TRAFFIC & PARKING ASSESSMENT

CHILD CARE CENTRE

LOT 228 DP1096131, LOT 1 DP784404 & LOT 1 DP779130
29 – 33 CESSNOCK ROAD, GILLIESTON HEIGHTS

PREPARED FOR: APPROVED PTY LTD

JUNE 2024

REF: 24/025

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QUALITY ASSURANCE

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CONTENTS

APPENDICES

FIGURES

PHOTOGRAPHS

TABLES

1. INTRODUCTION

Intersect Traffic Pty Ltd has been engaged by Approved P/L to prepare a Traffic and Parking Assessment Report for a proposed Child Care Centre on Lot 228 DP1096131, Lot 1 DP784404 & Lot 1 DP779130, 29 – 33 Cessnock Road, Gillieston Heights. The site currently contains three residential dwellings all fronting Cessnock Road. The child care centre will operate as long day care centre operating between 6.30 am and 6.30 pm Mondays to Fridays and will cater for up to 132 children with approximately 24 staff. Vehicular access to the development's on-site car park will be via separate entry and exit driveways from Heyes Street. The proposed development plans for the site are provided within ***Appendix 1***.

The aim of this assessment is to determine the likely impact of the proposal on the adjacent existing local and state road network as a result of the additional traffic generated by the development. This report presents the findings of the traffic and parking assessment and includes the following:

1. An outline of the existing road network in the vicinity of the proposed development.
2. An assessment of the likely peak traffic generation from the development.
3. An assessment of the likely traffic impacts of the proposal on the adjacent road network in particular in regard to the capacity of the existing road network.
4. An assessment of the proposed development access and on-site parking.
5. An assessment of the impact of the development on alternate transport mode services and facilities in the vicinity of the site.
6. Presentation of conclusions and any recommendations.

2. SITE DESCRIPTION

The subject site is located on the western side of Cessnock Road, Gillieston Heights immediately north of Heyes Street. It is immediately west of the Gillieston Heights local shopping village and approximately 4.3 km south-west of the Maitland CBD area. ***Figure 1*** below shows the site amidst the residential developments, roads, and commercial surrounds.

Figure 1 – Site Location

Currently the site contains the following property descriptors:

- Formal land title of Lot 228 DP1096131, Lot 1 DP784404 & Lot 1 DP779130.
- Street address of 29 -33 Cessnock Road, Gillieston Heights.
- Total development site area of approximately 3,042 m^2; and
- Land zoning of R1 – General Residential pursuant to Maitland LEP (2011).

The site currently contains three residential dwellings as shown in ***Photograph 1***. These dwellings currently are serviced by single residential vehicular access crossing from Cessnock Road while 33 Cessnock Road which is on the corner of Cessnock Road and Heyes Street also has a single residential access crossing from Heyes Street to the rear of the property as shown in ***Photograph 2***. All four existing vehicular accesses to the site will be removed as part of the development works.

Photograph 1 – Existing site and vehicular accesses from Cessnock Road.

Photograph 2 – Existing site and vehicular access from Heyes Street.

3. EXISTING ROAD NETWORK

3.1 Cessnock Road (MR195)

Cessnock Road is a classified state road (MR195) and operates as a sub-arterial road under a functional road hierarchy providing access between Maitland to the north and Kurri Kurri and Cessnock to the south-west. Cessnock Road also provides a connection for both towns to the Hunter Expressway (M15) which provides access to further destinations i.e. Newcastle and Singleton. As a classified state road Cessnock Road is under the care and control of Transport for NSW (TfNSW). Near the site Cessnock Road is a four-lane two-way road with additional turning lanes at major intersections between upright kerb and gutter with on on-road cycleway along the western side of the road and an off-road shared pathway along the eastern side of the road adjacent to the local shopping village. On-street parking along the site frontage is prohibited with a clearway in operation and lane widths over the proposed development frontage vary between 3.0 and 3.5 metres. A speed limit of 60 km/h is in force at this location and at the time of inspection, Cessnock Road was observed to be in excellent condition (***Photograph 3***).

Photograph 3 – Cessnock Road along site frontage.

3.2 Redwood Drive

Redwood Drive is a local collector road under the care and control of Maitland City Council with its primary function distributing traffic from the eastern part of Gillieston Heights to the sub-arterial road network as well as providing vehicular access to properties on its length. In the vicinity of the site, it is a two lane two way sealed urban road between kerb and gutter with additional turning lanes at Cessnock Road. The total sealed carriageway width is approximately 10 metres wide allowing some on-street car parking along its length. A 50 km/h speed limit applies to this section of road and at the time of inspection Redwood Drive in the vicinity of the site was observed to be in good condition (see ***Photograph 4***). Redwood Drive intersects with Cessnock Road and Heyes Road via a signalised four-way cross intersection.

Photograph 4 – Redwood Drive near Cessnock Road.

3.3 Heyes Street

Heyes Street is a local collector road under the care and control of Maitland City Council with its primary function distributing traffic from the western part of Gillieston Heights to the sub-arterial road network as well as providing vehicular access to properties on its length. In the vicinity of the site, it is a two lane two way sealed urban road between kerb and gutter with additional turning lanes at Cessnock Road. The total sealed carriageway width is approximately 9 metres wide allowing some on-street car parking along its length. A 50 km/h speed limit applies to this section of road and at the time of inspection Heyes Street in the vicinity of the site was observed to be in fair condition (see ***Photograph 5***). Heyes Street intersects with Cessnock Road and Redwood Drive via a signalised four-way cross intersection.

Photograph 5 – Springfield Drive near New England Highway.

4. ROAD NETWORK IMPROVEMENTS

Future upgrades to the road network will occur as the Gillieston Heights area develops with major new residential areas expected to develop to the west and south of the site. This will include the widening of Cessnock Road further north and south of the development to increase the capacity of Cessnock Road as well as the construction of a number connecting intersections to Cessnock Road with high levels of intersection control.

Maintenance of Cessnock Road, Heyes Street and Redwood Drive will be undertaken by Maitland City Council in line with Maitland City Council and TfNSW maintenance programs.

5. TRAFFIC VOLUMES

Intersect Traffic undertook intersection traffic counts at the Cessnock Road / Redwood Drive / Heyes Street signalised intersection during likely AM and PM peak traffic periods. These counts were undertaken on Tuesday 28th May 2024 (PM peak) and Wednesday 29th May 2024 (AM peak) and the peak hour periods counted were 8 am – 9 am and 3 pm to 4 pm. The count results sheets are provided in ***Attachment B***.

The resulting existing 2024 two-way mid-block traffic volumes extracted from this data and the predicted 2034 two-way mid-block traffic volumes predicted from this data using a 1.5 % p.a. background traffic growth rate, as recommended by TfNSW for the lower hunter region, are as shown in ***Table 1*** below.

Table 1 – Existing and future two-way mid-block traffic volume data.

Road	Section	2024		2034@1.5% p.a.	
		AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)
Cessnock Road	north of Redwood Drive	1438	1424	1669	1653
Cessnock Road	south of Redwood Drive	1598	1481	1855	1719
Redwood Drive	east of Cessnock Road	523	469	607	544
Heyes Street	west of Cessnock Road	53	88	62	102

These current and future baseline traffic volumes without development have been adopted in this assessment.

6. ROAD CAPACITIES

The capacity of urban roads is generally determined by the capacity of intersections. However, Table 4.3 of the *RTA's Guide to Traffic Generating Developments* provides some guidance on mid-block capacities for urban roads for a level of service C (LoS C). This table is reproduced below.

From this table Cessnock Road being a four-laneway two-way undivided road with clearway conditions would have a one-way capacity of 1,800 vtph or a two-way road capacity of at least 3,600 vtph on the basis a LoS C is considered satisfactory. However, as a sub-arterial road it is still acceptable for Cessnock Road to have a (LoS) D with one lane capacities of at least 1,100 vtph. Therefore, Cessnock Road is considered to have a two-way mid-block capacity of at least 4,400 vtph.

Redwood Drive being a two-lane two-way local collector road also providing vehicular access to the local shopping village would have a one-way capacity of 900 vtph and a two-way capacity of 1,800 vtph for a satisfactory LoS C.

Table 4.3
Typical mid-block capacities for urban roads with interrupted flow

Type of Road	One-Way Mid-block Lane Capacity (pcu/hr)	
Median or inner lane:	Divided Road	1,000
	Undivided Road	900
Outer or kerb lane:	With Adjacent Parking Lane	900
	Clearway Conditions	900
	Occasional Parked Cars	600
4 lane undivided:	Occasional Parked Cars	1,500
	Clearway Conditions	1,800
4 lane divided:	Clearway Conditions	1,900

Source: - RTA's Guide to Traffic Generating Developments (2002).

As Heyes Street only provides access to residential dwellings the environmental capacity of the road is the governing capacity threshold. The environmental capacity thresholds are provided in ***Figure 4.6*** of the RTA's *Guide to Traffic Generating Developments (2002)* reproduced below.

Table 4.6
Environmental capacity performance standards on residential streets

Road class	Road type	Maximum Speed (km/hr)	Maximum peak hour volume (veh/hr)
Local	Access way	25	100
	Street	40	200 environmental goal
			300 maximum
Collector	Street	50	300 environmental goal
			500 maximum

Note: Maximum speed relates to the appropriate design maximum speeds in new residential developments. In existing areas maximum speed relates to 85th percentile speed.

Source: - RTA's Guide to Traffic Generating Developments (2002).

Based on this table Heyes Street would have an environmental capacity of up to 500 vtph.

Therefore, the local and state road network capacities adopted in this assessment are.

- Cessnock Road – 3,600 vtph.
- Redwood Drive – 1,800 vtph; and
- Heyes Street – 500 vtph.

As existing traffic volumes as shown in ***Section 5*** are below these capacity thresholds it is reasonable to conclude that the existing state and local road network has spare capacity to cater for additional development in the area.

7. ALTERNATIVE TRANSPORT MODES

Rover Motors bus routes 164 (Cessnock to Maitland) and 166 (Kurri Kurri to Maitland) provide a public transport (bus) connection between Maitland and Cessnock / Kurri Kurri. Route 164 runs along Cessnock Road past the site while Route 166 turns at Redwood Drive and runs through the Sadlers Ridge Estate connecting back to Cessnock Road via Scenic Drive. The nearest bus stops to the site are located on Cessnock Road at Davies Street (northbound) 75 metres south of the site (see ***Photograph 6***) and at Oakwood Village (southbound) approximately 230 metres north of the site both within convenient walking distance of the site. Bus stops also exist on Redwood Drive for Route 166 near Pine Street approximately 300 metres east of the site. These services provide a regular 1-hour service (45 minutes during peak hours) in the weekday and weekend AM and PM periods. The service connects the site to the residential areas of Cessnock, Kurri Kurri and Heddon Greta as well as the retail, commercial, health and transport (rail) hubs in Maitland and would be of some benefit for staff of the development.

