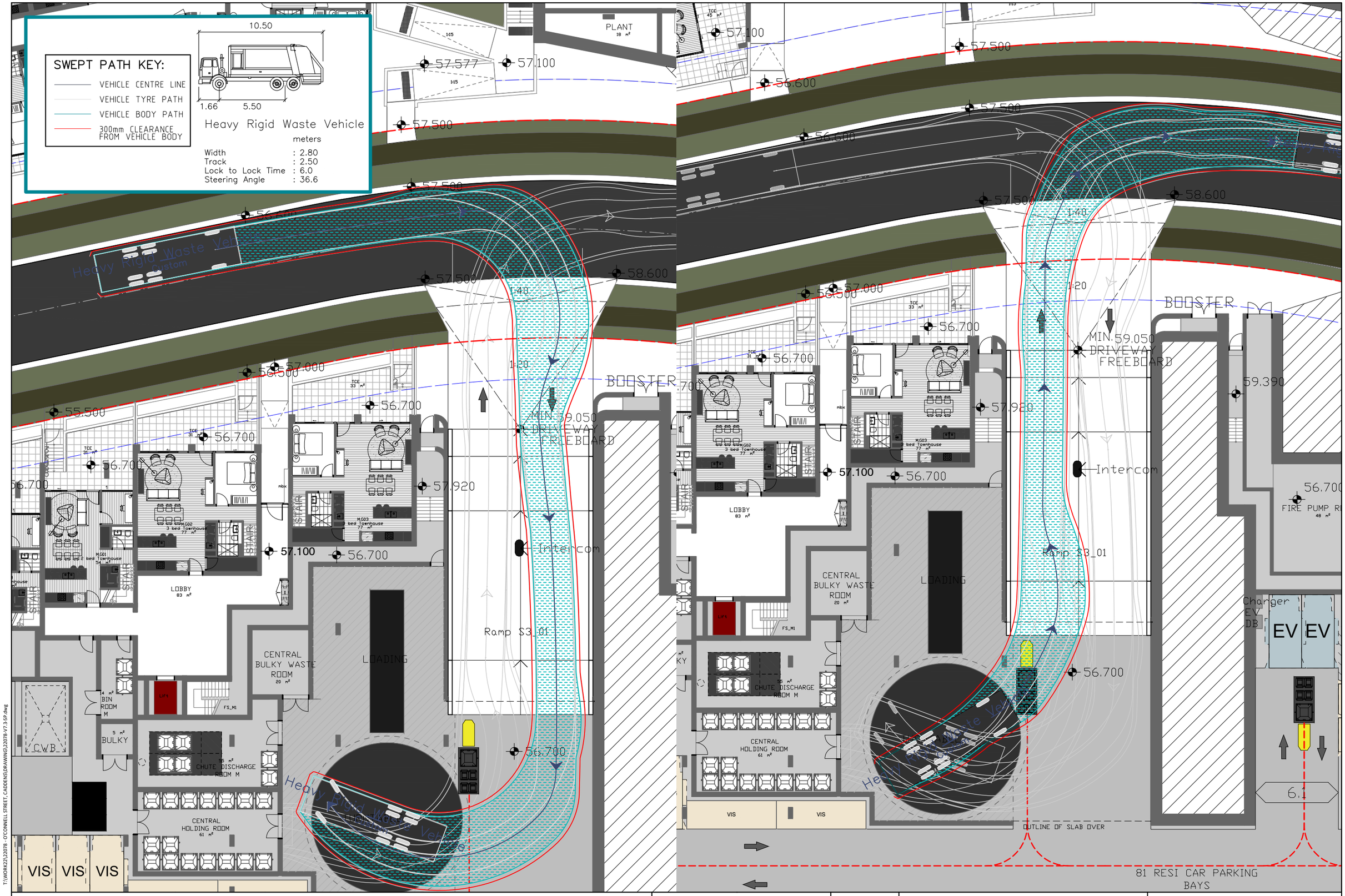
T:\WORK22\22078 - O'CONNELL STREET, CADDENS\DRAWING\22078-V7.3-SP.dwg

Plotted by Lachlan




# O'CONNELL STREET, CADDENS
## ENTRY AND EXIT INTO LOADING DOCK FOR A 10.5m HEAVY RIGID WASTE VEHICLE
## SWEPT PATH ASSESSMENT

DRAWING REF NO. 22078-V7.3-SP

SHEET NO. 02 OF 09

ISSUE DATE 29 February 2024

DESIGNED BY L.ELLSON

SCALE A3 — 0 2.5 5.0 — 1:250

N

DISCLAIMER

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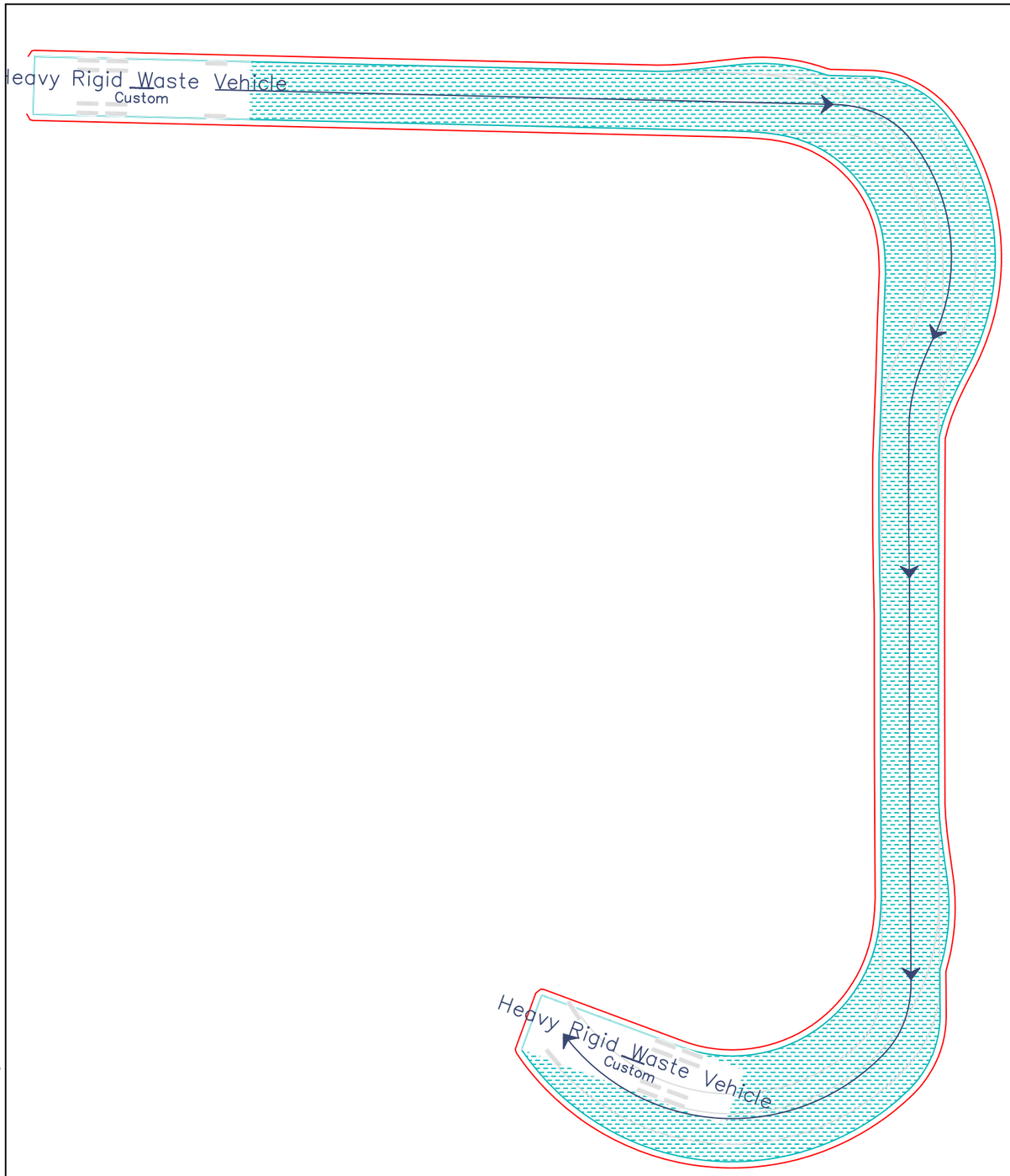
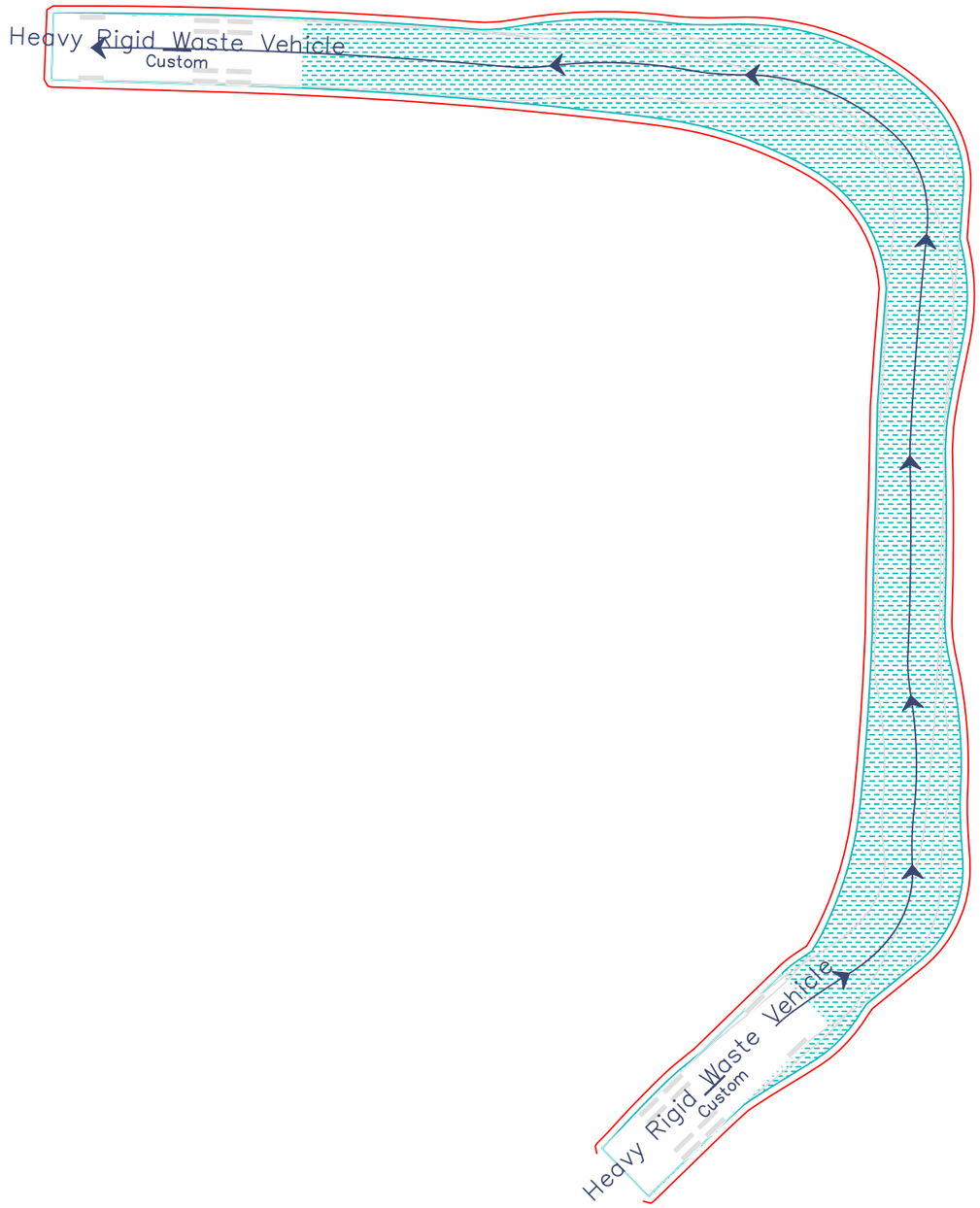
T:\WORK22\22078 - O'CONNELL STREET, CADDENS\DRAWING\22078-V7.3-SP.dwg

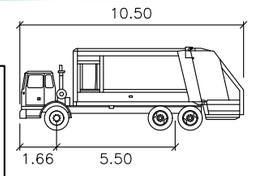
Plotted by Lachlan




SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY




Heavy Rigid Waste Vehicle

meters

| | |
|---|---|
| Width | : 2.80 |
| Track | : 2.50 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 36.6 |

O'CONNELL STREET, CADDENS
ENTRY AND EXIT INTO LOADING DOCK FOR A 10.5m HEAVY RIGID WASTE VEHICLE
SWEPT PATH ASSESSMENT

DRAWING REF NO. 22078-V7.3-SP SHEET NO. 03 OF 09 ISSUE DATE 29 February 2024

DESIGNED BY L.ELLSON

SCALE A3 0 2.5 5.0 1:250

N

DISCLAIMER

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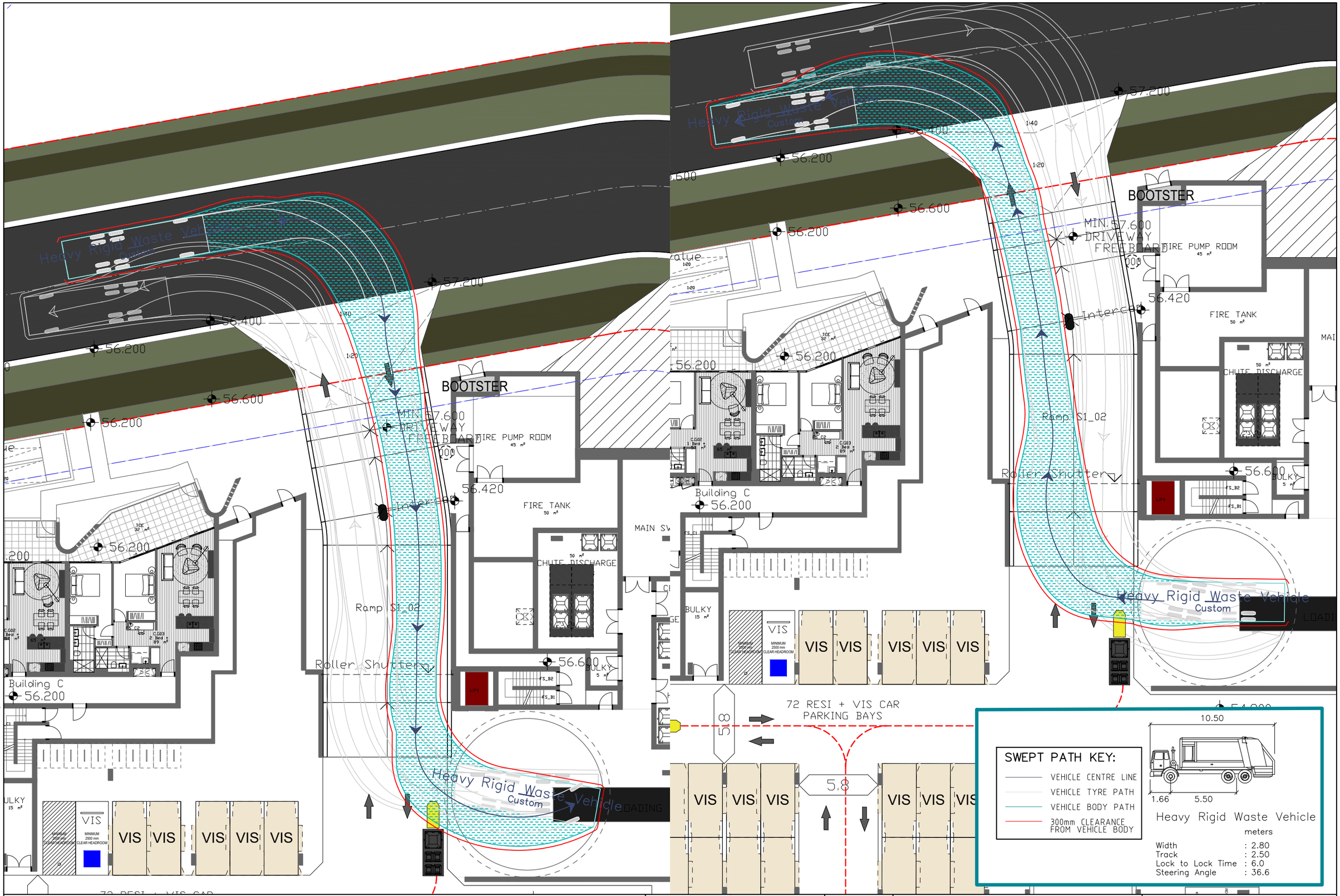


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Plotted by Lachlan

O'CONNELL STREET, CADDENS
ENTRY AND EXIT INTO LOADING DOCK FOR A 10.5m HEAVY RIGID WASTE VEHICLE
SWEPT PATH ASSESSMENT

DRAWING REF NO. 22078-V7.3-SP

SHEET NO. 04 OF 09

ISSUE DATE 29 February 2024

DESIGNED BY L.ELLSON

SCALE A3 0 2.5 5.0 1:250

N

DISCLAIMER

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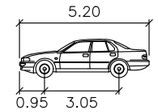
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

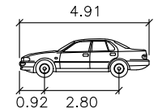



B99

| | meters |
|---|---|
| Width | : 1.94 |
| Track | : 1.84 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 33.9 |

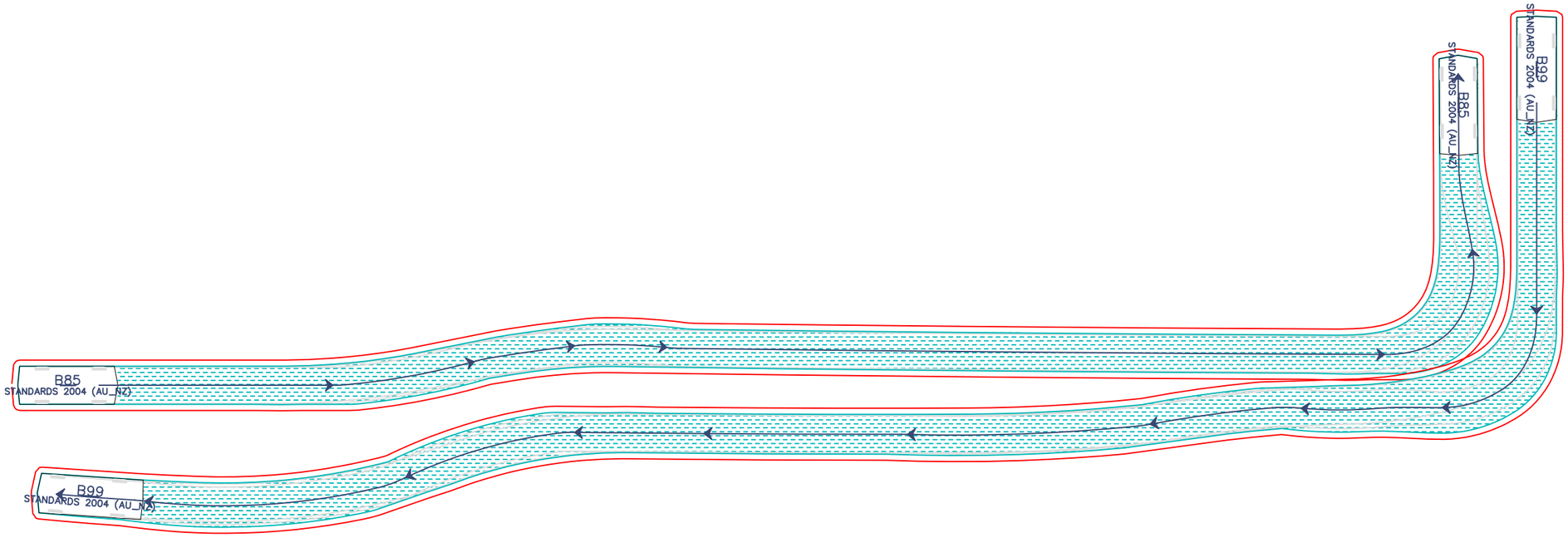
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY




B85

| | meters |
|---|---|
| Width | : 1.87 |
| Track | : 1.77 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 34.1 |




O'CONNELL STREET, CADDENS
PASSING MOVEMENTS OF AN 85th AND 99th PERCENTILE VEHICLE
SWEPT PATH ASSESSMENT

DRAWING REF NO. 22078-V7.3-SP

SHEET NO. 05 OF 09

ISSUE DATE 29 February 2024

DESIGNED BY L.ELLSON

SCALE A3 0 2.5 5.0 1:250

N

DISCLAIMER

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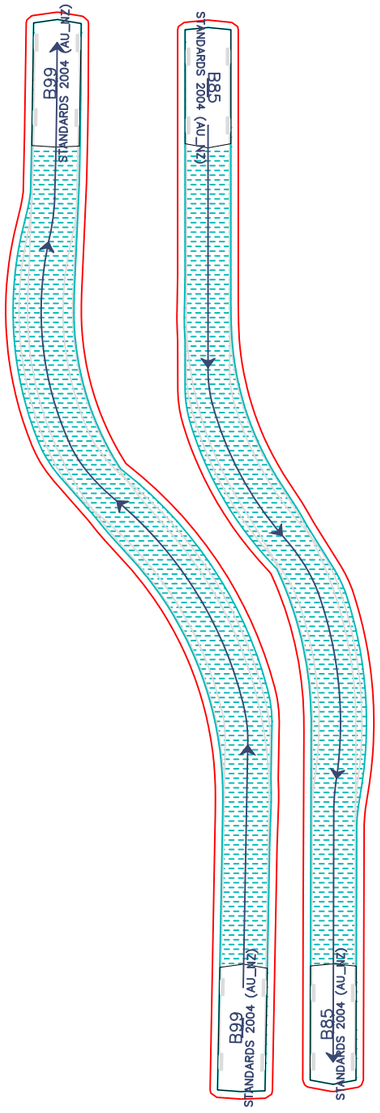
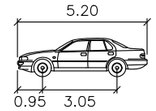



SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

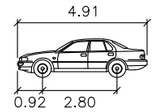



B99

| | meters |
|---|---|
| Width | : 1.94 |
| Track | : 1.84 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 33.9 |

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY




B85

| | meters |
|---|---|
| Width | : 1.87 |
| Track | : 1.77 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 34.1 |

O'CONNELL STREET, CADDENS
PASSING MOVEMENTS OF AN 85th AND 99th PERCENTILE VEHICLE
SWEPT PATH ASSESSMENT

DRAWING REF NO. 22078-V7.3-SP SHEET NO. 06 OF 09 ISSUE DATE 29 February 2024

DESIGNED BY L.ELLSON

SCALE A3 0 2.5 5.0 1:250

N

DISCLAIMER

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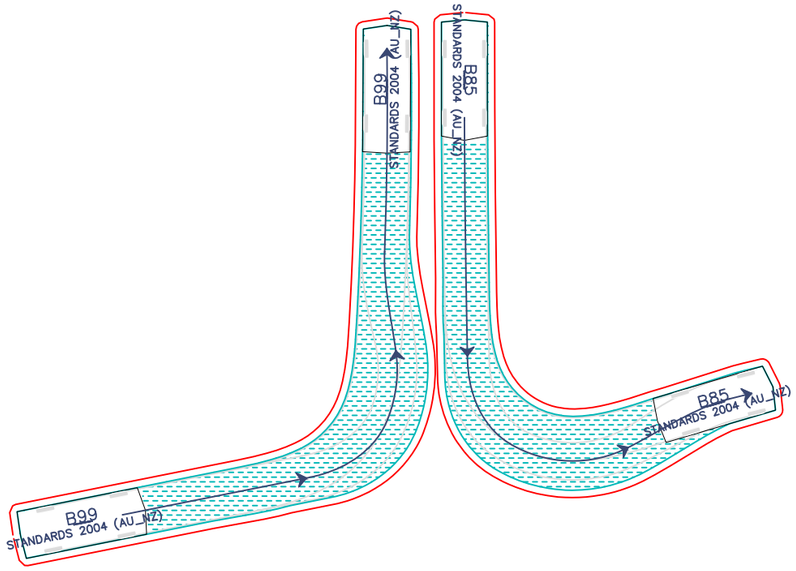
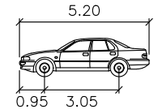



SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

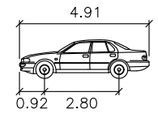



B99

| | meters |
|---|---|
| Width | : 1.94 |
| Track | : 1.84 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 33.9 |

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY




B85

| | meters |
|---|---|
| Width | : 1.87 |
| Track | : 1.77 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 34.1 |

O'CONNELL STREET, CADDENS
PASSING MOVEMENTS OF AN 85th AND 99th PERCENTILE VEHICLE
SWEPT PATH ASSESSMENT

DRAWING REF NO. 22078-V7.3-SP

SHEET NO. 07 OF 09

ISSUE DATE 29 February 2024

DESIGNED BY L.ELLSON

SCALE A3 0 2.5 5.0 1:250

N

DISCLAIMER

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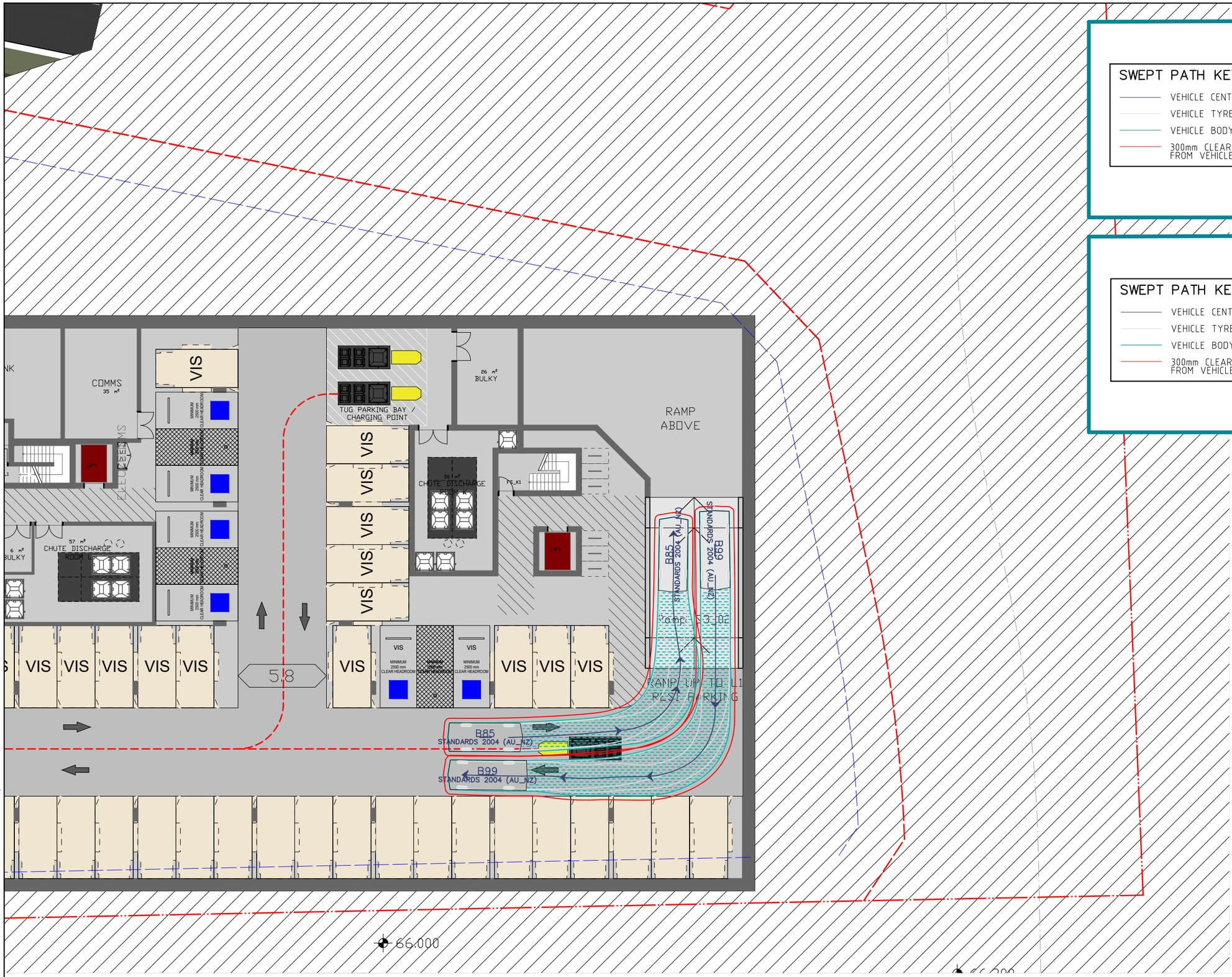
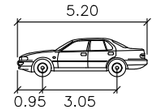



## SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

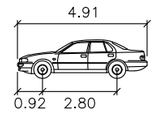



B99

| | meters |
|---|---|
| Width | : 1.94 |
| Track | : 1.84 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 33.9 |

## SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY




B85

| | meters |
|---|---|
| Width | : 1.87 |
| Track | : 1.77 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 34.1 |