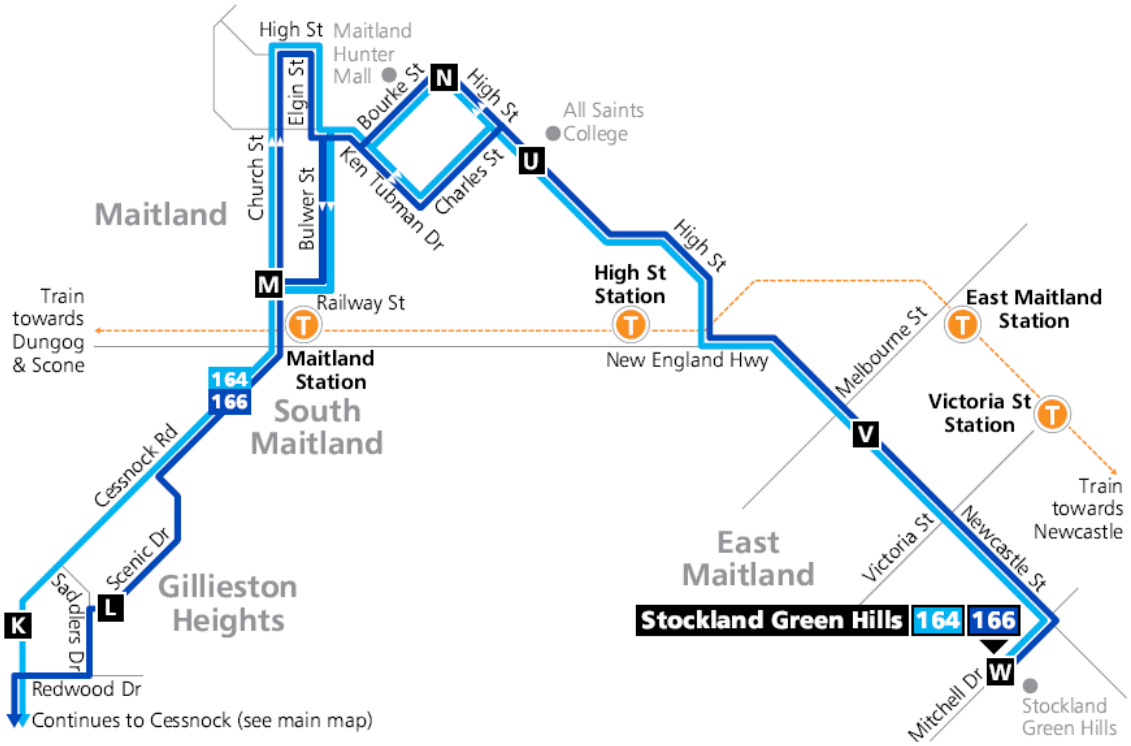


Figure 2 – Local Bus Routes 164 &166

There are constructed concrete pedestrian footpaths along the western side of Cessnock Road from Russell Street through to Fanning Street covering most of the Cessnock Road frontage through Gillieston Heights (see ***Photograph 7***). An off-road shared concrete pathway (see ***Photograph 8***) runs along the eastern side of Cessnock Road from the southern outskirts of Gillieston Heights past the site to William Street. Maitland City Council has plans to extend this cycleway to the current Gillieston Heights to Maitland shared off road pathway which currently ends at Fanning Street. The 300-metre missing link will be constructed when funding is available. There are also on-road cycle lanes on the western side of Cessnock Road through the township as well as on the eastern side of Cessnock Road where there is no off-road shared pathway. Safe pedestrian crossing of Cessnock Road, Redwood Drive and Heyes Street near the site is available through the pedestrian phases within the Cessnock Road / Redwood Drive / Heyes Street signalised intersection (see ***Photograph 9***). Overall, except for in Heyes Street the pedestrian and cycleway infrastructure servicing the site is excellent.

Photograph 6 – Cessnock Road bus stop south of site (Davies Street).

Photograph 7 – Cessnock Road footpath along site frontage.

Photograph 8 – Off-road shared pathway eastern side of Cessnock Road.

Photograph 9 – Signalised Cessnock Road pedestrian crossing at Heyes Street.

8. DEVELOPMENT PROPOSAL

The proposed development involves the construction of a long day child care centre with associated on-site car parking for staff and the dropping off and picking up of children by parents. The centre will operate between 6.30 am and 6.30 pm Mondays to Fridays. The proposed development plans are provided within ***Appendix 1***. Specifically, the proposal includes the following:

- Construction of a child care building for 132 children with the following age splits;
  - 0 – 1 years – 16 babies.
  - 0 – 2 years – 16 babies.
  - 2 – 3 years – 40 children.
  - 3 – 4 years – 30 children; and
  - 4 – 5 years – 30 children.
- Reception area, kitchen, Director's office, laundry, staff facilities and amenities.
- Outdoor play area.
- On-site car parking for staff and parents totalling 33 spaces with 1 accessible space; and
- Separate entry and exit driveways to Heyes Street with the entry driveway being 45 metres west of Cessnock Road and the exit driveway being 15 metres west of Cessnock Road i.e. 30 metre separation, in accordance with Australian Standards requirements and constructed to Maitland City Council requirements and specifications.

9. TRAFFIC GENERATION & DISTRIBUTION

The *RTA's Guide to Traffic Generating Development's* provides specific advice on the traffic generation potential of various land uses. In regard to Child Care Centres the following advice is provided.

Table 3.6
Traffic generation rates

Centre Type	Peak Vehicle Trips / Child		
	7.00-9.00am	2.30-4.00pm	4.00-6.00pm
Pre-school	1.4	0.8	-
Long-day care	0.8	0.3	0.7
Before/after care	0.5	0.2	0.7

Therefore, the potential traffic generation from the child care centre can be calculated as follows (rounded up).

AM peak

PVT = 0.8 x 132 = 106 vtph

PM peak

PVT = 0.7 x 132 = 93 vtph

It is however noted that there is likely to be 50% passing traffic attending the child care centre during drop off and pick up as parents drop off and pick up the children on the way to work and on the way

home from work. This has been accounted for within the modelling undertaken for this project and the calculation of post development mid-block traffic volumes on Cessnock Road.

In distributing this traffic onto the state and local road network the following assumptions are made.

- The centre will equally attract traffic from the residential areas to the north, south, east and west of the site therefore 25% of traffic will have origin / destinations along all of Cessnock Road (north and south), Redwood Drive and Heyes Street.
- In both the AM and PM peak there will be 50 % inbound and 50 % outbound trips.

The resulting likely peak hour traffic distribution for development traffic is therefore calculated and shown in ***Figure 3*** below.

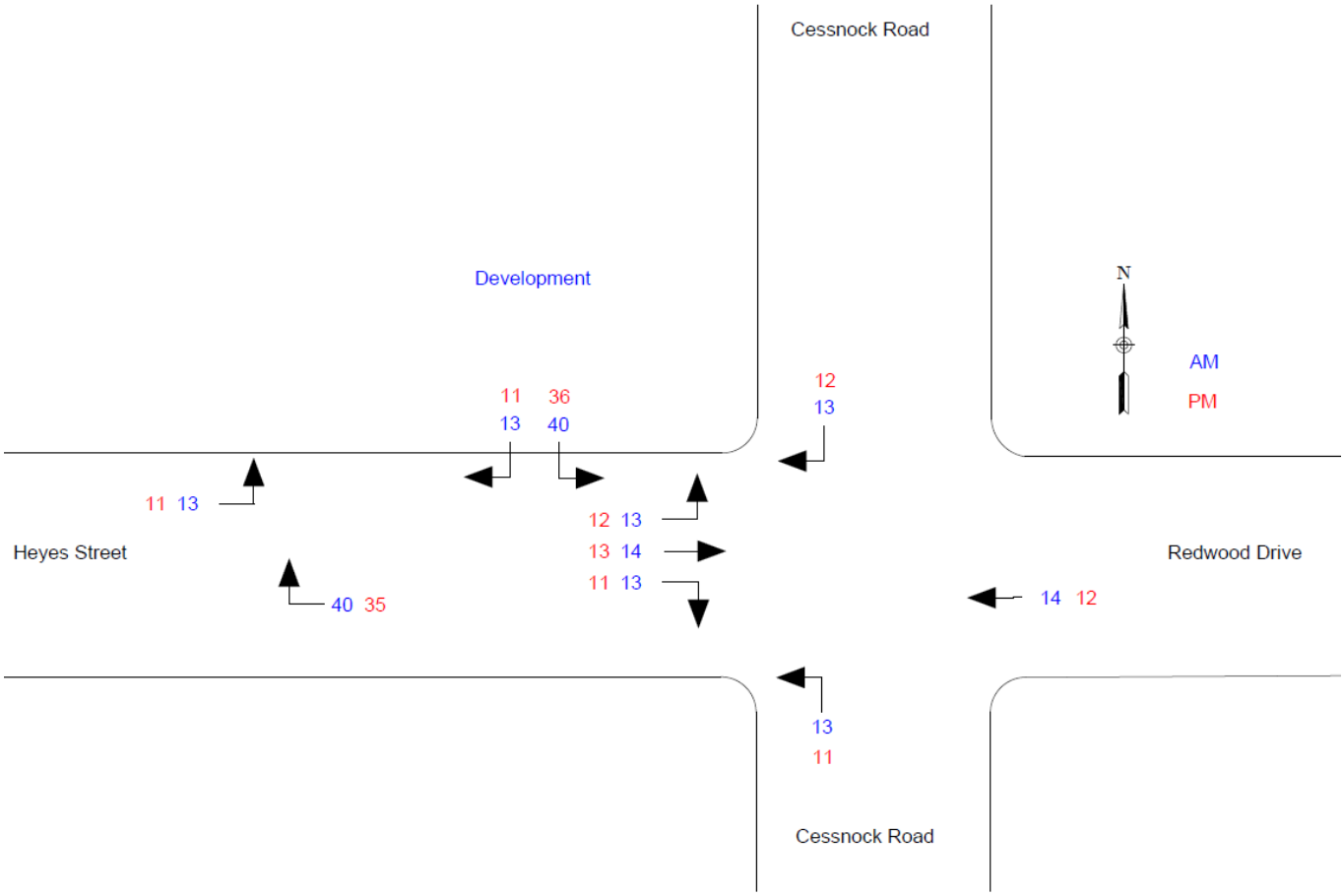


Figure 3 – Development traffic trip distribution.

10. TRAFFIC IMPACTS OF DEVELOPMENT

10.1 – Road Network and Intersection Capacity

It has previously been shown in ***Section 6*** of this report that the adjoining road network is currently operating within its technical and environmental two-way mid-block capacity. Section 9 determined the proposed development will generate 106 vtph in the AM peak and 93 vtph in the PM peak traffic periods however 50 % of this traffic is likely to be already on the sub-arterial road network as parents travel to and from work when dropping off and picking up their children. This traffic is distributed as shown in ***Figure 3*** above and does not result in the two-way mid-block road capacity thresholds being reached as demonstrated in ***Table 2*** below. Therefore, it is concluded that the proposed development does not adversely impact on mid-block traffic flow on the state and local road networks.

Table 2 – Two-way mid-block capacity assessment.

Road	Section	2024		2034		Capacity	Development Traffic	
		AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)	(vtph)	AM (vtph)	PM (vtph)
Cessnock Road	north of Redwood Drive	1451	1436	1682	1665	4400	26	24
Cessnock Road	south of Redwood Drive	1611	1492	1868	1730	4400	26	22
Redwood Drive	east of Cessnock Road	537	482	621	557	1800	28	25
Heyes Street	west of Cessnock Road	119	147	128	161	500	80	71

The main intersection impacted by the development will be the Cessnock Road / Redwood Drive / Heyes Street signalised cross intersection. To determine the impact of the development on this intersection it has been modelled using the Sidra Intersection modelling program. This software package predicts likely delays, queue lengths and thus levels of service that will occur at intersections. Assessment is then based on the level of service requirements of TfNSW shown below in Table 4.2 below. Assumptions made in this modelling were:

- The intersection layout will remain as per current conditions.
- Traffic volumes used in the modelling were as described in ***Section 5*** with the assessment years being 2024 and 2034.
- A background traffic growth rate of 1.5% per annum has been adopted as recommended for the lower hunter region by TfNSW.
- An allowance for 50% passing traffic has been included in the assessment; and
- Traffic generated by the development is distributed as per ***Figure 3.***

Table 4.2
Level of service criteria for intersections

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

Source: - RTA's Guide to Traffic Generating Developments (2002).

The summarised 'all vehicles' results of the modelling are provided in ***Table 3*** below. The Sidra Movement Summary Tables for each model are provided in ***Appendix 3***.

Table 3 – Cessnock Rd / Redwood Dr / Heyes St Signals – Sidra Modelling – Results Summary

Modelled Peak	Degree of Saturation (v/c)	Worst Delay (s)	Worst Level of Service	95% back of queue length (cars)
2024 AM	0.657	17.5	B	11.7
2024 PM	0.583	15.4	B	13.2
2024 AM + development	0.732	18.3	B	11.1
2024 PM + development	0.568	16.3	B	12.5
2034 AM with development	0.833	21.4	B	16.4
2034 PM with development	0.749	17.8	B	16.2

The modelling shows the current signalised intersection operates satisfactorily during the AM and PM peak periods and will continue to do so post development through to at least 2034. The impact of the development is minor with no loss of LoS resulting from the development. Therefore, it is reasonable to conclude the development does not adversely impact on the operation of this intersection and as development traffic is further diluted through the road network will not adversely impact on the operation of intersections on the wider state and local road network.

10.2 – Site Access

The proposed development is serviced by separate entry and exit driveways 3 metres wide which is consistent with at least a Category 2 Driveway and complies with Maitland City Council's requirement for separate driveways. This access will service a 33-space car park for Class 1 employee and Class 3 short term parking accessed off a local road therefore in accordance with Table 3.1 of *AS2890.1-2004* is required to be a Category 2 access. *Table 3.2 of AS2890.1-2004* identifies a Category 2 access as a combined entry / exit driveway between 6 to 9 metres wide. The proposed access arrangements though being separate entry and exit driveways is at least compliant with a Category 2 access.

With Robert Road being a 50 km/h road the required vehicular sight lines from the access needs to be a minimum 45 metres or 69 metres desirable. The sight distance to the entry driveway would be in excess of minimum 50 metres which would be compliant with the Australian Standard while the sight distance from the exit driveway back to Cessnock Road is only likely to be a minimum 20 metres. However in the 20 metres from the signalised intersection maximum vehicle speeds would only likely to be a maximum 15 – 20 km/h for which a minimum sight distance (5 second gap method) of 20 metres would be suitably safe, particularly given the platooning of traffic resulting from the signals operation or if Council did not agree with this the exit driveway could be constructed as a left turn out only access with little inconvenience to traffic generated by the development. The requirements for pedestrian sight lines within *AS2890.1-2004* can be ensured through conditioning of the consent to ensure no walls, fencing or landscaping above 1.2 metres high exists within the pedestrian sight triangle required by *AS2890.1-2004*.

With through two-way traffic volumes on Heyes Street being a maximum of 161 vtph in 2034 and with right and left turning traffic into the site being a maximum of 40 vtph and 13 vtph respectively a turn lane warrant assessment at the entry access in accordance with Figure 3.25 of Austroads *Guide to Traffic Management – Part 6 – Intersections, Interchanges and Crossings Management* determines that the site access need only be a BAR / BAL layout i.e. no turning lanes are required.

Overall, it is concluded that the proposed access arrangements to the development are satisfactory being suitably safe and would comply with the requirements of Australian Standards and Austroads.

10.3 – On-Site Car Parking

On-site parking and manoeuvrability should comply with Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking and Maitland City Council's DCP (2011) – Part C11 – Vehicular access & parking.* The parking provision rates applicable for the development taken from the DCP are.

Child Care Centre
1 space per 4 children in attendance or part thereof.

Therefore, the likely peak parking demand (DCP compliant) generated by this development is calculated as follows.

DCP Parking requirement = 132 / 4 = 33 car spaces.

With the proposed development providing 33 car spaces on the site, it is considered the development has provided sufficient car spaces to meet the likely peak parking demand for the development therefore is compliant with the Maitland DCP car parking rates.

In considering the car parks compliance with AS2890.1 – 2004 the following design detail is noted as scaled from the drawings which will need to be confirmed at CC stage.

- Car spaces are a minimum of 2.6 metres wide x 5.4 metres long.
- Minimum aisle width of 6.6 metres has been provided.
- The blind aisle layout has been provided with a 1-metre-wide blind aisle extension at both ends and the separate entry and exit driveways ensures convenient manoeuvring through the site.
- A clearly defined footpath and stairs from the car park to the building entry has been provided within the car park; and
- As there is a no parking zone along the Heyes Street frontage of the site associated with the signals operation there is no nexus from this development for the provision of a footpath along the Heyes Street frontage of the site. An internal footpath connection to the existing Cessnock Road footpath has been provided in the development.

Therefore, on review it is determined that the proposed car parking design is compliant with AS2890.1-2004 and that overall suitable and sufficient on-site car parking has been provided within the development.

10.4 – Site servicing

In terms of servicing of the site it should be noted that as a child care centre:

- Most consumables are purchased by staff and transported to site within private light vehicles.
- Waste collection has been designed as an on-site collection by private contractor standing within the car park during non-operating hours for the child care centre so as to not interfere with the drop-off and pick-up of children. The collection vehicle enters the site in a forward direction and manoeuvres through the site then driving forward out of the site; and
- Other deliveries to the site will be infrequent (once or twice a day) using smaller light vehicles who can use the vacant car parks during non-peak drop off and pick up times. All these deliveries would occur outside the peak parking demand periods for the child care centre and will not conflict with the majority of child drop off and pick up traffic movements. No separate service bay for these deliveries is required.

Overall, it is concluded the use of the site turning bay for servicing during non-operating periods of the child care centre or even outside the peak drop off and pick up times for the centre will ensure suitably safe and convenient servicing of the child care centre will occur.

10.5 - Construction Traffic

The construction of the development will result in additional traffic entering and exiting the site. It is estimated that during the peak construction periods up to 15 construction employees will be on-site at any one time. If a car occupancy rate of 1.2 is assumed for employee traffic this would result in an AM and PM peak traffic flow to the site of in the order of 13 vtph. This of course will also increase the peak parking demand at the site by a similar number during construction.

Material deliveries will add to this traffic with peak materials delivery traffic expected during the pouring of concrete slabs within the construction period. It is likely that a further 5 vtph could occur during the AM peak period as a result of this construction activity. Therefore overall, it is estimated that the peak construction traffic generation resulting from the construction of the development will be in the order of up to 18 vtph during the AM peak or PM peak traffic periods. This is still significantly less than the operational traffic generation from the site and thus would not adversely impact on the local road network.

Construction traffic is a short-term traffic impact that is best managed through the preparation of a construction traffic management plan prepared and implemented by the building contractor prior to commencement of construction activities. This plan may seek to minimise the impacts of construction activities by designating travel routes, access points, construction employee parking areas, material delivery procedures and times etc. This plan is best prepared, implemented and enforced by the head contractor. It is recommended that a construction traffic management plan be prepared and implemented prior to the commencement of construction activities.

11. ALTERNATE TRANSPORT MODE FACILITIES

The proposed development is unlikely to generate any significant additional external pedestrian and bicycle traffic from both staff and parents. Some parents may choose to walk to the centre, but most parents will be driving to and from the centre on the way to and from work. Therefore, no nexus exists for the provision of additional external pedestrian and cycling facilities resulting from the development particularly given the existing pedestrian and cycling facilities around the site are excellent.

The site is already well serviced by a public transport (bus) service, and it would not be expected that the development will generate any significant increase in public transport demand. Therefore, no nexus would exist for additional public transport services or infrastructure resulting from this development.

12. CONCLUSIONS

This traffic and parking assessment for a 132-place long day child care centre on Lot 228 DP1096131, Lot 1 DP784404 & Lot 1 DP779130, 29 – 33 Cessnock Road, Gillieston Heights has concluded the following.

- Existing traffic volumes on the adjacent state and local road network are below the two-way mid-block road capacity and environmental capacity thresholds, as relevant, of the existing road network indicating the existing adjacent road network has spare capacity to cater for development in the area.
- It is expected that the additional traffic generated by the development will be a maximum of 106 vtph in the AM peak period and 93 vtph in the PM peak period.
- As a local child care centre, it would be expected that at least 50% of traffic generated by the development with parents already driving to and from work past the development site.