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Plotted by Lachlan

# O'CONNELL STREET, CADDENS
## PASSING MOVEMENTS OF AN 85th AND 99th PERCENTILE VEHICLE
## SWEPT PATH ASSESSMENT

DRAWING REF NO. 22078-V7.3-SP

SHEET NO. 08 OF 09

ISSUE DATE 29 February 2024

DESIGNED BY L.ELLSON

SCALE A3 — 0 2.5 5.0 — 1:250

N

DISCLAIMER

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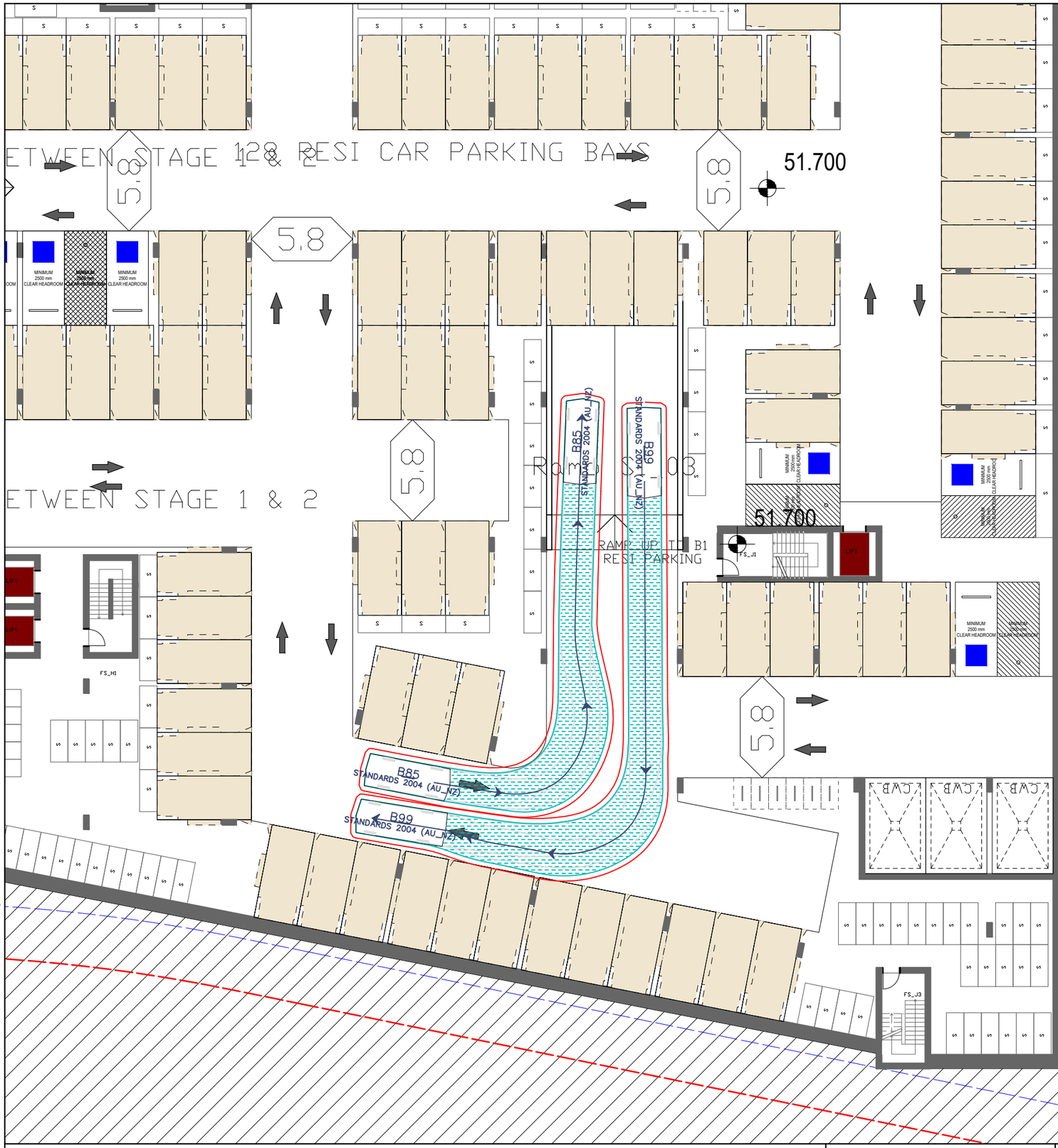
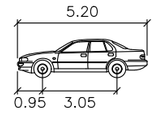



## SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

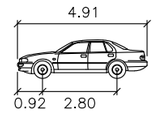



B99

| | meters |
|---|---|
| Width | : 1.94 |
| Track | : 1.84 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 33.9 |

## SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY




B85

| | meters |
|---|---|
| Width | : 1.87 |
| Track | : 1.77 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 34.1 |

# O'CONNELL STREET, CADDENS
## PASSING MOVEMENTS OF AN 85th AND 99th PERCENTILE VEHICLE
## SWEPT PATH ASSESSMENT

DRAWING REF NO. 22078-V7.3-SP

SHEET NO. 09 OF 09

ISSUE DATE 29 February 2024

DESIGNED BY L.ELLSON

SCALE A3 — 0 2.5 5.0 — 1:250

N

DISCLAIMER

This drawing has been prepared using vehicle modelling computer software AutoTurn Pro V11.0 in conjunction with AutoCAD 2018. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
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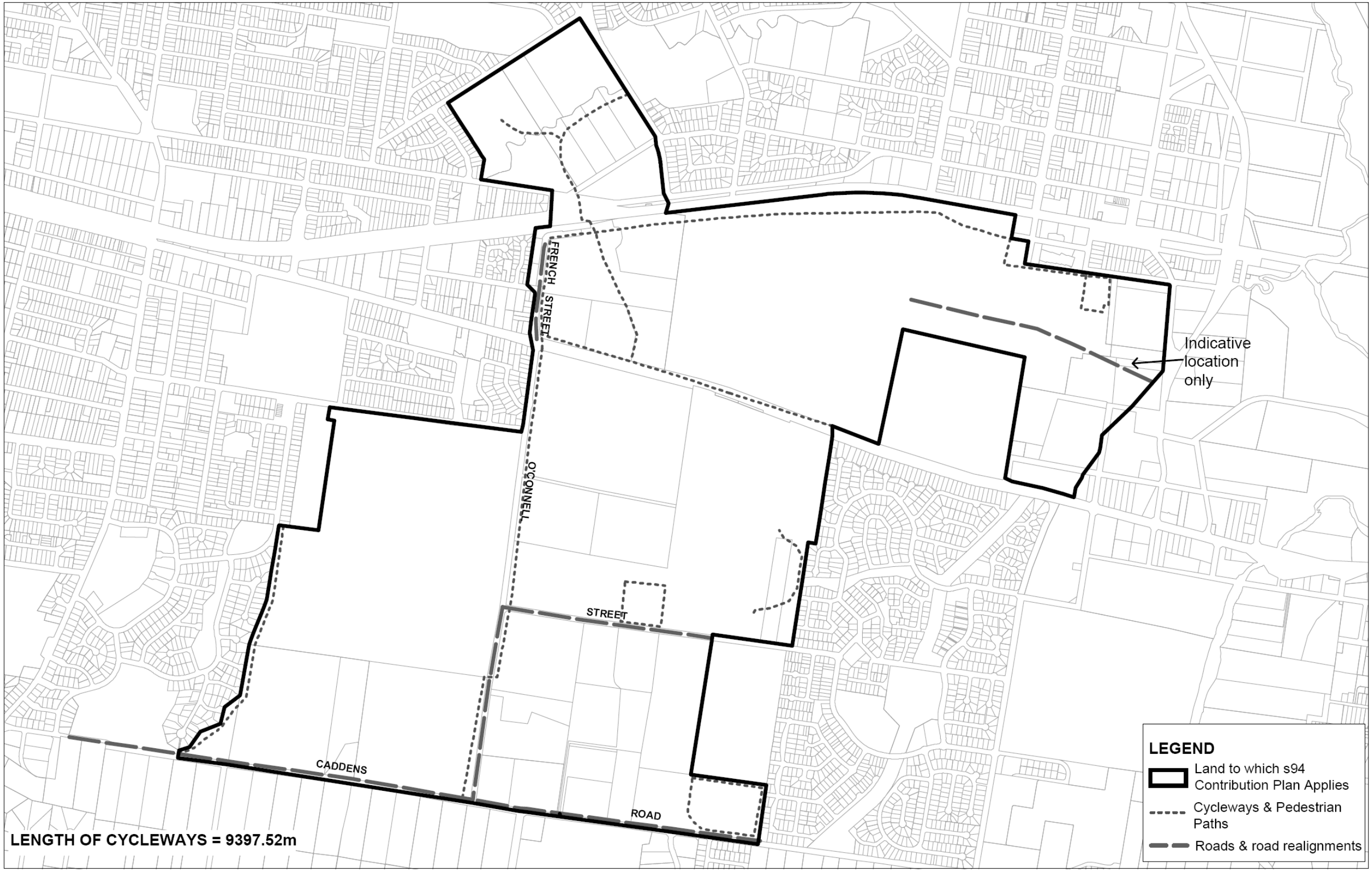
# Appendix I

# TTPP Traffic Distribution

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES

Established 1994




02/06/2008

**Transport Facilities**

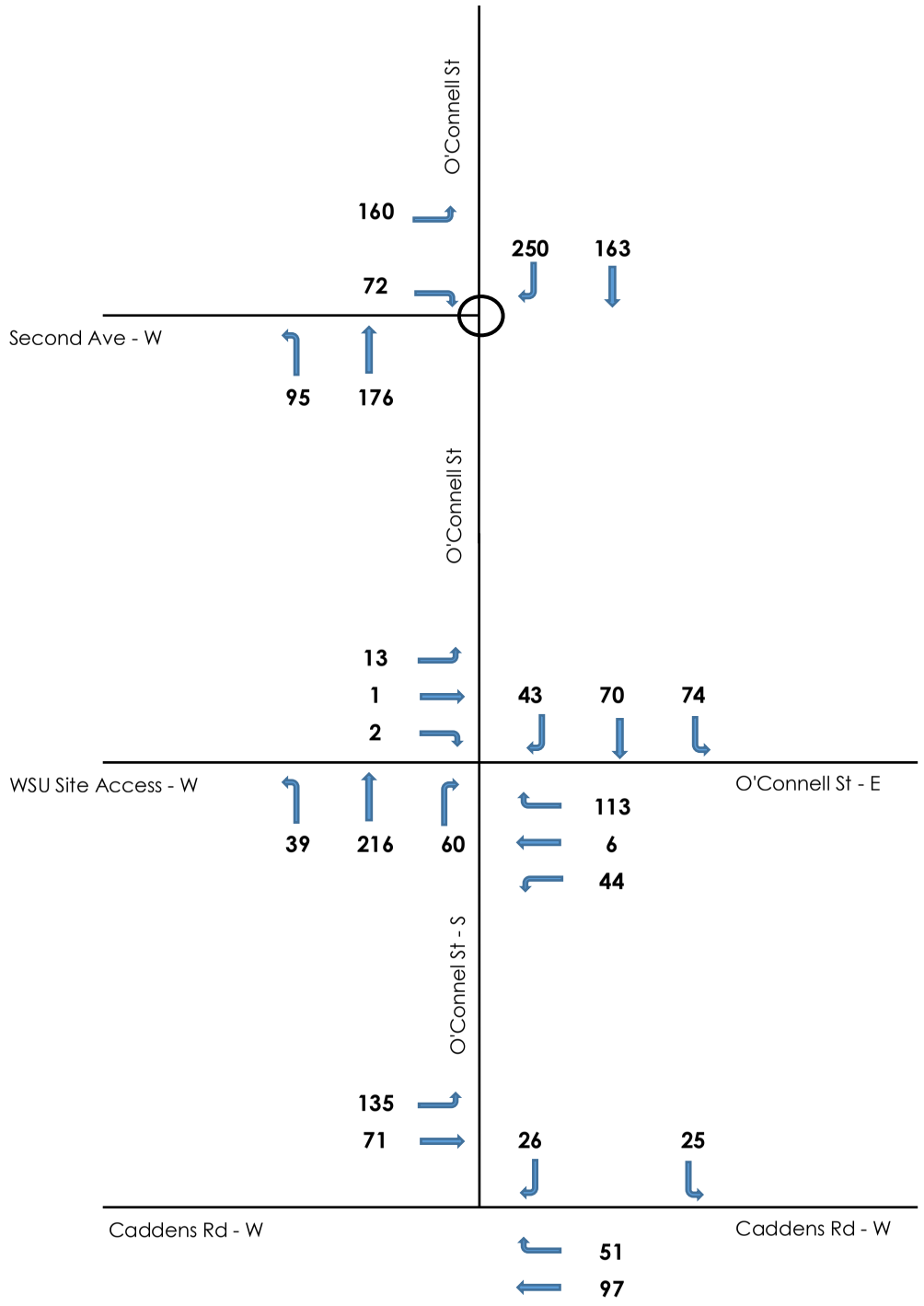
(Roads, Cycleways, Pedestrian Paths)