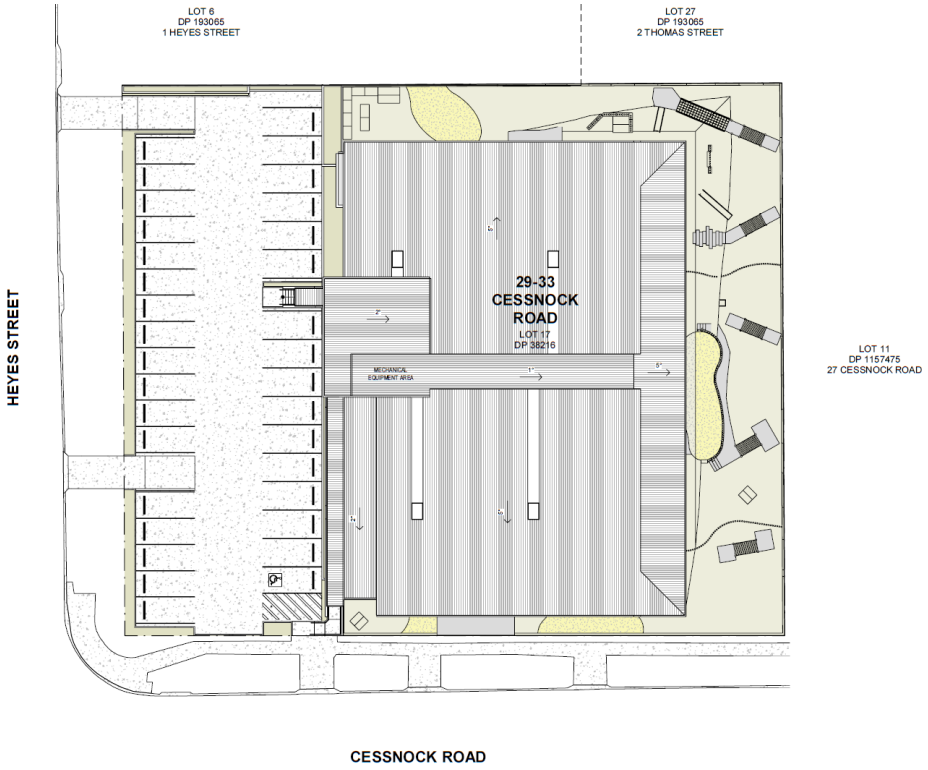
- The proposed development does not adversely impact on mid-block traffic flow on the state and local road networks.
- Sidra Intersection modelling shows the current signalised Cessnock Road / Redwood Drive / Heyes Street intersection operates satisfactorily during the AM and PM peak periods and will continue to do so post development through to at least 2034. The impact of the development is minor with no loss of LoS resulting from the development. Therefore, it is reasonable to conclude the development does not adversely impact on the operation of this intersection and as development traffic is further diluted through the road network will not adversely impact on the operation of intersections on the wider state and local road network.
- The proposed access arrangements to the development are satisfactory being suitably safe and would comply with the requirements of Maitland City Council, Australian Standards and Austroads.
- With the proposed development providing 33 car spaces on the site within the site car parking, it is considered the development has provided sufficient car spaces to meet the likely peak parking demand for the development and is compliant with the Maitland DCP car parking rates.
- The proposed car parking design is compliant with AS2890.1-2004 and that overall suitable and sufficient on-site car parking has been provided within the development.
- Overall, it is considered that the proposed servicing facilities provided for the development are satisfactory and suitable for the development.
- That a construction traffic management plan be prepared and implemented prior to the commencement of construction activities.
- No nexus exists for the provision of additional external pedestrian and cycling facilities resulting from the development particularly given the existing pedestrian and cycling facilities around the site are excellent.
- The site is already well serviced by a public transport (bus) service, and it would not be expected that the development will generate any significant increase in public transport demand. Therefore, no nexus would exist for additional public transport services or infrastructure resulting from this development.

13. RECOMENDATION

Having carried out this traffic and parking assessment for a proposed 132 place long day childcare centre on proposed Lot 228 DP1096131, Lot 1 DP784404 & Lot 1 DP779130, 29 – 33 Cessnock Road, Gillieston Heights, it is recommended that the proposal can be supported as it will not have an adverse impact on the adjacent road network and would comply with all relevant Maitland City Council, Australian Standards and TfNSW requirements.

JR Garry BE (Civil), Masters of Traffic
Director
Intersect Traffic Pty Ltd

APPENDIX 1
DEVELOPMENT PLANS



CNA DESIGN STUDIO

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REV	DATE	COMMENTS
A	29/01/2024	ISSUE FOR REVIEW
B	21/04/2024	ISSUE FOR REVIEW

DRN	CHKD	WKFD
DS	NJH	
TV		

PROJECT : **GILLIESTON HEIGHTS CHILDCARE**

CLIENT : **KAINE TARLINTON**

SITE : **29 - 33 CESSNOCK ROAD GILLIESTON HEIGHTS NSW 2321**

DRAWING : **SITE PLAN**

WORK IN FIGURED DIMENSIONS IN PREFERENCE TO SCALE. CHECK DIMENSIONS AND LEVELS ON SITE PRIOR TO THE ORDERING OF MATERIALS OR THE COMPLETION OF WORKSHOP DRAWINGS. IF IN DOUBT ASK. REPORT ALL ERRORS AND OMISSIONS.

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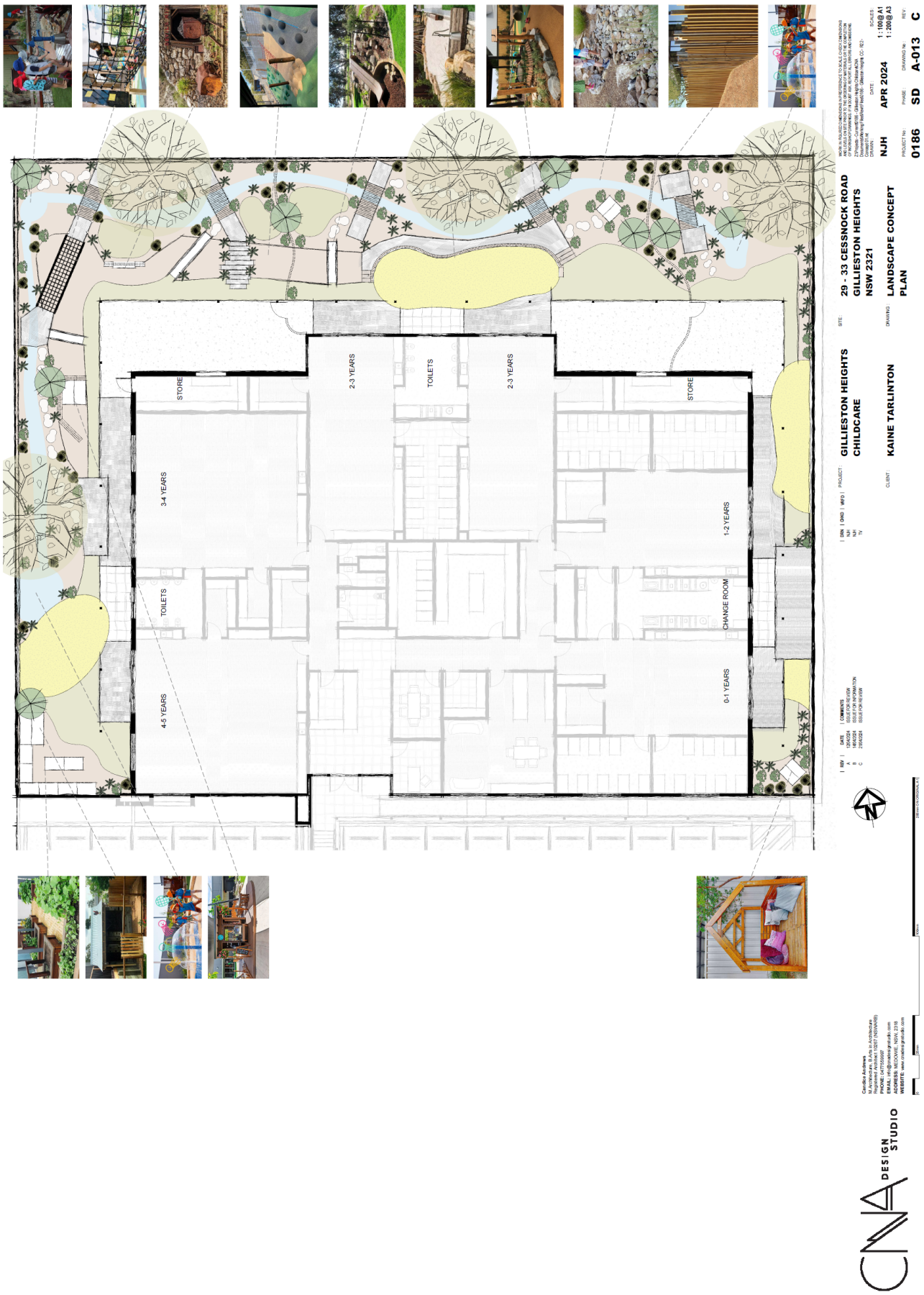
DRAWN :	DATE :	SCALES :
DS	JAN 2024	1 : 200@ A1 1 : 200@ A3

PROJECT No :	PHASE :	DRAWING No :	REV :
0186	SD	A-010	B

0 20mm 500mm 200mm ON ORIGINAL A1

APPENDIX 1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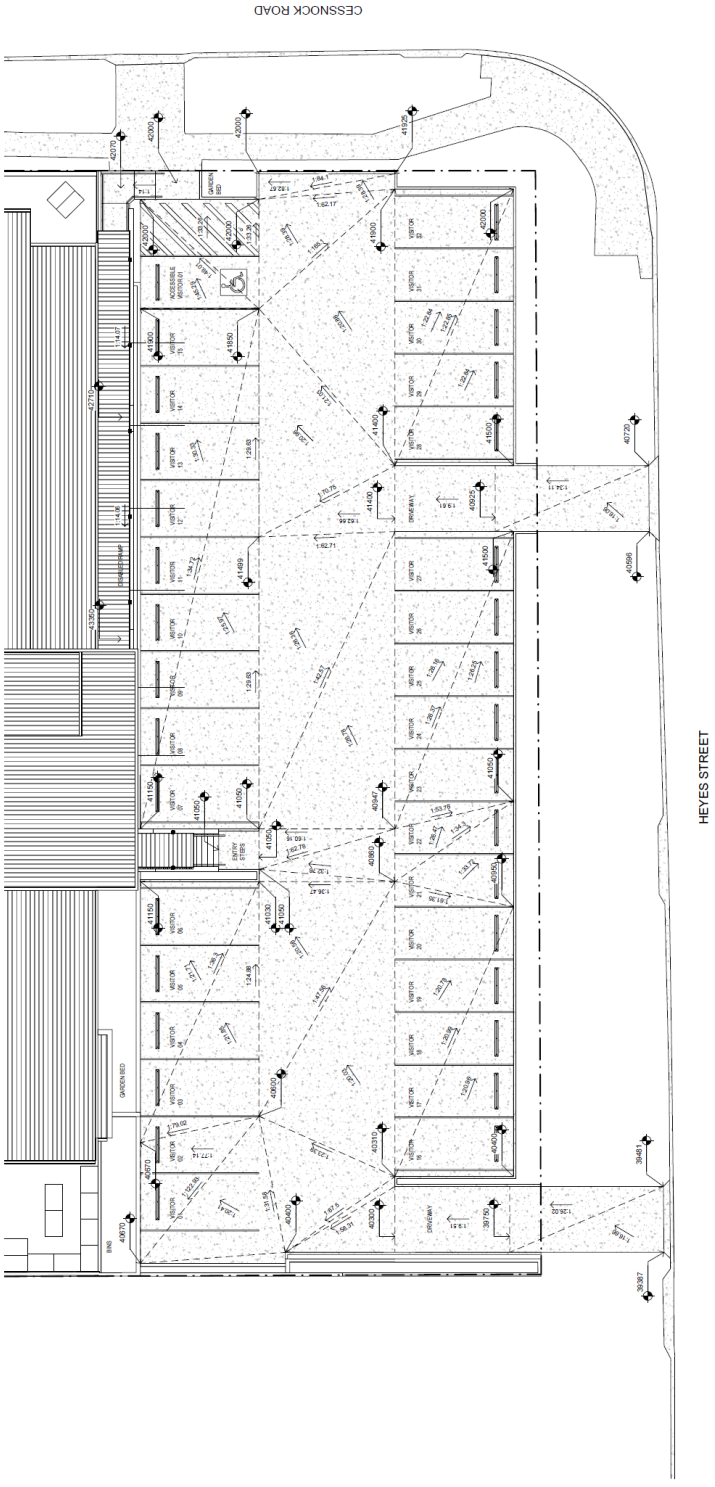
2-3 YEARS
TOILETS
2-3 YEARS
STORE
3-4 YEARS
1-2 YEARS
TOILETS
CHANGE ROOM
4-5 YEARS
0-1 YEARS
29 - 33 CESSNOCK ROAD
GILLIESTON HEIGHTS
NSW 2321
LANDSCAPE CONCEPT PLAN
GILLIESTON HEIGHTS CHILDCARE
KAINE TARLINTON
NJH
APR 2024
1:100@A1
1:200@A3
0186
SD
A-013
C
CNA DESIGN STUDIO