PENRITH CITY COUNCIL
Serving Our Community

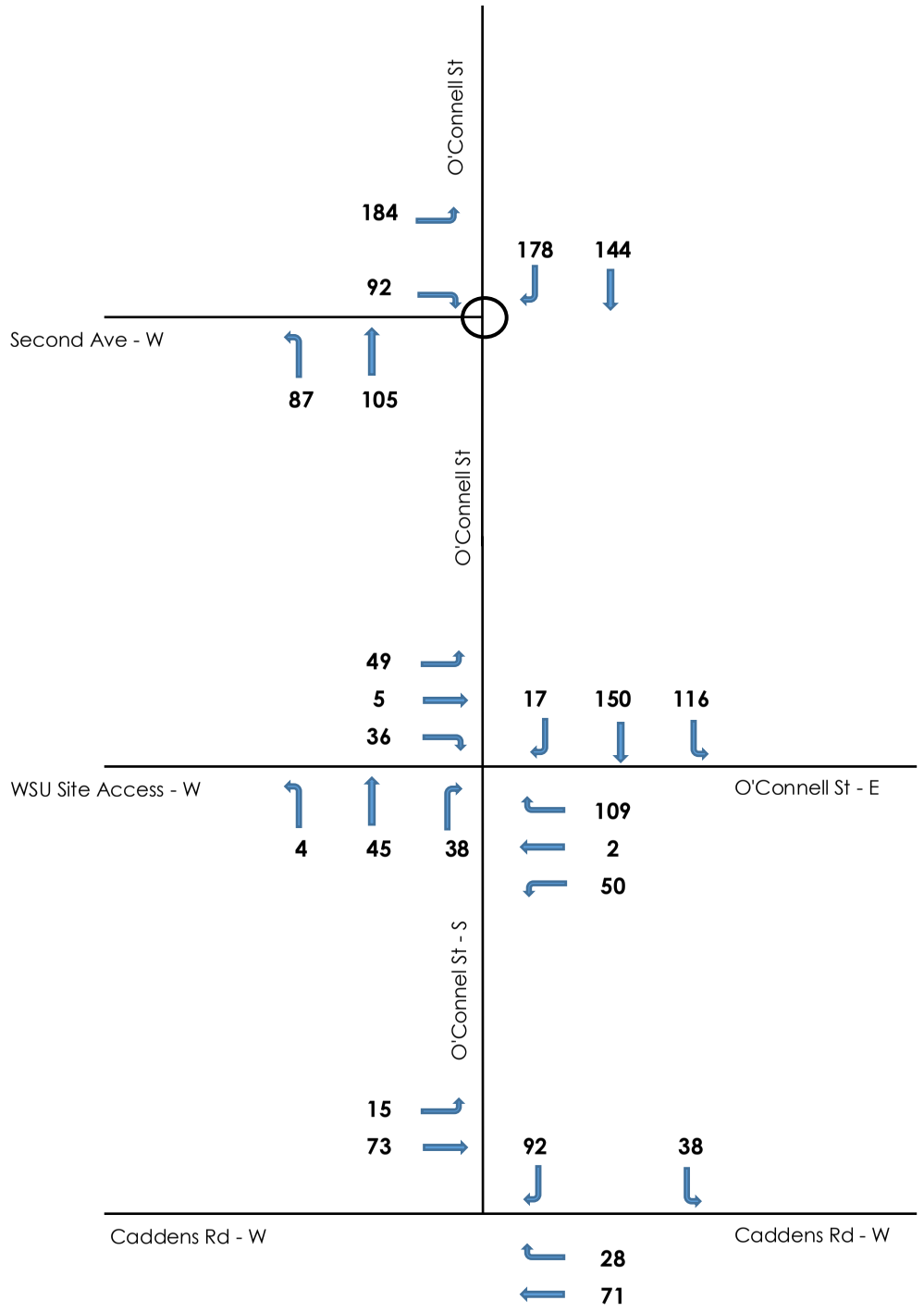
# TTPP

*Existing*

## Weekday AM



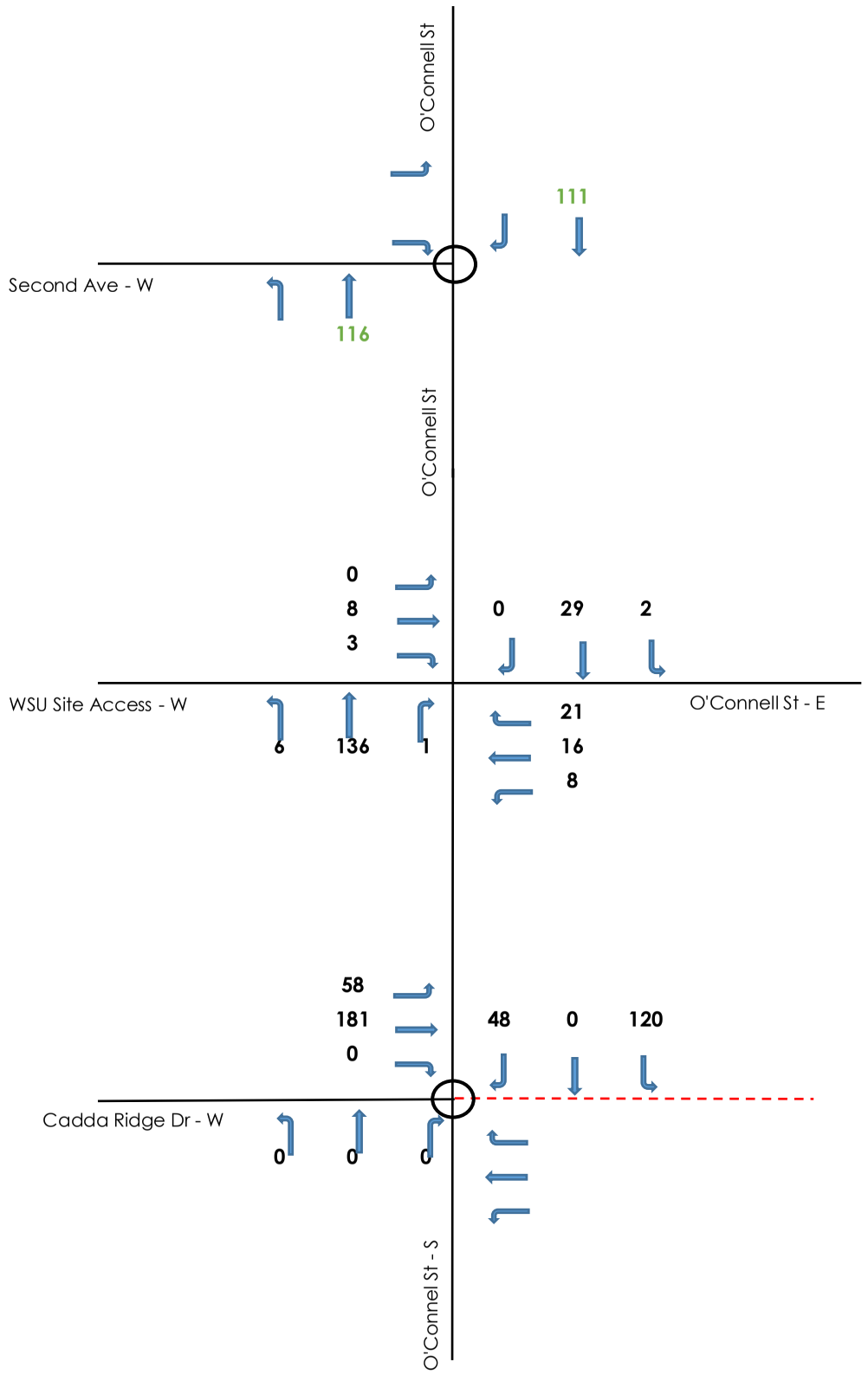

## Weekday PM



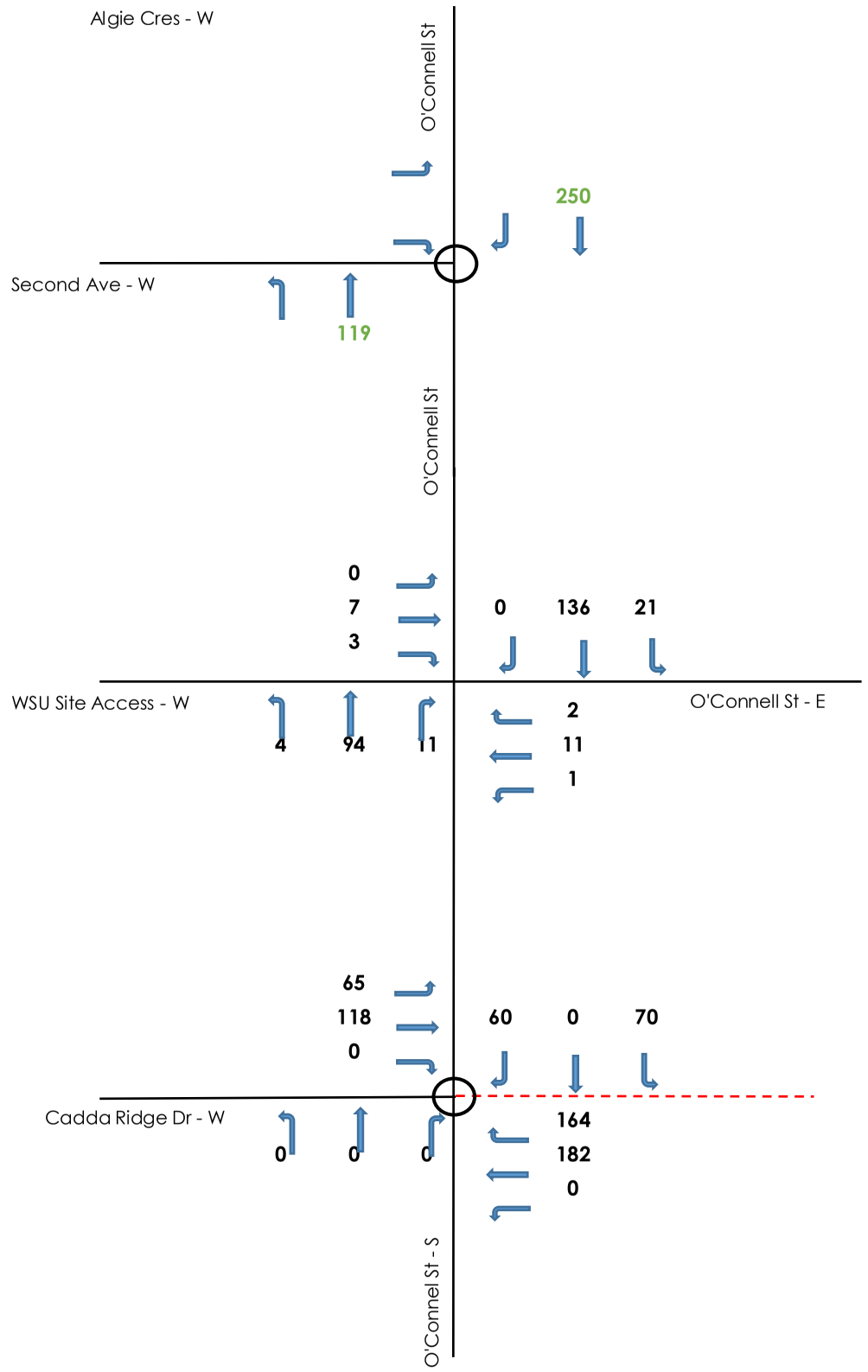
# TTPP

Background Traffic

## AM Background



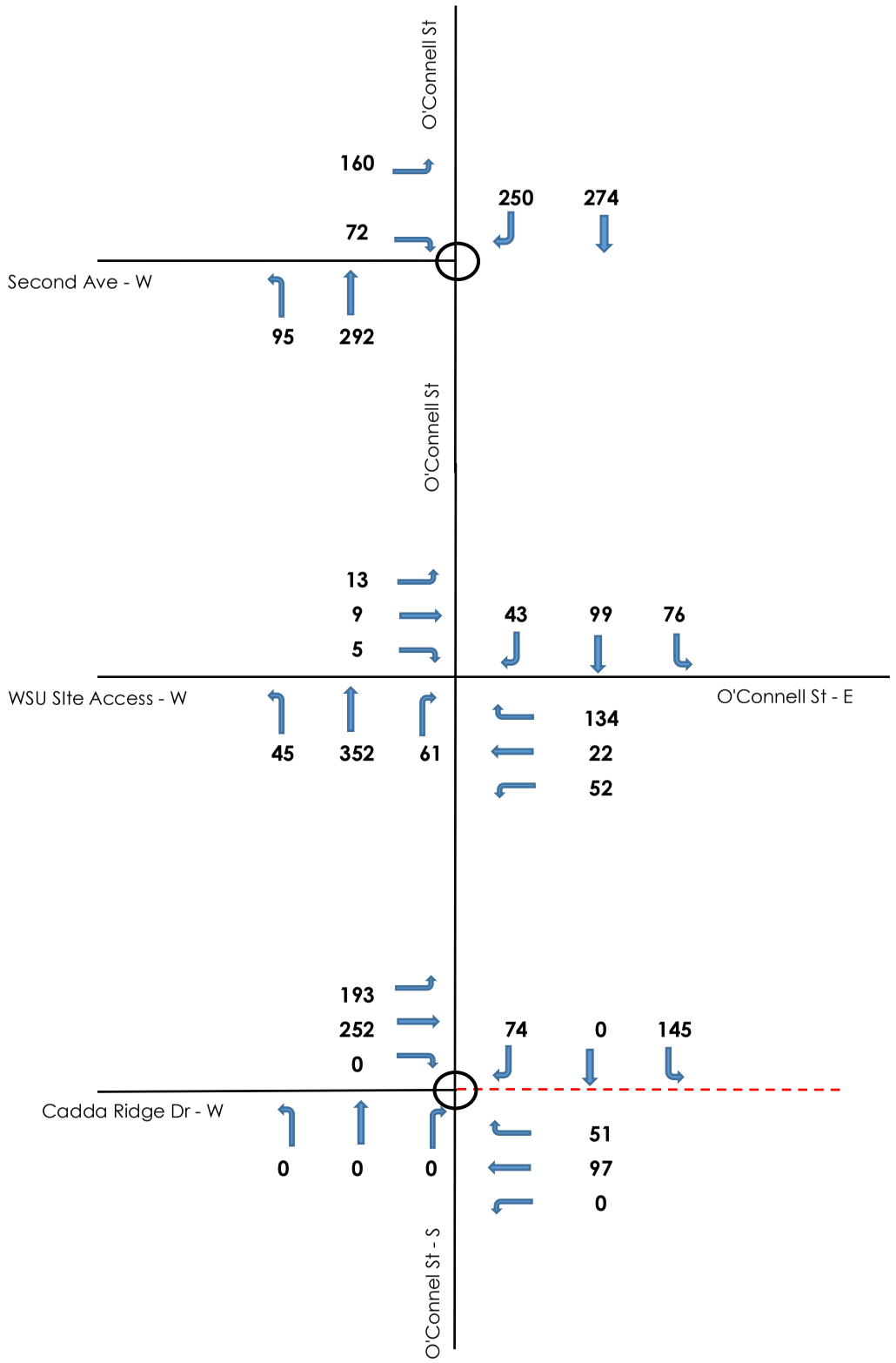

## PM Background



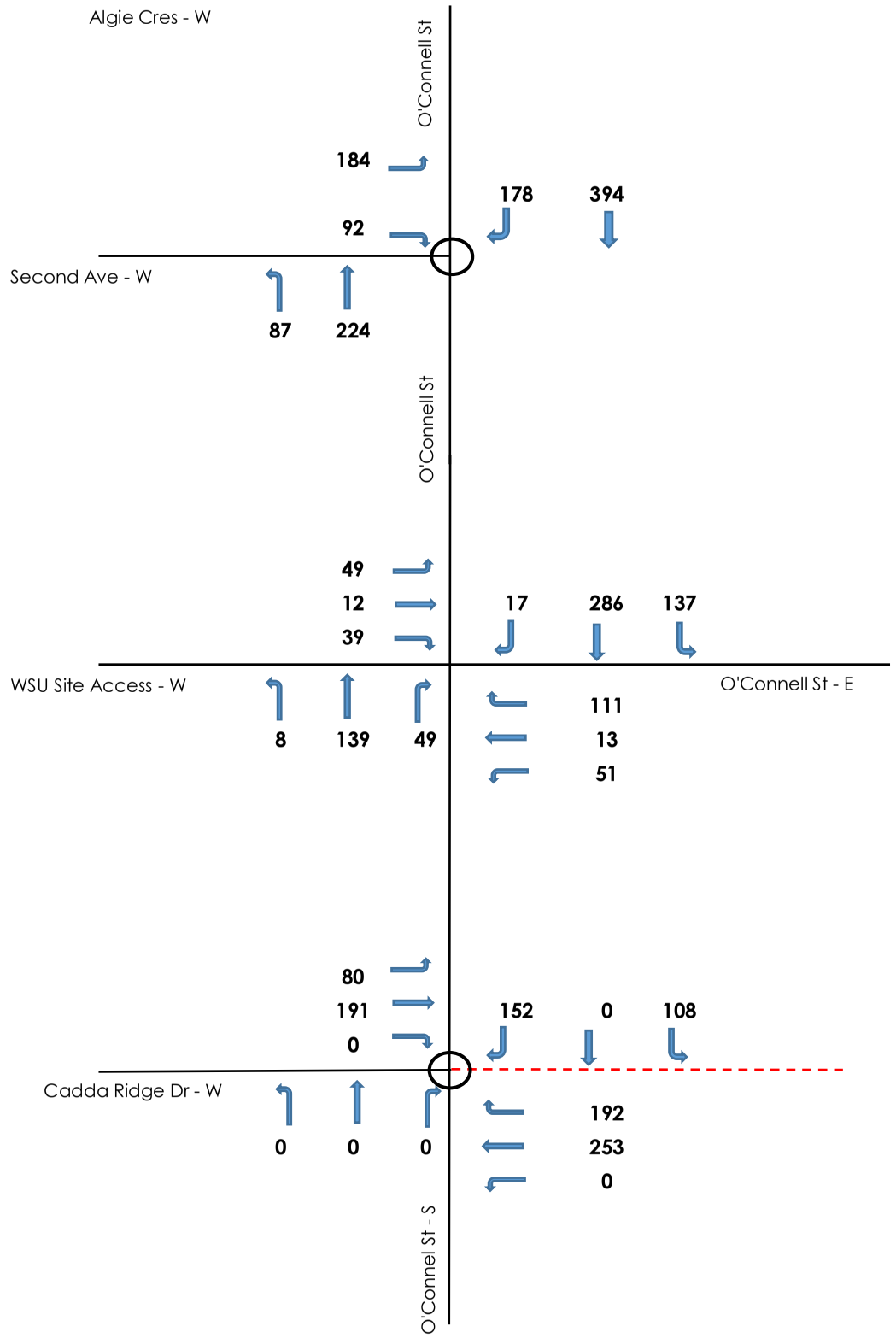
# TTPP

*Existing + BG*

## Future AM



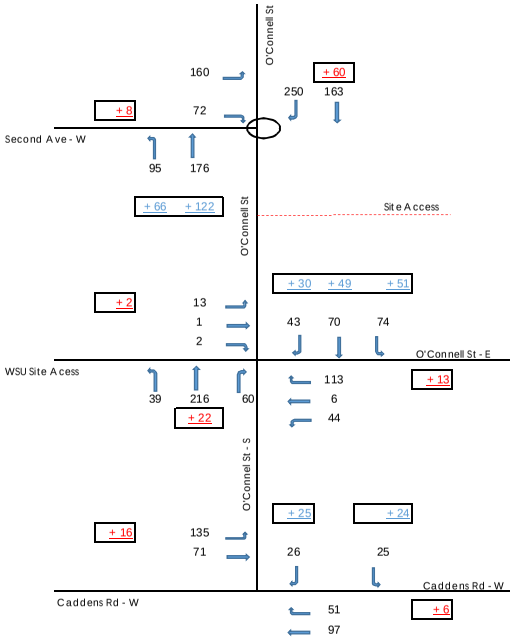

## Future PM



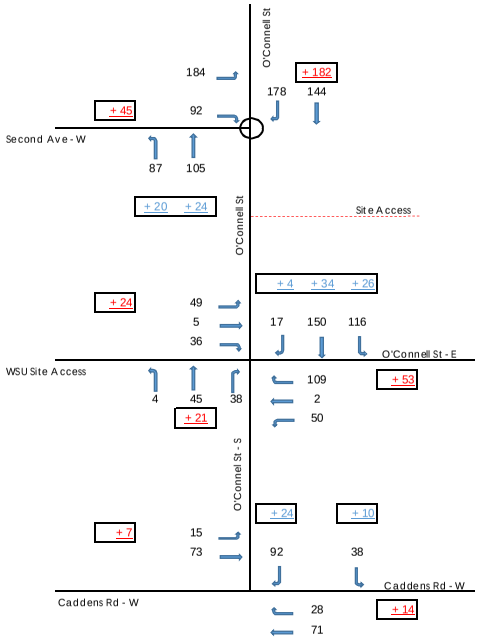
TTPP

Post Developmnet Traffic

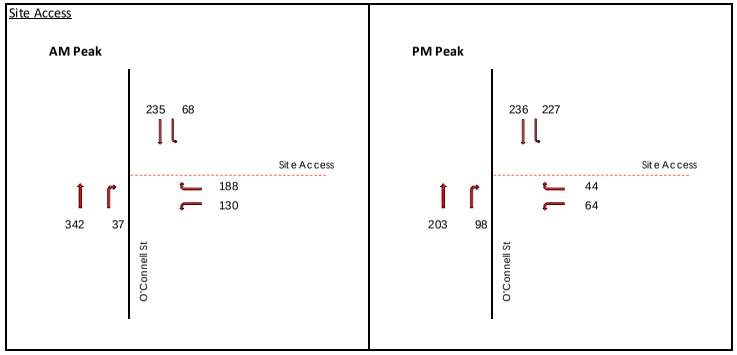
**Weekday AM**




**Weekday PM**




XX Inbound Dev Traffic
XX Outbound Dev Traffic



# Appendix J
# TDT 2013

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

# Technical Direction

For traffic, safety and transport practitioners

OPERATIONAL POLICY – GUIDELINES – ADVICE

Transport Roads & Maritime Services

Published August 2013

Supersedes/Amends TDT 2013/04

TDT 2013/ 04a


# Guide to Traffic Generating Developments

# Updated traffic surveys

## Introduction

The *Guide to Traffic Generating Developments* was first released in 1991. It was revised in 2001 and is in the process of being further revised. It provides guidance on a number of matters related to the traffic impacts of land use developments, most notably on matters relating to traffic generation and parking. Its audience extends beyond that of traffic authorities (RMS and Councils) and is widely used throughout Australia.