REV	DATE	COMMENTS
A	27/04/2024	ISSUE FOR REVIEW
B	14/05/2024	ISSUE FOR INFORMATION
C	27/04/2024	ISSUE FOR REVIEW

DSN	DWG	VERS	PROJECT:
NH			GILLIESTON HEIGHTS CHILDCARE
NH			
TV			

CLIENT: KAINE TARLINTON

SITE: 29 - 33 CESSNOCK ROAD GILLIESTON HEIGHTS NSW 2321

DRAWING: CARPARK & PUBLIC DOMAIN PLAN

DRAWN: TV | DATE: APR 2024 | SCALES: 1:100@A1 1:200@A3

PROJECT No: 0186 | PHASE: SD | DRAWING No: A-015 | REV: C

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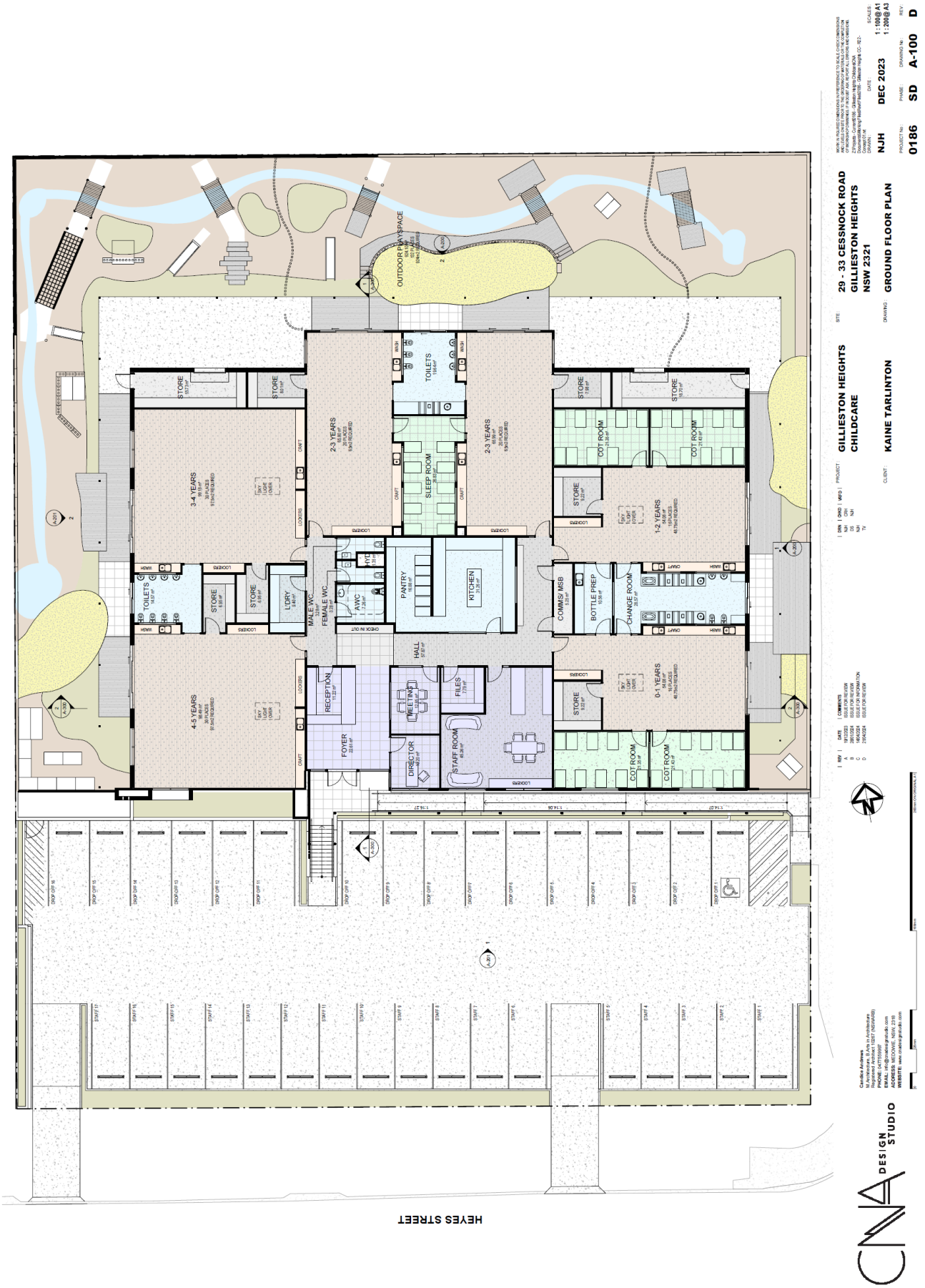
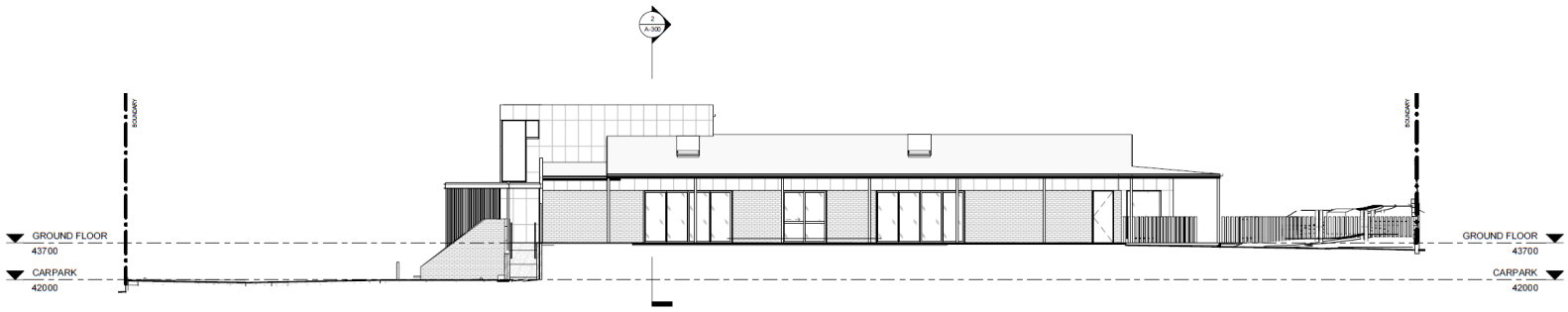

HEYES STREET
OUTDOOR PLAYSPACE
2-3 YEARS
3-4 YEARS
4-5 YEARS
SLEEP ROOM
KITCHEN
PANTRY
RECEPTION
FOYER
DIRECTOR
STAFF ROOM
COT ROOM
1-2 YEARS
0-1 YEARS
CHANGE ROOM
BOTTLE PREP
COMMS/ MSB
MALE WC
FEMALE WC
AWC
HALL
FILES
LAUNDRY
TOILETS
STORE
GILLIESTON HEIGHTS CHILDCARE
29 - 33 CESSNOCK ROAD GILLIESTON HEIGHTS NSW 2321
GROUND FLOOR PLAN
KAINE TARLINTON
NJH
DEC 2023
0186
SD
A-100
D
1:100@A1
1:200@A3
DESIGN STUDIO



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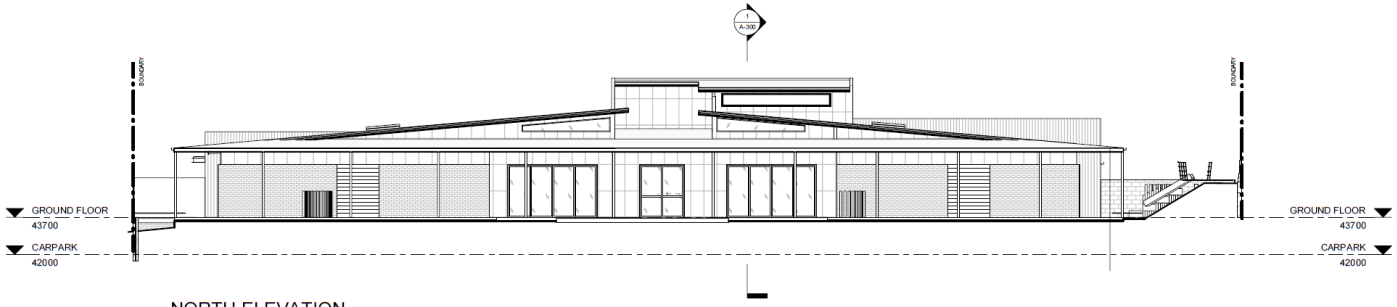

2 NORTH ELEVATION
1 : 100

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REV	DATE	COMMENTS
A	28/01/2024	ISSUE FOR REVIEW
B	21/04/2024	ISSUE FOR REVIEW

DRN	CHKD	VAR'D
DS	NJH	
TV		

PROJECT: **GILLIESTON HEIGHTS CHILDCARE**

SITE: **29 - 33 CESSNOCK ROAD GILLIESTON HEIGHTS NSW 2321**

CLIENT: **KAINE TARLINTON**

DRAWING: **ELEVATIONS - SHEET 1**

WORK IN FIGURED DIMENSIONS IN PREFERENCE TO SCALE. CHECK DIMENSIONS AND LEVELS ON SITE PRIOR TO THE ORDERING OF MATERIALS OR THE COMPLETION OF WORKSHOP DRAWINGS. IF IN DOUBT ASK. REPORT ALL ERRORS AND OMISSIONS.
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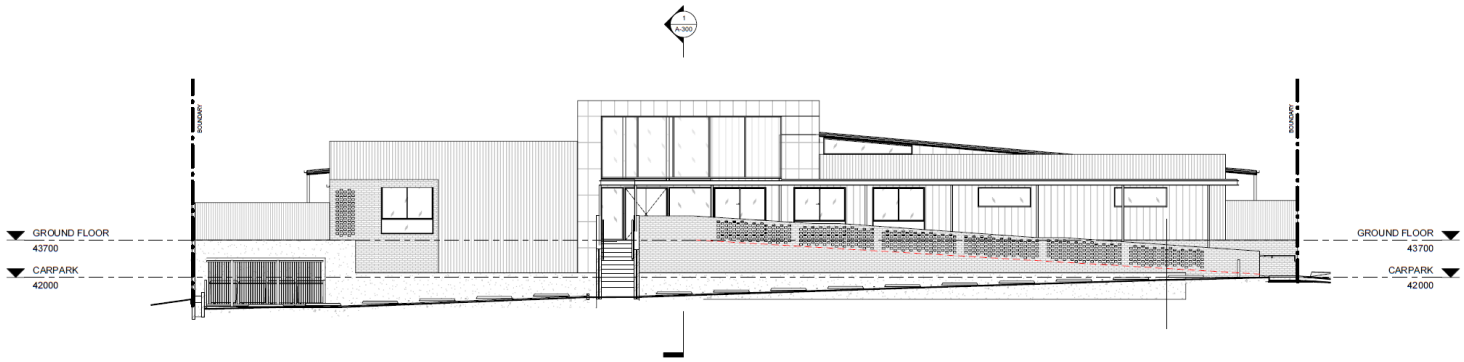
DRAWN: DS
DATE: JAN 2024
SCALES: 1 : 100@ A1, 1 : 200@ A3

PROJECT No: 0186
PHASE: SD
DRAWING No: A-200
REV: B



1 SOUTH ELEVATION
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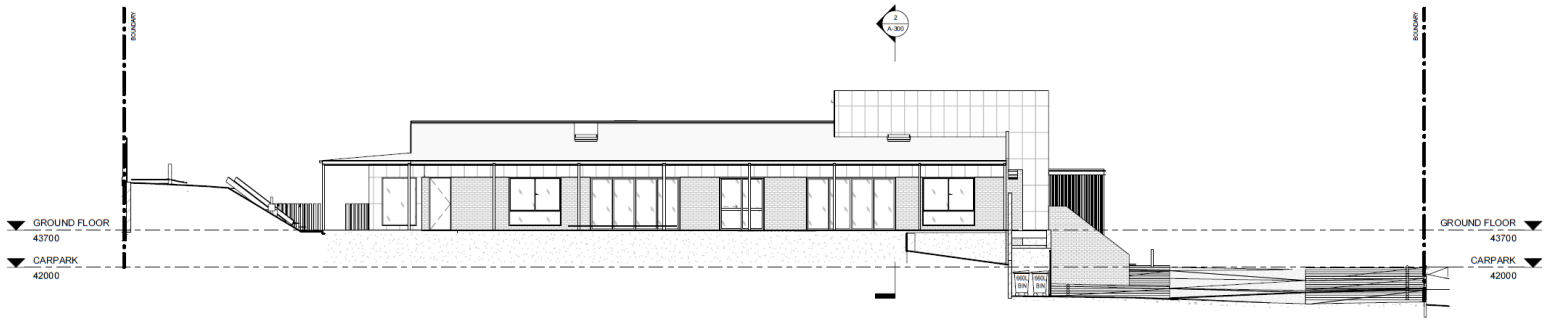

2 WEST ELEVATION
1 : 100

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REV	DATE	COMMENTS
A	28/01/2024	ISSUE FOR REVIEW
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DRN	CHKD	VRFD
DS	NJH	
TV		

PROJECT : **GILLIESTON HEIGHTS CHILDCARE**

SITE : **29 - 33 CESSNOCK ROAD GILLIESTON HEIGHTS NSW 2321**

CLIENT : **KAINE TARLINTON**

DRAWING : **ELEVATIONS - SHEET 2**

WORK IN FIGURED DIMENSIONS IN PREFERENCE TO SCALE. CHECK DIMENSIONS AND LEVELS ON SITE PRIOR TO THE ORDERING OF MATERIALS OR THE COMPLETION OF WORKSHOP DRAWINGS. IF IN DOUBT ASK. REPORT ALL ERRORS AND OMISSIONS.

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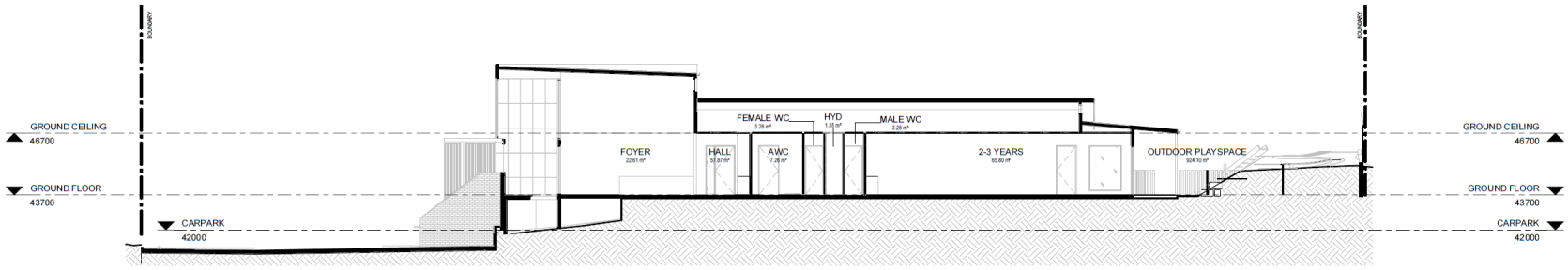
DRAWN :	DATE :	SCALES :
DS	JAN 2024	1 : 100 @ A1 1 : 200 @ A3

PROJECT No :	PHASE :	DRAWING No :	REV :
0186	SD	A-201	B



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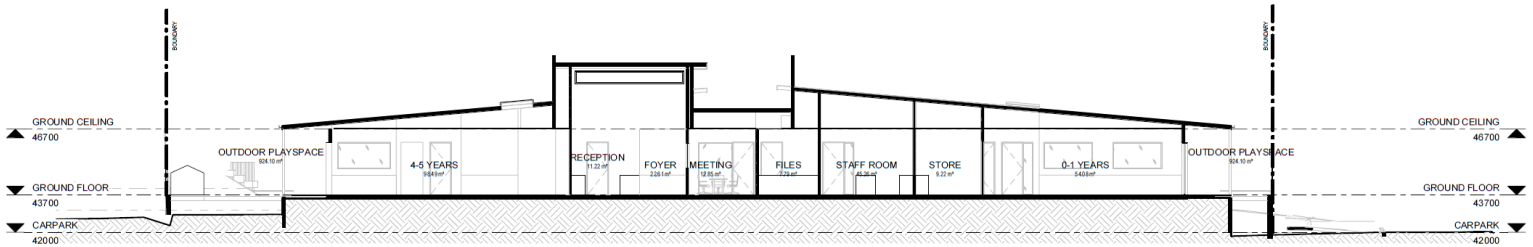

2 SECTION 02
1 : 100

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REV	DATE	COMMENTS
A	28/01/2024	ISSUE FOR REVIEW
B	21/04/2024	ISSUE FOR REVIEW

DRN	CHKD	MSFD
DS	NJH	
TV		

PROJECT : **GILLIESTON HEIGHTS CHILDCARE**

CLIENT : **KAINE TARLINTON**

SITE : **29 - 33 CESSNOCK ROAD GILLIESTON HEIGHTS NSW 2321**

DRAWING : **SECTIONS - SHEET 1**

WORK IN FIGURED DIMENSIONS IN PREFERENCE TO SCALE. CHECK DIMENSIONS AND LEVELS ON SITE PRIOR TO THE ORDERING OF MATERIALS OR THE COMPLETION OF WORKSHOP DRAWINGS. IF IN DOUBT ASK. REPORT ALL ERRORS AND OMISSIONS.

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DRAWN : **DS**

DATE : **JAN 2024**

SCALES : **1 : 100@ A1** **1 : 200@ A3**

PROJECT No : **0186**

PHASE : **SD**

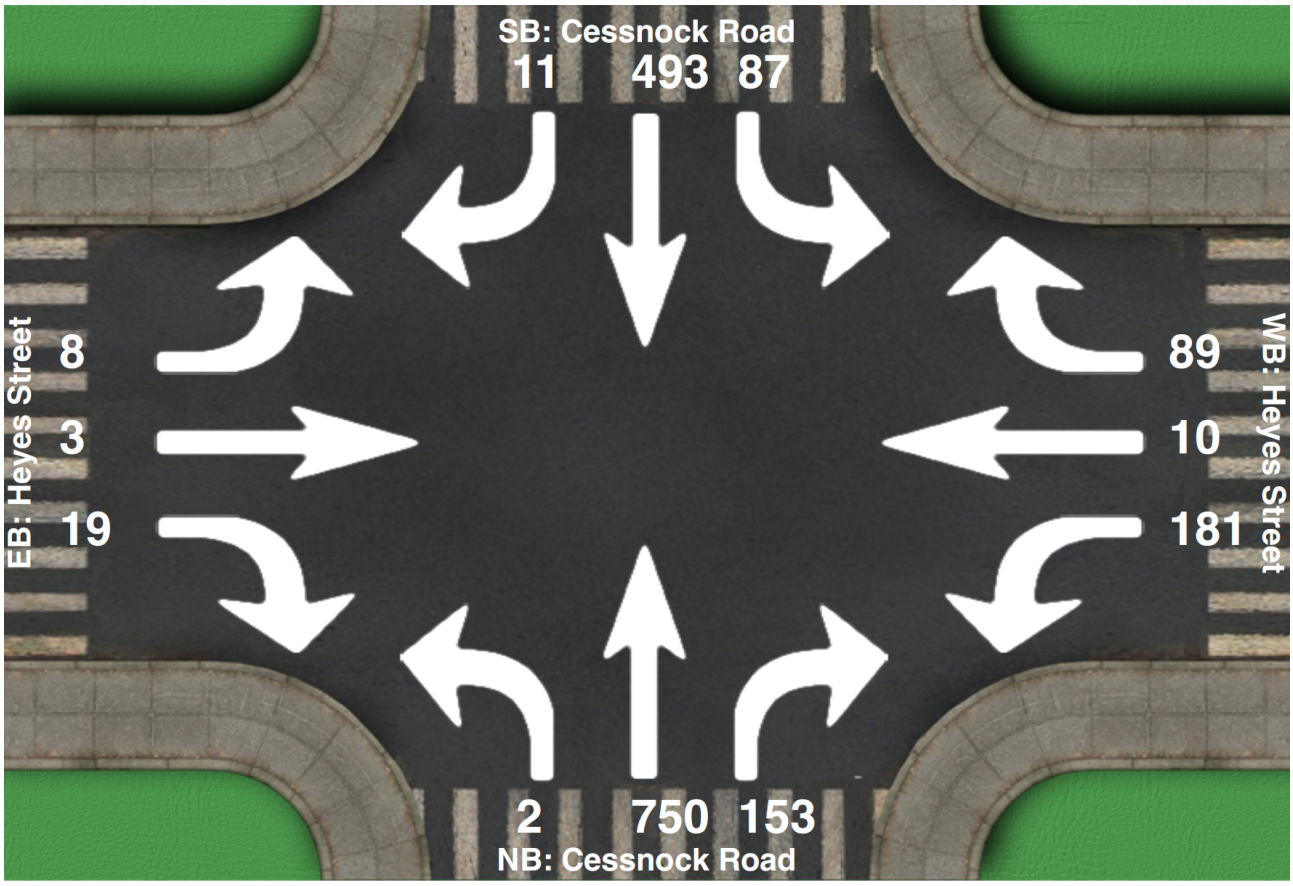
DRAWING No : **A-300**

REV : **B**

APPENDIX 2
TRAFFIC COUNT DATA

Intersection Peak Hour

Location: Cessnock Road at Heyes Street, Gillieston Heights
GPS Coordinates: Lat=-32.764485, Lon=151.527068
Date: 2024-05-29
Day of week: Wednesday
Weather:
Analyst: Jeff