Over the past few years a number of surveys have been undertaken to update trip generation and parking information as part of the *Guide*. This Technical Direction provides a summary of the updated information. The information herein should be used to supplement the current Guide and replace those sections of the *Guide* indicated. The information is provided in two parts; (i) a very brief summary below and (ii) more extended summaries in Appendices A-H. More detailed information may be obtained by referral to the RMS Library where reports on each land use may be found.

## Summaries of land use traffic generation

### Low density residential dwellings

Eleven surveys were conducted in 2010, six within the Sydney urban area and five within regional NSW. The results of the surveys were as follows:

Rates

Daily vehicle trips = 10.7 per dwelling in Sydney, 7.4 per dwelling in regional areas
Weekday average evening peak hour vehicle trips = 0.99 per dwelling in Sydney (maximum 1.39), 0.78 per dwelling in regional areas (maximum 0.90).
Weekday average morning peak hour vehicle trips = 0.95 per dwelling in Sydney (maximum 1.32), 0.71 per dwelling in regional areas (maximum 0.85).
(The above rates do **not** include trips made internal to the subdivision, which may add up to an additional 25%).

**Distribution List:**

Director, Infrastructure Development; RMS Development Managers; RMS Land use/Planning Officers; Councils; Land & Environment Court Officers and Consultants.


**For further enquiries**
**www.rms.nsw.gov.au I E** technical.directions.publication@rms.nsw.gov.au



Amendment: Required Action (Pg 3) amended.
Approved: R O'Keefe, Mgr Traffic Policy, Guidelines & Legislation
RMS. 13.298