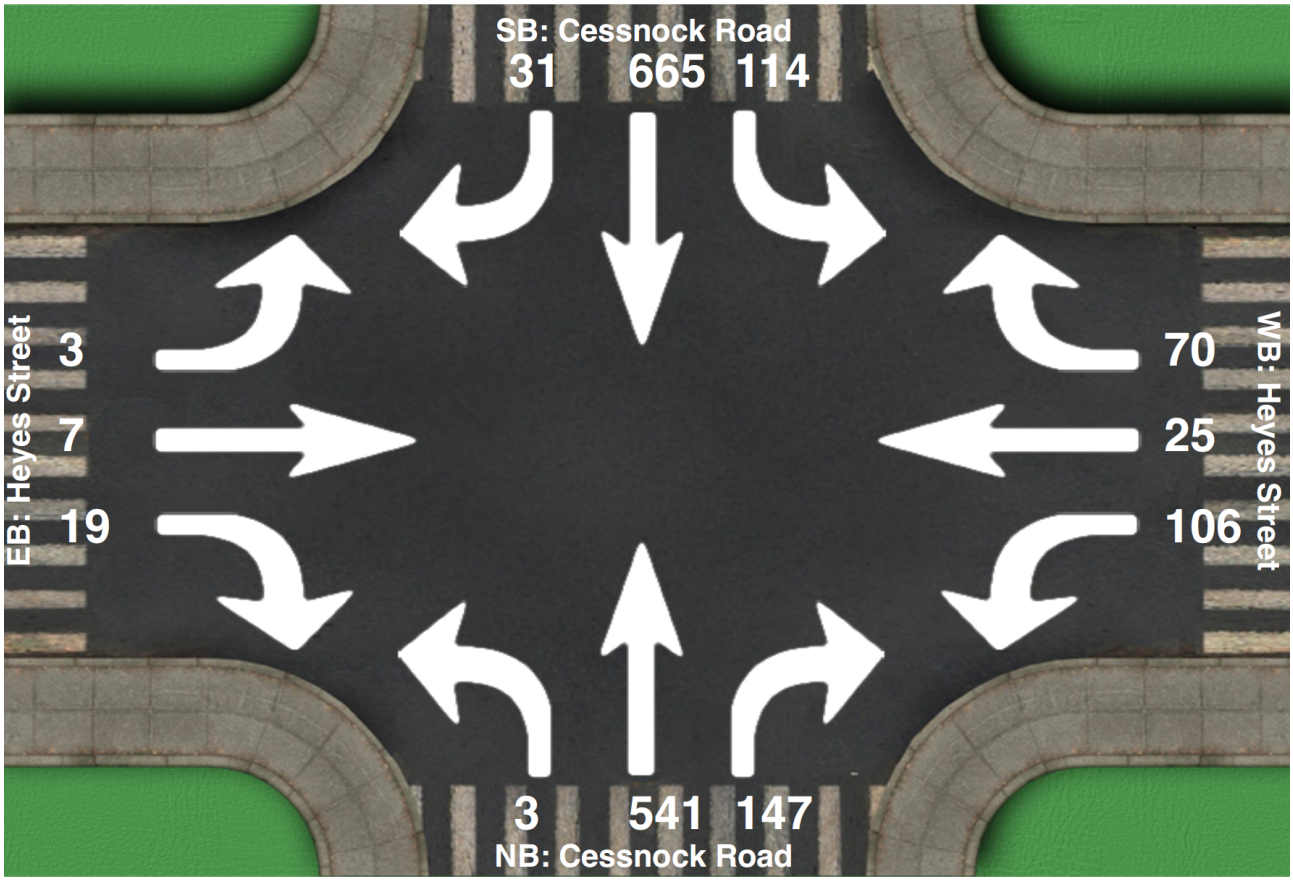
Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	87	493	11	181	10	89	2	750	153	8	3	19	1806
Factor	0.70	0.85	0.55	0.89	0.83	0.93	0.50	0.92	0.83	0.40	0.38	0.68	0.94
Approach Factor	0.92			0.96			0.90			0.75			

Intersection Peak Hour

Location: Cessnock Road at Heyes Street, Gillieston Heights
GPS Coordinates: Lat=-32.764424, Lon=151.527079
Date: 2024-05-28
Day of week: Tuesday
Weather:
Analyst: Jeff



Intersection Peak Hour

15:00 - 16:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	114	665	31	106	25	70	3	541	147	3	7	19	1731
Factor	0.89	0.93	0.86	0.83	0.78	0.80	0.38	0.93	0.78	0.38	0.58	0.79	0.94
Approach Factor	0.93			0.87			0.94			0.81			

APPENDIX 3
SIDRA MOVEMENT SUMMARY TABLES

MOVEMENT SUMMARY

Site: 101 [2024AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cessnock Road / Redwood Drive / Heyes Street signals
Gillieston Heights
May 2024 counts
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road															
1	L2	All MCs	2	2.0	2	2.0	0.364	18.0	LOS B	5.8	43.8	0.71	0.61	0.71	48.0
2	T1	All MCs	789	10.0	789	10.0	*0.634	14.5	LOS B	11.7	89.1	0.79	0.69	0.79	48.9
3	R2	All MCs	161	2.0	161	2.0	*0.350	13.7	LOS A	2.1	14.8	0.75	0.75	0.75	47.4
Approach			953	8.6	953	8.6	0.634	14.4	LOS A	11.7	89.1	0.79	0.70	0.79	48.6
East: Redwood Drive															
4	L2	All MCs	191	2.0	191	2.0	0.657	34.2	LOS C	6.0	42.5	0.99	0.85	1.07	37.9
5	T1	All MCs	11	2.0	11	2.0	*0.657	27.4	LOS B	6.0	42.5	0.99	0.85	1.07	39.1
6	R2	All MCs	94	2.0	94	2.0	0.332	30.7	LOS C	2.6	18.2	0.92	0.76	0.92	38.9
Approach			295	2.0	295	2.0	0.657	32.8	LOS C	6.0	42.5	0.97	0.82	1.03	38.3
North: Cessnock Road															
7	L2	All MCs	92	2.0	92	2.0	0.240	17.3	LOS B	3.6	26.3	0.67	0.65	0.67	46.8
8	T1	All MCs	519	10.0	519	10.0	0.529	13.5	LOS A	9.2	69.9	0.76	0.67	0.76	48.9
9	R2	All MCs	12	2.0	12	2.0	0.029	13.3	LOS A	0.1	0.9	0.69	0.65	0.69	47.6
Approach			622	8.7	622	8.7	0.529	14.1	LOS A	9.2	69.9	0.75	0.67	0.75	48.5
West: Heyes Street															
10	L2	All MCs	8	2.0	8	2.0	0.037	30.8	LOS C	0.3	2.1	0.86	0.65	0.86	40.2
11	T1	All MCs	3	2.0	3	2.0	0.037	23.2	LOS B	0.3	2.1	0.86	0.65	0.86	41.5
12	R2	All MCs	20	2.0	20	2.0	0.136	36.2	LOS C	0.6	4.2	0.97	0.69	0.97	36.7
Approach			32	2.0	32	2.0	0.136	33.4	LOS C	0.6	4.2	0.93	0.67	0.93	38.1
All Vehicles			1901	7.5	1901	7.5	0.657	17.5	LOS B	11.7	89.1	0.80	0.71	0.81	46.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Cessnock Road												

MOVEMENT SUMMARY

Site: 101 [2024PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cessnock Road / Redwood Drive / Heyes Street signals
Gillieston Heights
May 2024 counts
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road															
1	L2	All MCs	3	2.0	3	2.0	0.216	15.0	LOS B	3.8	28.8	0.56	0.48	0.56	49.9
2	T1	All MCs	569	10.0	569	10.0	0.376	10.5	LOS A	7.3	55.7	0.61	0.52	0.61	51.4
3	R2	All MCs	155	2.0	155	2.0	*0.381	13.8	LOS A	2.0	14.5	0.72	0.75	0.72	47.3
Approach			727	8.3	727	8.3	0.381	11.2	LOS A	7.3	55.7	0.63	0.57	0.63	50.5
East: Redwood Drive															
4	L2	All MCs	112	2.0	112	2.0	0.580	40.3	LOS C	4.7	33.7	0.99	0.80	1.02	36.2
5	T1	All MCs	26	2.0	26	2.0	*0.580	33.0	LOS C	4.7	33.7	0.99	0.80	1.02	37.2
6	R2	All MCs	74	2.0	74	2.0	0.332	37.3	LOS C	2.4	17.3	0.95	0.76	0.95	36.4
Approach			212	2.0	212	2.0	0.580	38.3	LOS C	4.7	33.7	0.97	0.79	0.99	36.3
North: Cessnock Road															
7	L2	All MCs	120	2.0	120	2.0	0.264	15.3	LOS B	4.8	35.3	0.58	0.61	0.58	48.0
8	T1	All MCs	700	10.0	700	10.0	*0.583	12.0	LOS A	13.2	100.3	0.70	0.64	0.70	50.0
9	R2	All MCs	33	2.0	33	2.0	0.061	10.9	LOS A	0.4	2.6	0.53	0.66	0.53	49.2
Approach			853	8.6	853	8.6	0.583	12.4	LOS A	13.2	100.3	0.68	0.64	0.68	49.7
West: Heyes Street															
10	L2	All MCs	3	2.0	3	2.0	0.043	36.4	LOS C	0.3	2.3	0.90	0.63	0.90	38.5
11	T1	All MCs	7	2.0	7	2.0	0.043	29.6	LOS C	0.3	2.3	0.90	0.63	0.90	39.7
12	R2	All MCs	20	2.0	20	2.0	0.153	41.0	LOS C	0.7	4.9	0.97	0.69	0.97	35.1
Approach			31	2.0	31	2.0	0.153	37.8	LOS C	0.7	4.9	0.95	0.67	0.95	36.4
All Vehicles			1822	7.6	1822	7.6	0.583	15.4	LOS B	13.2	100.3	0.70	0.63	0.70	47.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Cessnock Road												

MOVEMENT SUMMARY

Site: 101 [2024AM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cessnock Road / Redwood Drive / Heyes Street signals
Gillieston Heights
May 2024 counts
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 50 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road															
1	L2	All MCs	16	2.0	16	2.0	0.416	18.9	LOS B	5.2	39.3	0.80	0.68	0.80	47.2
2	T1	All MCs	737	10.0	737	10.0	*0.725	16.3	LOS B	11.1	84.3	0.88	0.79	0.94	47.6
3	R2	All MCs	161	2.0	161	2.0	*0.340	13.4	LOS A	1.9	13.4	0.80	0.76	0.80	47.6
Approach			914	8.5	914	8.5	0.725	15.9	LOS B	11.1	84.3	0.86	0.79	0.91	47.6
East: Redwood Drive															
4	L2	All MCs	191	2.0	191	2.0	0.732	31.5	LOS C	5.7	40.4	1.00	0.90	1.21	39.1
5	T1	All MCs	25	2.0	25	2.0	*0.732	24.9	LOS B	5.7	40.4	1.00	0.90	1.21	40.3
6	R2	All MCs	94	2.0	94	2.0	0.353	27.2	LOS B	2.2	15.6	0.93	0.76	0.93	40.4
Approach			309	2.0	309	2.0	0.732	29.6	LOS C	5.7	40.4	0.98	0.86	1.13	39.6
North: Cessnock Road															
7	L2	All MCs	92	2.0	92	2.0	0.263	18.1	LOS B	3.1	22.5	0.75	0.69	0.75	46.1
8	T1	All MCs	463	10.0	463	10.0	0.579	14.2	LOS A	7.8	59.2	0.84	0.73	0.84	48.4
9	R2	All MCs	25	2.0	25	2.0	0.060	13.7	LOS A	0.3	1.9	0.78	0.68	0.78	47.4
Approach			580	8.4	580	8.4	0.579	14.8	LOS B	7.8	59.2	0.82	0.72	0.82	48.0
West: Heyes Street															
10	L2	All MCs	22	2.0	22	2.0	0.134	27.8	LOS B	0.9	6.3	0.89	0.69	0.89	42.0
11	T1	All MCs	18	2.0	18	2.0	0.134	20.4	LOS B	0.9	6.3	0.89	0.69	0.89	43.3
12	R2	All MCs	34	2.0	34	2.0	0.233	32.1	LOS C	0.9	6.1	0.98	0.70	0.98	38.3
Approach			74	2.0	74	2.0	0.233	28.0	LOS B	0.9	6.3	0.93	0.70	0.93	40.5
All Vehicles			1877	7.1	1877	7.1	0.732	18.3	LOS B	11.1	84.3	0.87	0.77	0.92	45.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Cessnock Road												

MOVEMENT SUMMARY

Site: 101 [2024PM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cessnock Road / Redwood Drive / Heyes Street signals
Gillieston Heights
May 2024 counts
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road															
1	L2	All MCs	15	2.0	15	2.0	0.210	15.5	LOS B	3.7	27.7	0.58	0.50	0.58	49.3
2	T1	All MCs	526	10.0	526	10.0	0.365	11.0	LOS A	7.0	53.5	0.62	0.53	0.62	51.0
3	R2	All MCs	155	2.0	155	2.0	*0.373	13.7	LOS A	2.0	14.1	0.72	0.75	0.72	47.4
Approach			696	8.1	696	8.1	0.373	11.7	LOS A	7.0	53.5	0.64	0.58	0.64	50.1
East: Redwood Drive															
4	L2	All MCs	112	2.0	112	2.0	0.568	39.0	LOS C	5.1	36.1	0.98	0.80	0.99	36.7
5	T1	All MCs	39	2.0	39	2.0	*0.568	31.9	LOS C	5.1	36.1	0.98	0.80	0.99	37.7
6	R2	All MCs	74	2.0	74	2.0	0.332	37.3	LOS C	2.4	17.3	0.95	0.76	0.95	36.4
Approach			224	2.0	224	2.0	0.568	37.2	LOS C	5.1	36.1	0.97	0.78	0.98	36.8
North: Cessnock Road															
7	L2	All MCs	120	2.0	120	2.0	0.256	15.8	LOS B	4.6	33.9	0.59	0.62	0.59	47.6
8	T1	All MCs	653	10.0	653	10.0	*0.565	12.5	LOS A	12.5	95.0	0.71	0.65	0.71	49.7
9	R2	All MCs	45	2.0	45	2.0	0.084	11.1	LOS A	0.5	3.8	0.54	0.67	0.54	49.0
Approach			818	8.4	818	8.4	0.565	12.9	LOS A	12.5	95.0	0.68	0.64	0.68	49.3
West: Heyes Street															
10	L2	All MCs	16	2.0	16	2.0	0.137	35.9	LOS C	1.1	8.1	0.91	0.69	0.91	38.4
11	T1	All MCs	21	2.0	21	2.0	0.137	29.3	LOS C	1.1	8.1	0.91	0.69	0.91	39.5
12	R2	All MCs	32	2.0	32	2.0	0.224	41.2	LOS C	1.1	7.8	0.98	0.71	0.98	35.0
Approach			68	2.0	68	2.0	0.224	36.3	LOS C	1.1	8.1	0.94	0.70	0.94	37.1
All Vehicles			1806	7.2	1806	7.2	0.568	16.3	LOS B	12.5	95.0	0.71	0.64	0.71	47.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Cessnock Road												

MOVEMENT SUMMARY

Site: 101 [2034AM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cessnock Road / Redwood Drive / Heyes Street signals
Gillieston Heights
May 2024 counts
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 55 seconds (Site Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road															
1	L2	All MCs	18	2.0	18	2.0	0.478	20.5	LOS B	6.8	51.2	0.82	0.70	0.82	46.3
2	T1	All MCs	855	10.0	855	10.0	*0.833	21.3	LOS B	16.4	124.7	0.92	0.90	1.07	44.9
3	R2	All MCs	187	2.0	187	2.0	*0.420	15.0	LOS B	2.4	17.3	0.85	0.77	0.85	46.6
Approach			1060	8.5	1060	8.5	0.833	20.2	LOS B	16.4	124.7	0.91	0.87	1.03	45.2
East: Redwood Drive															
4	L2	All MCs	221	2.0	221	2.0	0.748	33.3	LOS C	7.2	51.0	1.00	0.92	1.20	38.5
5	T1	All MCs	29	2.0	29	2.0	*0.748	26.4	LOS B	7.2	51.0	1.00	0.92	1.20	39.6
6	R2	All MCs	109	2.0	109	2.0	0.384	29.1	LOS C	2.8	19.7	0.93	0.77	0.93	39.5
Approach			359	2.0	359	2.0	0.748	31.5	LOS C	7.2	51.0	0.98	0.87	1.12	38.9
North: Cessnock Road															
7	L2	All MCs	106	2.0	106	2.0	0.302	19.3	LOS B	3.9	28.9	0.76	0.70	0.76	45.4
8	T1	All MCs	538	10.0	538	10.0	0.665	16.4	LOS B	10.4	79.3	0.87	0.77	0.89	47.1
9	R2	All MCs	29	2.0	29	2.0	0.075	15.5	LOS B	0.3	2.4	0.82	0.69	0.82	46.3
Approach			673	8.4	673	8.4	0.665	16.8	LOS B	10.4	79.3	0.85	0.76	0.87	46.8
West: Heyes Street															
10	L2	All MCs	26	2.0	26	2.0	0.136	29.3	LOS C	1.1	7.8	0.87	0.69	0.87	41.6
11	T1	All MCs	21	2.0	21	2.0	0.136	21.2	LOS B	1.1	7.8	0.87	0.69	0.87	43.0
12	R2	All MCs	39	2.0	39	2.0	0.276	35.0	LOS C	1.1	7.9	0.99	0.71	0.99	37.2
Approach			86	2.0	86	2.0	0.276	29.9	LOS C	1.1	7.9	0.93	0.70	0.93	39.7
All Vehicles			2178	7.1	2178	7.1	0.833	21.4	LOS B	16.4	124.7	0.90	0.83	0.99	44.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Cessnock Road												

MOVEMENT SUMMARY

Site: 101 [2034PM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cessnock Road / Redwood Drive / Heyes Street signals
Gillieston Heights
May 2024 counts
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road															
1	L2	All MCs	17	2.0	17	2.0	0.278	16.8	LOS B	4.3	32.2	0.67	0.57	0.67	48.5
2	T1	All MCs	611	10.0	611	10.0	0.484	12.7	LOS A	8.3	63.4	0.72	0.62	0.72	49.9
3	R2	All MCs	180	2.0	180	2.0	*0.490	16.3	LOS B	2.6	18.5	0.88	0.79	0.88	45.9
Approach			807	8.1	807	8.1	0.490	13.5	LOS A	8.3	63.4	0.76	0.66	0.76	48.9
East: Redwood Drive															
4	L2	All MCs	129	2.0	129	2.0	0.628	35.6	LOS C	5.2	36.9	0.99	0.83	1.06	38.2
5	T1	All MCs	45	2.0	45	2.0	*0.628	27.9	LOS B	5.2	36.9	0.99	0.83	1.06	39.4
6	R2	All MCs	86	2.0	86	2.0	0.361	32.8	LOS C	2.4	17.3	0.95	0.76	0.95	38.0
Approach			260	2.0	260	2.0	0.628	33.4	LOS C	5.2	36.9	0.97	0.81	1.02	38.4
North: Cessnock Road															
7	L2	All MCs	139	2.0	139	2.0	0.339	17.2	LOS B	5.4	39.6	0.69	0.68	0.69	46.7
8	T1	All MCs	757	10.0	757	10.0	*0.749	16.1	LOS B	16.2	122.8	0.85	0.81	0.90	47.4
9	R2	All MCs	53	2.0	53	2.0	0.110	12.2	LOS A	0.6	4.3	0.65	0.69	0.65	48.3
Approach			949	8.4	949	8.4	0.749	16.1	LOS B	16.2	122.8	0.82	0.78	0.86	47.3
West: Heyes Street															
10	L2	All MCs	18	2.0	18	2.0	0.151	31.9	LOS C	1.1	8.1	0.90	0.69	0.90	40.2
11	T1	All MCs	24	2.0	24	2.0	0.151	25.0	LOS B	1.1	8.1	0.90	0.69	0.90	41.5
12	R2	All MCs	37	2.0	37	2.0	0.254	36.7	LOS C	1.1	7.9	0.98	0.71	0.98	36.5
Approach			79	2.0	79	2.0	0.254	32.0	LOS C	1.1	8.1	0.94	0.70	0.94	38.8
All Vehicles			2096	7.2	2096	7.2	0.749	17.8	LOS B	16.2	122.8	0.82	0.73	0.84	46.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Cessnock Road												