# Appendix K
# DPIE Planning for Metropolitan Growth Centres

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

ROAD DELAY SOLUTIONS

# North West Growth Centre
# Indicative Layout Plan Revision

## Traffic and Transport Model
## Year 2036

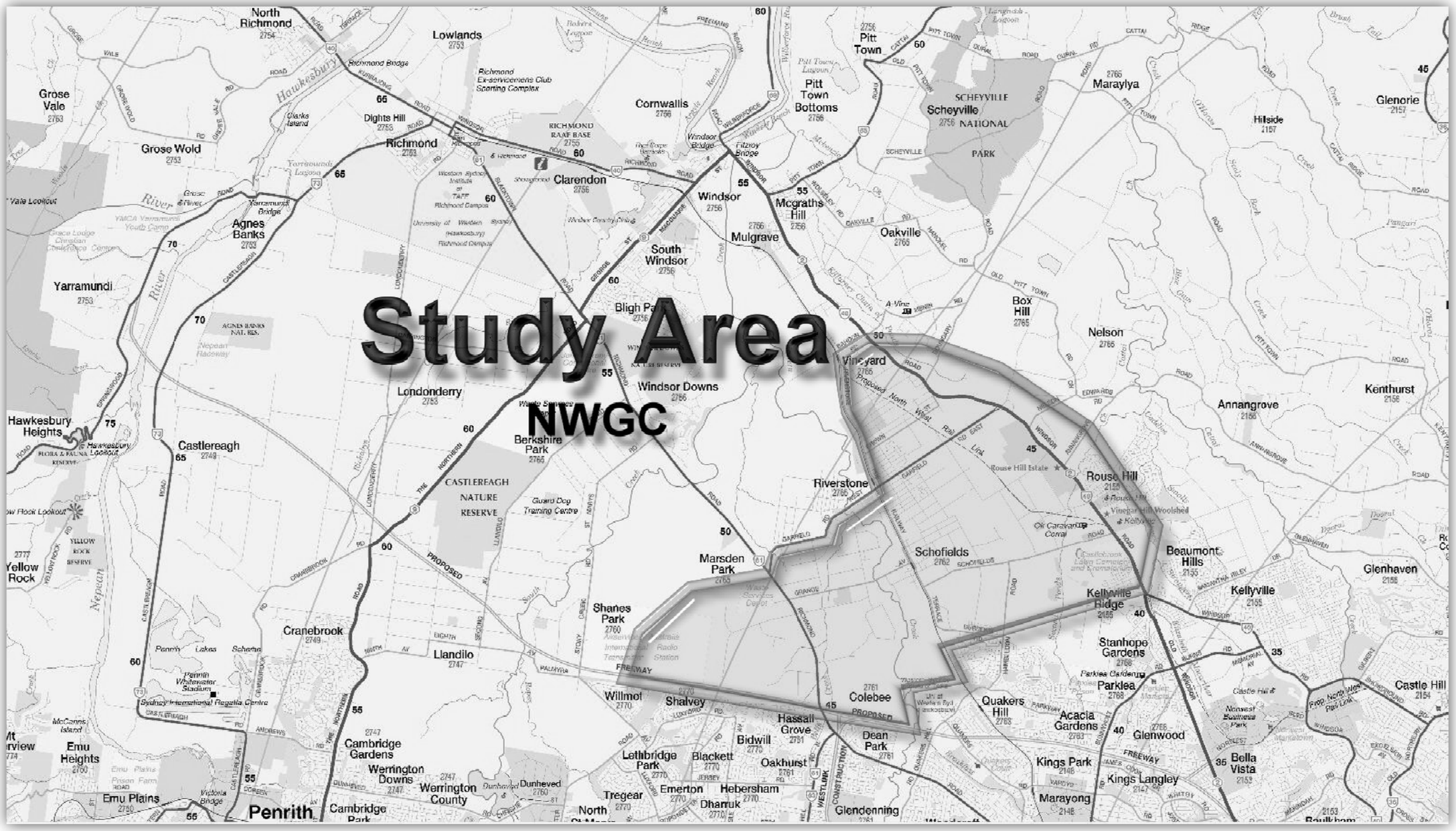
*Prepared in association with...*

URBANHORIZON

*for*

NSW GOVERNMENT
Department of Planning

Reference: 20090056
July 2009
*(This is an A3 document)*

The vehicle generation parameters applied to land use and growth levels throughout the Western Sydney region, have been adapted from recent studies undertaken by Road Delay Solutions and Sims Varley Traffic Systems. Typically...

- North West Growth Centre,
- South West Growth Centre,
- Eastern Creek Precinct,
- Huntingwood Stage1 and Stage 2,
- Erskine Park,
- Penrith LGA Arterial Road Study, and
- St Marys ADI Transport Study.

The vehicle generation parameters, adopted for this project, are presented in *Table 2*.

***Table 1: Typical Trip Distribution Pattern for NWGC***

| | % Netanal Trip Distribution from... | | |
|---|---|---|---|
| **Trip Destination** | **Riverstone** | **Schofields** | **Marsden Park** |
| Windsor / Richmond | 5 | 3 | 1 |
| Hornsby | 1 | 2 | 1 |
| Sydney CBD | 2 | 1 | 1 |
| Parramatta CBD | 4 | 3 | 3 |
| Blacktown CBD | 5 | 3 | 13 |
| Liverpool CBD | 1 | 1 | 1 |
| WSEH | 16 | 8 | 8 |
| Marsden Park | 8 | 7 | 2 |
| Penrith CBD | 3 | 2 | 2 |

***Table 2: Vehicle Generation Parameters by Land Use***

| | Year | | |
|---|---|---|---|
| | **CURRENT** | **2036** | **Total** |
| Number of dwellings | 10,274 | 64,605 | 74,879 |
| Commercial Land (employees) | 7,045 | 39,835 | 46,880 |
| Area of retail land (hectare) | 0 | 0 | 0 |
| Area of industral land (hectare) | 0 | 0 | 0 |
| Area of educational land (hactare) | 0 | 0 | 0 |
| **Trip Generation Rates (Peak Hour)** | | | |
| **Residential** | | | |
| - Vehicle Trips per Dwelling | | 0.57 | |
| - Reduction in Vehicle Trips due to Transport Initiatives | | 0.0% | |
| - Percent Outbound in Morning Peak | | 80% | |
| - Percent Outbound in Evening Peak | | 20% | |
| **Commercial** | | | |
| - Calculated on...100m2 GLFA=2 or Employees=1 | | 1 | |
| - Trips , as above, per Morning Peak | | 0.79 | |
| - Trips, as above, per Evening Peak | | 0.79 | |
| | | | |
| - Reduction in Vehicle Trips due to Transport Initiatives | | 12.5% | |
| - Percent Outbound in Morning Peak | | 15% | |
| - Percent Outbound in Evening Peak | | 85% | |
| **Retail** | | | |
| - Employees per hectare | | 25 | |
| - Trips per Employee in Morning Peak | | 0.83 | |
| - Trips per Employee in Evening Peak | | 0.83 | |
| - Percent Car Driver | | 50% | |
| - Reduction in Vehicle Trips due to Transport Initiatives | | 12.5% | |
| - Percent Outbound in Morning Peak | | 15% | |
| - Percent Outbound in Evening Peak | | 85% | |
| **Industrial** | | | |
| - Employees per hectare | | 20 | |
| - Trips per Employee in Morning Peak | | 0.83 | |
| - Trips per Employee in Evening Peak | | 0.83 | |
| - Percent Car Driver | | 50% | |
| - Reduction in Vehicle Trips due to Transport Initiatives | | 12.5% | |
| - Percent Outbound in Morning Peak | | 15% | |
| - Percent Outbound in Evening Peak | | 85% | |
| **Education** | | | |
| - Employees per hectare | | 25 | |
| - Trips per Employee in Morning Peak | | 0.7 | |
| - Trips per Employee in Evening Peak | | 0.7 | |
| - Percent Car Driver | | 50% | |
| - Reduction in Vehicle Trips due to Transport Initiatives | | 12.5% | |
| - Percent Outbound in Morning Peak | | 15% | |
| - Percent Outbound in Evening Peak | | 85% | |
| **Trip Containment** | | 20% | |

# Appendix L

# TTPA Study for Glenmore Park

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES

Established 1994

# PROPOSED
# GLENMORE PARK STAGE 2

## *Transport Management and Accessibility Plan*

October 2005

Reference 0338

***TRANSPORT AND TRAFFIC PLANNING ASSOCIATES***
***Transportation, Traffic and Design Consultants***
***Suite 603, Level 6***
***282 Victoria Avenue***
***CHATSWOOD 2067***
***Telephone (02) 9411 5660***
***Facsimile (02) 9904 6622***
***Email: ttpa@ttpa.com.au***

## 5.2 EXISTING GLENMORE PARK

The 2001 Census established that there were some 5,447 occupied dwellings in the existing Glenmore Park development at the time of the survey.

Access to and from the surrounding Arterial Road network (ie The Northern Road and Mulgoa Road) from the existing development is restricted to the Glenmore Parkway and Garswood Road intersection. This circumstance and the circuitous internal road layout provides the relatively unique situation where it is possible to establish the vehicle trip generation rate of the estate without the complication of non-related external through movements. An assessment of the AM and PM peak hour movements at the 3 'access' intersections from the 'June' survey indicate the following IN/OUT movements from the Glenmore Park Estate.

| | Total Movements | IN | OUT |
|---|---|---|---|
| AM Peak | 3283 | 915 | 2368 |
| PM Peak | 3706 | 2666 | 1040 |

*(NB The earlier survey provided similar results to the June survey being within ± 2% of the total movements)*

On the conservative estimate that there were some 200 dwellings built and occupied between the undertaking of the 2001 Census (ie 5,647 dwellings), and the traffic surveys (and that a 6% vacancy rate), the traffic movements indicated above translate to the following external trip generation rates and peak period IN vs OUT ratios for the estate.

| | Total (vtph) | IN (%) | OUT (%) |
|---|---|---|---|
| AM Peak | 0.62 | 27 | 73 |
| PM Peak | 0.70 | 72 | 28 |

## 5.3 ORIOLE STREET CATCHMENT

The street layout within the existing Glenmore Park development provided an opportunity to undertake a 'sensitivity test' of the published RTA generation rate and the rates established in Section 5.2. To ascertain the traffic generation rate of residential only development, a survey was carried out of the vehicle movements in the AM (7.00 –9.00am) and PM (4.00 - 6.30pm) peak period travelling to/from Oriole Street at its intersection with Woodlands Drive. This intersection is the only means of vehicular access to some 340 residences and is an area of the estate which was fully developed and at the time of the survey had no new residential construction activity taking place.

The results of the survey indicate the following movements to/from Oriole Street.

**LOCATION: ORIOLE STREET/WOODLANDS DRIVE**
**VEHICLE MOVEMENTS**

| | | AM Peak (7.45 – 8.45am) | PM Peak (5.15 – 6.15pm) |
|---|---|---|---|
| Oriole Street (OUT) | Left<br>Right | 38<br>128 | 11<br>51 |
| Woodlands Drive (IN) | Left<br>Right | 8<br>34 | 35<br>132 |
| **Total** | | **206** | **229** |

On the assumption that of the 340 residences within the surveyed area, approximately 6% (20 residences) were unoccupied, the traffic movements represent an AM and PM peak generation of 0.64 vehicle trips per hour per residence and 0.72 vehicle trips per hour per residence respectively.

## 5.4 ASSESSMENT

From the assessment it is apparent that the RTA published trip generation rate for residential development of 0.85 vtph is not a true reflection of the circumstances which prevail at Glenmore Park. On the basis that the trip generation rate attained from the Oriole Street assessment also includes a component of 'internal' trips (say 6%), the data from this analysis and that of the 'whole' of Glenmore Park would suggest that an external trip generation rate of 0.65 vtph per dwelling in the peak periods is more reflective of the existing traffic activity generated by the Glenmore Park Estate.

Application of this rate (0.65 vtph) to the detached dwelling component and a 0.5 vtph rate to the medium density element, indicates the following likely AM and PM peak vehicle movements for the various phases of construction activity: