Hemanote Consultants

32 BAGDAD STREET, REGENTS PARK

PROPOSED CHILDCARE CENTRE

TRAFFIC & PARKING
IMPACT ASSESSMENT

SEPTEMBER 2023

HEMANOTE CONSULTANTS PTY LTD

TRAFFIC ENGINEERING & DESIGN CONSULTANTS

PO BOX 743, MOOREBANK NSW 1875

CONTACT: 0414 251 845

EMAIL: projects@hemanote.com.au

TRAFFIC & PARKING IMPACT ASSESSMENT

32 BAGDAD STREET, REGENT PARK

PROPOSED CHILDCARE CENTRE

DATE: 22 SEPTEMBER 2023

DISCLAIMER

Doc. Revision	Prepared by	Reviewed by	Issued by	Issued date
Draft 1 (internally)	J. Mikhail	R. Selim	J. Mikhail	31 Mar 2023
Draft 2 (internally)	S. Payet	R. Selim	S. Payet	22 Sept 2023
Draft 3 (internally)	S. Payet	R. Selim	S. Payet	22 Sept 2023
Final report (to client)	S. Payet	R. Selim	R. Selim	26 Sept 2023

Table of Contents

1 INTRODUCTION

This report has been prepared by Hemanote Consultants to assess the traffic and parking implications of the proposed childcare centre to be located at **32 Bagdad Street, Regents Park**, accommodating up to 48 children places between the ages of 0 to 6 years old.

This report is to be read in conjunction with the architectural plans prepared by Boris Grgurevic and Associates (reduced copy of the plans is attached in Appendix 'A' of this report) and submitted to Canterbury-Bankstown Council as part of a Development Application.

This report is set as follows:

- *Section 2:* Description of the existing site location and its use;
- *Section 3:* Description of existing traffic conditions near the subject site;
- *Section 4:* Description of the proposal, vehicular access, on-site parking provision, layout and circulation;
- *Section 5:* Assessment of impacts on parking;
- *Section 6:* Assessment of impacts on traffic in the vicinity of the subject site; and
- *Section 7:* Outlines conclusions.

2 EXISTING SITE DESCRIPTION

➢ ***Site Location***

The subject site is located on the northern side of Bagdad Street at property No. 32 (legally known as Lot B of DP361957), within the suburb of Regents Park. The site has a frontage of approximately 18 metres to Bagdad Street from the south. Refer to Figure 1 for a site locality map.

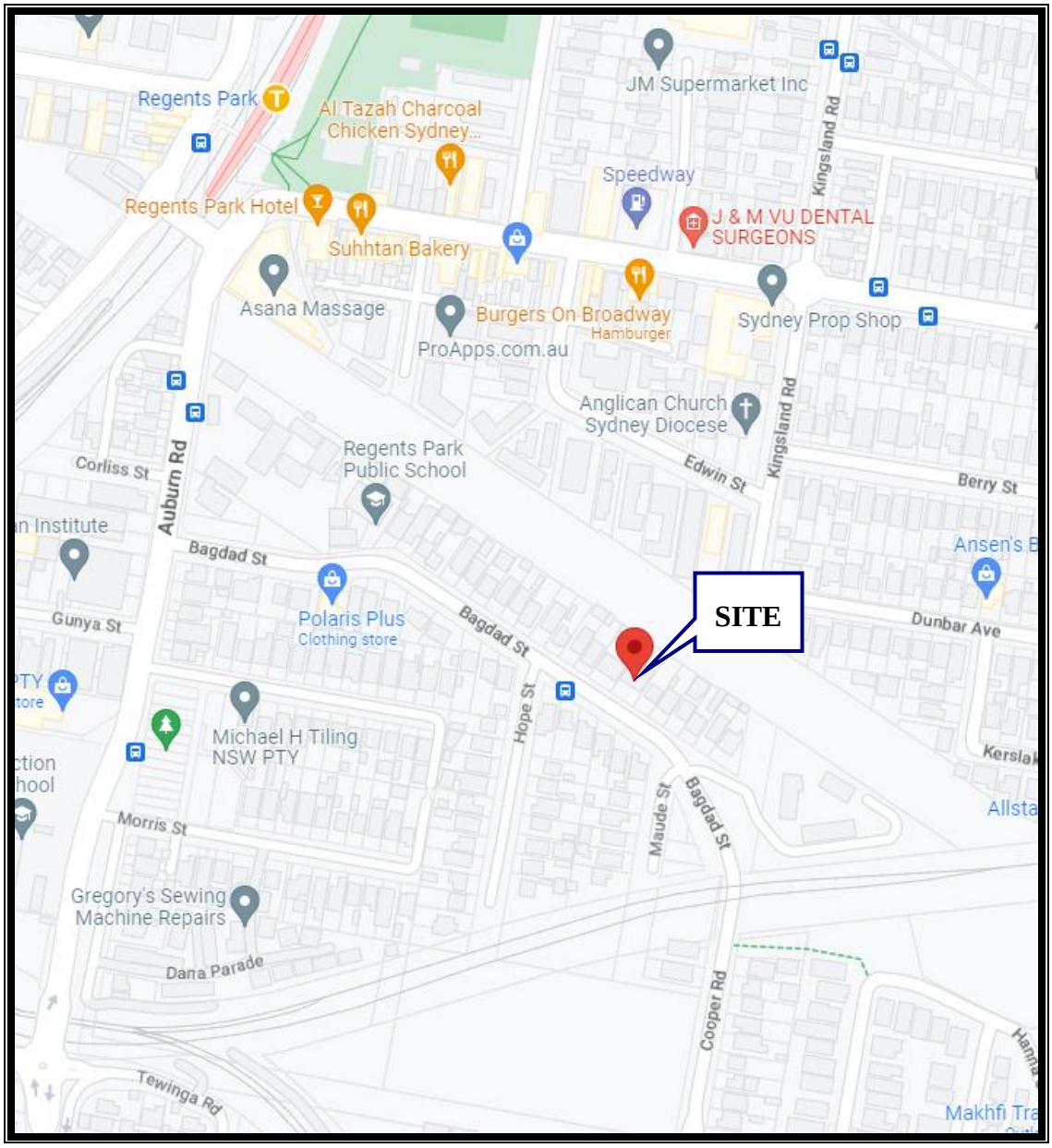


Figure 1: Site Locality Map

➢ ***Existing Site & Surrounding Land Use***

The subject site has an area of 780.4m^2 and is currently occupied by a single residential dwelling. It is located in a mainly residential area, characterised by single dwellings, and is in close proximity to some commercial sites. The site is also located approximately 650 metres from Regents Park Railway Station, 1.9 km from Sefton Railway Station and 2 km from Berala Railway Station.

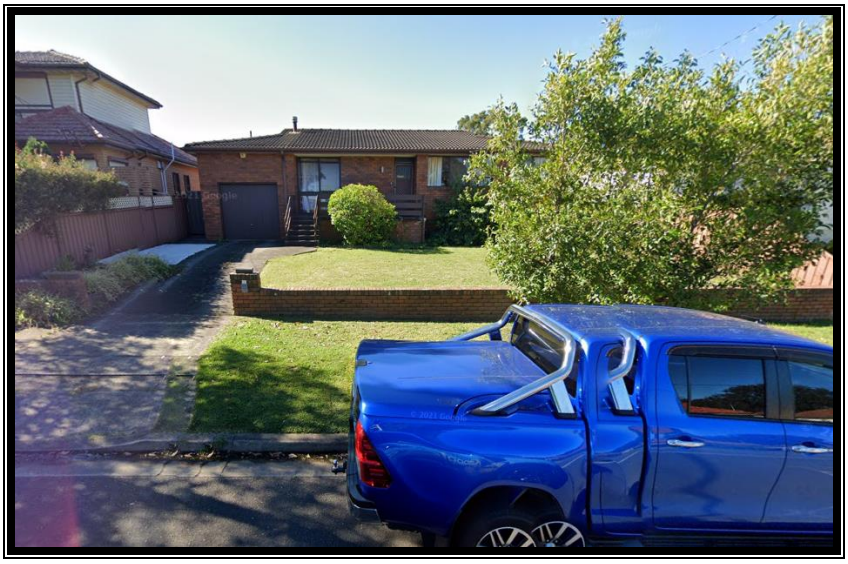


Photo 1: Site frontage to Bagdad Street

3 EXISTING TRAFFIC CONDITIONS

3.1 Road Network and Classification

Bagdad Street is a local road that runs in an east to west direction between its extension with Cooper Road (local road) to the east and Auburn Road (regional road) to the west. It intersects with Hope Street (local road) and Maude Street (local road) near the subject site.

3.2 Road Description and Traffic Control

Bagdad Street has a two-way undivided carriageway with a width between kerbs of approximately 10 metres. This carriageway generally provides one travel lane per direction, plus a kerbside parking lane on both sides of the road. At present, unrestricted parking is permitted on both sides of Bagdad Street, with the exception of the signposted 'No Parking 8.00am to 9.00am and 2.30pm to 3.30pm on School Days' along the frontage of the existing school to the west, and the signposted "No Stopping" towards its intersection with Auburn Road. The legal speed limit on Bagdad Street is signposted at 50km/h, with the exception of the signposted "School Zone" of 40km/h on school days. Bagdad Street intersects with Hope Street and Maude Street, which are both controlled by "T-priority", given to traffic travelling along Bagdad Street.

Figure 2: Aerial photograph of the subject site and surrounding road network

Photo 4: Bagdad Street at the subject site – facing east

Photo 5: Bagdad Street at the subject site – facing west

3.3 Current Traffic Flows

A traffic volume count was undertaken by Hemanote Consultants at the intersections of Bagdad Street / Auburn Road and Cooper Road / Moriarty Way in the vicinity of the subject site on Tuesday 02 May 2023, during morning period (7.00am to 10.00am) and afternoon period (3.00pm to 6.00pm), considering the childcare centre proposed hours of operation and traffic peak periods.

The traffic flows in the morning & afternoon peak hours are shown in Tables 1 and 2 below.

Traffic movement	Morning Peak Hour (Vehicles Per Hour)	Evening Peak Hour (Vehicles Per Hour)
	7.30am – 8.30am	2.45pm – 3.45pm
Moriarty Way		
Westbound	83	25
Eastbound	67	70
Cooper Road (North of Moriarty Way)		
Northbound	158	85
Southbound	147	143
Cooper Road (South of Moriarty Way)		
Northbound	153	101
Southbound	142	114

Table 1: Current traffic flows in the vicinity of the subject site (on a typical weekday)

Traffic movement	Morning Peak Hour (Vehicles Per Hour)	Evening Peak Hour (Vehicles Per Hour)
	7.30am – 8.30am	2.45pm – 3.45pm
Bagdad Street		
Westbound	299	194
Eastbound	137	226
Auburn Road (North of Bagdad Street) – 2 lanes		
Northbound	689	483
Southbound	396	556
Auburn Road (South of Bagdad Street)		
Northbound	535	336
Southbound	297	377

Table 2: Current traffic flows in the vicinity of the subject site (on a typical weekday)

The results of the traffic volume counts undertaken determined that the traffic morning peak period on Bagdad Street / Auburn Road and Cooper Road / Moriarty Way were between 7.30am to 8.30am and the afternoon peak period was between 2.45 pm to 3.45pm on a typical weekday.

The existing traffic flows on Bagdad Street, Cooper Road, Moriarty Way and Auburn Road are appropriate for local roads and a regional road in a mainly residential area, where traffic is free flowing without major queuing or delays near the subject site in peak hours, with spare capacity.

It is determined that the existing mid-block level of service on both Moriarty Way and Cooper Street are at level 'A' in accordance with Table 4.4 of the Roads & Maritime Services' *"Guide to Traffic Generating Developments - 2002"* (shown on the following page). It is also determined that the existing mid-block level of service on Bagdad Street ranges between levels 'A' and 'B'.

The existing mid-block level of service on Auburn Road ranges between levels 'A' and 'C' to the south of Bagdad Street (1 lane in each direction) and to the north of Bagdad Street heading southbound (1 lane). The existing mid-block service on Auburn Road is at level 'A' to the north of Bagdad Street, heading northbound (2 lanes).

Level of Service	One Lane (veh/hr)	Two Lanes (veh/hr)
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

Table 4.4: Urban road peak hour flows per direction RMS Guide)

- ***Current Intersection Performance***

Average Vehicle Delay (AVD) and Level of Service (LOS) – The AVD and LOS provide a measure of the operational performance of an intersection, as indicated in Table 4.2 of the Roads & Maritime Services "*Guide to Traffic Generating Developments - 2002*" (shown below).

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

Table 4.2: Level of Service Criteria for intersections (RMS Guide)

A SIDRA intersection performance analysis was undertaken for the existing intersections of Bagdad Street / Auburn Road and Cooper Road / Moriarty Way, in the vicinity of the subject site (Pre-development).

Refer to Figure 3 on the following page, showing the T-intersections layout controlled by T-priority traffic measures with associated 'Stop' signage at Bagdad Street / Auburn Road, and a roundabout at Cooper Road / Moriarty Way.

Bagdad Street, Cooper Road and Moriarty Way have undivided carriageways, with one through traffic lane in each direction. Auburn Road has an undivided carriageway, generally with one through lane in each direction, except to the east of Bagdad Street heading eastbound, which has two lanes.

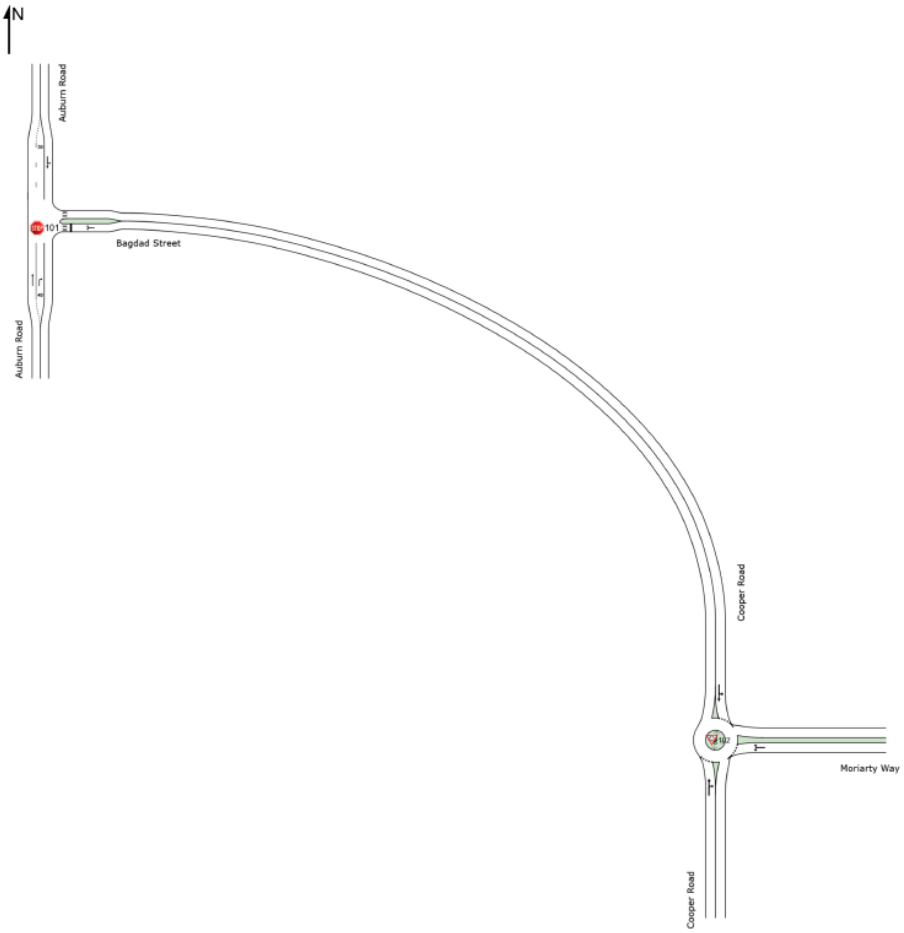


Figure 3: Existing Intersection Network Layout

The pre-development SIDRA performance analysis determined that the current operational performance of the existing T-intersection of Cooper Road / Moriarty Way is in good operation at a Level of Service (LOS) 'A'.

The existing T-intersection of Bagdad Street / Auburn Road during the AM & PM peak periods is at an overall Level of Service 'A', with the exception of the eastern approach on Bagdad Street, which is at an overall LOS 'B' during the AM and PM peak periods.

Refer to the summary of the results of the SIDRA intersection performance analysis attached in Appendix 'C' of this report.

3.4 Existing Transportation Services

The subject site has good access to public transport services in the form of trains and buses. The site is located approximately 650 metres from Regents Park Railway Station, 1.9 km from Sefton Railway Station and 2 km from Berala Railway Station.

Frequent bus services operate along Bagdad Street, Auburn Road, Cooper Road, Carlingford Street, Amy Street and Kingsland Road in close proximity to the subject site (i.e. bus routes N50, 908 and 909).

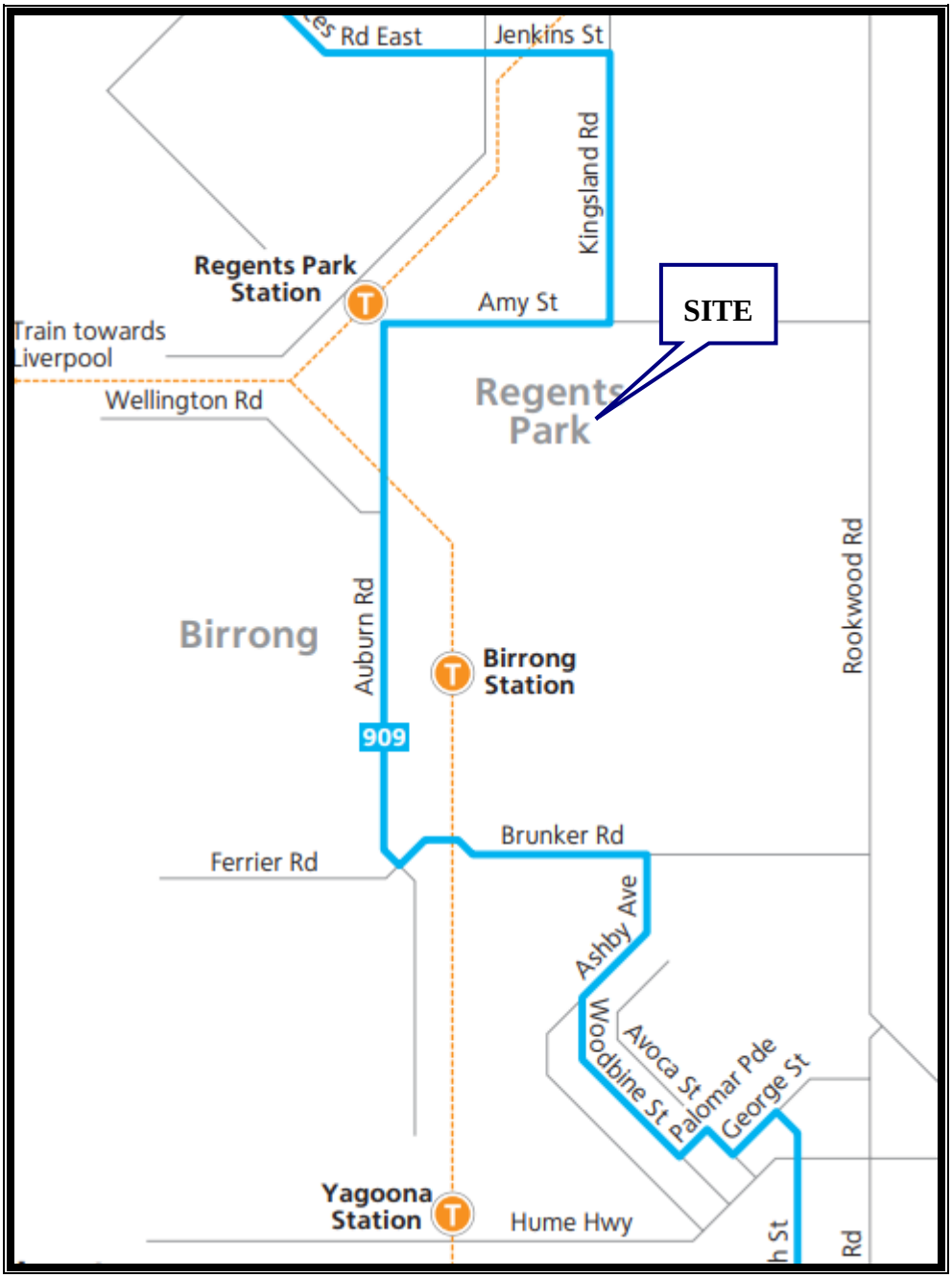


Figure 3: Bus services near the subject site (Bus no. 909)

4 PROPOSED DEVELOPMENT

4.1 Description of the proposal

The proposed development application seeks approval for the demolition of the existing residential dwelling located at **32 Bagdad Street, Regents Park**, and the construction of a childcare centre, accommodating up to 48 children places with basement parking.

The proposed development will include the following:

- Childcare centre accommodating up to forty-eight (48) children:
    - 12 children places between the ages of 0 to 2 years old (3 staff members);
    - 15 children places between the ages of 2 to 3 years old (3 staff members);
    - 21 children places between the ages of 3 to 6 years old (3 staff members).
- A total of thirteen (13) on-site car parking, with 7 car spaces allocated for staff parking and 6 visitor car parking spaces for the drop-off and pick-up of children (including 1 accessible parking space & an adjacent shared area), in addition to a turning area, in basement level. A minimum of three (3) bicycle storage spaces are to be provided on-site.
- There will be a maximum of nine (9) staff members on-site at any given time. The proposed hours of operation of the centre will be from 7.00am to 6.00pm on weekdays only.

Refer to ***Appendix 'A'*** for the proposed development plans.

4.2 Vehicular & Pedestrian Access

The vehicular access to and from the off-street parking facilities will be via a new access driveway crossing to be located in Bagdad Street. The access driveway is to have a width of 6.3 metres, which is adequate for a low volume (Category 1) access driveway in accordance with AS2890.1:2004 – Table 3.2.

The access driveway is to provide two-way vehicular movements, where two vehicles can pass each other at the same time without causing delays or congestion to traffic on the street. The proposed access driveway is located more than 6 metres from the tangent point of the adjacent kerbline, in accordance with Figure 3.1 of AS2890.1:2004.

Vehicular access is to be located and constructed in accordance with the requirements of AS2890.1:2004, where vehicles enter and exit the site in a forward direction at all times.

The existing vehicular crossing located in Bagdad Street is to be removed and replaced with new kerb, gutter and footpath, to be constructed to Council specifications, to restore on-street car parking spaces.

The clear sight line triangle (2.5m x 2m) between the driver's eye view and pedestrians is provided on the exit side of the driveway, as per Figure 3.3 of AS2890.1:2004. A separate pedestrian access gate is also provided at the front of the site to segregate pedestrians and vehicles and improve safety within the site.

4.3 On-site Parking Provision

Canterbury-Bankstown Development Control Plan 2023, Chapter 3.2, Section 2, requires on-site parking for childcare centres to be provided at a minimum rate of:

- 1 car space per 4 children.
- Bicycle – 1 space per 4 staff.

Refer to Table 3 below for the required and proposed car parking provision for the subject development site:

Age Group	**0-2 years**	**2-3 years**	**3-5 years**	**Total**
Number of children	12	15	21	48
Staff to Children Ratio	1 to 4	1 to 5	1 to 10	-
Number of Staff	3	3	3	9
On-site parking required (12 car spaces)				**12**
On-site parking proposed (7 spaces for staff & 6 spaces for parents/visitors)				**13**
Compliance with on-site car parking				**Yes**

Table 3: On-site parking requirement and provision

The proposed childcare centre for 48 children places would therefore require a minimum of 12 on-site car parking spaces and 3 bicycle storage spaces.

The proposed development provides a total of thirteen (13) on-site car parking, with 7 car spaces allocated for staff parking and 6 visitor car parking spaces for the drop-off and pick-up of children (including 1 accessible parking space & an adjacent shared area), in addition to a turning area, in basement level. A minimum of three (3) bicycle storage spaces are to be provided on-site.

Therefore, the proposed on-site parking provision is adequate for the proposed development and in compliance with Council's parking requirements.

4.4 On-site Parking Layout and Circulation

The layout of the on-site car parking area and manoeuvring arrangements has been designed to enhance vehicular and pedestrian access, where vehicles enter and exit the site in a forward direction, through the provision of adequate internal aisle width and turning space.

AS2890.1:2004 Parking facilities Part 1: Off-street car parking requires a minimum parking space width of 2.4 meters (for User Class 1A staff parking) and 2.6 metres (for User Class 3 short-term visitor parking) and a minimum length of 5.4 meters. The proposed off-street car spaces have a minimum width of 2.4 metres for staff and a width of 2.6 metres for visitors and a minimum length of 5.4 meters each, which is adequate.

The accessible car parking space has a width of 2.4 metres, in addition to an adjacent 2.4 metres wide shared area, which is adequate in accordance with AS2890.6:2022.

Car parking spaces adjacent to walls or obstructions have been made wider than the minimum width, to accommodate full door opening in accordance with Clause 2.4.2(d) of AS2890.1:2004.

Clause 2.4.2 of AS2890.1:2004 requires a minimum aisle width of 5.8 metres for two-way aisles, adjacent to 90^{o} angle parking. The proposed aisle has a minimum width of 6.6 metres, which is adequate for two-way traffic and manoeuvring into and out of parking spaces.

A **turning area** is provided towards the rear of the basement parking level, to allow vehicles to turn around and exit in a forward direction, if all other car parking spaces are occupied

The ramp to the basement level has a clear width of 5.5 metres, in addition to a 300mm kerb on either side and has a maximum grade of 1:20 (5%) for the first 6 metres within the site. It has a maximum grade of 1:4 (25%) with a change of grade of 1:8 (12.5%) over the 2 metres at either end of the ramp, which is adequate.

A minimum 2.2 metres headroom clearance is to be provided from the car park basement level to the underside of all services conduits and suspended stormwater pipelines, in accordance with Clause 5.3.1 of AS2890.1:2004. A “Maximum Headroom Clearance 2.2m” sign is to be erected at the entrance to the basement level and is to be clearly visible to all drivers. A minimum 2.5 meters headroom clearance is to be provided above the accessible parking space and its adjacent shared zone in accordance with Clause 2.4 of AS2890.6:2022.

A traffic convex mirror is to be installed at the bottom of the ramp (as shown on the basement plan), to provide drivers with further assistance with viewing oncoming traffic, as an additional safety and traffic management measure.

A dedicated pedestrian path has also been provided within the carpark, to provide a defined pedestrian path to the centre’s access point. It is recommended that the on-site parking area be signposted with a speed limit of 10 km/h, to reduce speed environment, raise awareness of the presence of pedestrians and children and increase safety for all users of the carpark.

All vehicular manoeuvring within the site has been designed and checked using the B99 and B85 standard design vehicle turning paths from AS2890.1:2004 and Austroads. Refer to the vehicle swept paths diagrams attached in Appendix ‘B’ of this report.

Therefore, the car parking layout and vehicular circulation are adequate in accordance with AS2890.1:2004 and AS2890.6:2022, where vehicles are to enter and exit the site in a forward direction at all times.

4.5 Waste Collection & Deliveries

All waste storage is to take place within the dedicated garbage storage area located at-grade level. Waste Bins will be transported to the street kerbside for collection on waste collection day.

5 ON-STREET PARKING PROVISION

5.1 Existing Parking Controls

The subject site is located in a mainly residential area, where unrestricted parking is permitted on both sides of Bagdad Street, with the exception of the signposted 'No Parking 8.00am to 9.00am and 2.30pm to 3.30pm on School Days' along the frontage of the existing school to the west, and the signposted "No Stopping" towards its intersection with Auburn Road.

5.2 Impacts of Proposed Development on Parking

The parking demand resulting from the proposed childcare centre development can be accommodated within the proposed adequate and compliant on-site car and bicycle parking spaces for staff and visitors. The subject site has good access to existing public transport in the form of train and bus services.

Therefore, the proposed development will not have adverse impacts on parking in the surrounding area.

6 EXTERNAL TRAFFIC IMPACT

6.1 Estimated Future Traffic Generation

An indication of the potential traffic generation of the proposed development is provided by the *RMS Guide to Traffic Generating Development - 2002*.

The Guide specifies the following traffic generation rates for long-day care centres:

- 0.8 peak period vehicle trips per child between 7.00am and 9.00am; and
- 0.7 peak period vehicle trips per child between 4.00pm and 6.00pm.

Therefore, the proposed development with a total of 48 children places has a total estimated traffic generation as follows:

- **39** morning peak period vehicle trips (**20 In and 19 Out trips**); and
- **34** afternoon peak period vehicle trips (**17 In and 17 Out trips**).

6.2 Projected Intersection Performance

Average Vehicle Delay (AVD) and Level of Service (LOS) – The AVD and LOS provides a measure of the operational performance of an intersection, as indicated in Table 4.2 of the Roads & Maritime Services "*Guide to Traffic Generating Developments - 2002*" (shown below).

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

Table 4.2: Level of Service Criteria for intersections (RMS Guide)

A post-development SIDRA intersection performance modelling analysis was undertaken for the T-intersections of Bagdad Street / Auburn Road and Cooper Road / Moriarty Way in the vicinity of the subject site, and it was modelled as the proposed network layout as shown in Figure 5 on the following page.

Refer to the summary of the results of the SIDRA intersection performance analysis (undertaken for pre & post development, including the 10-year future growth) attached in Appendix 'C' of this report.

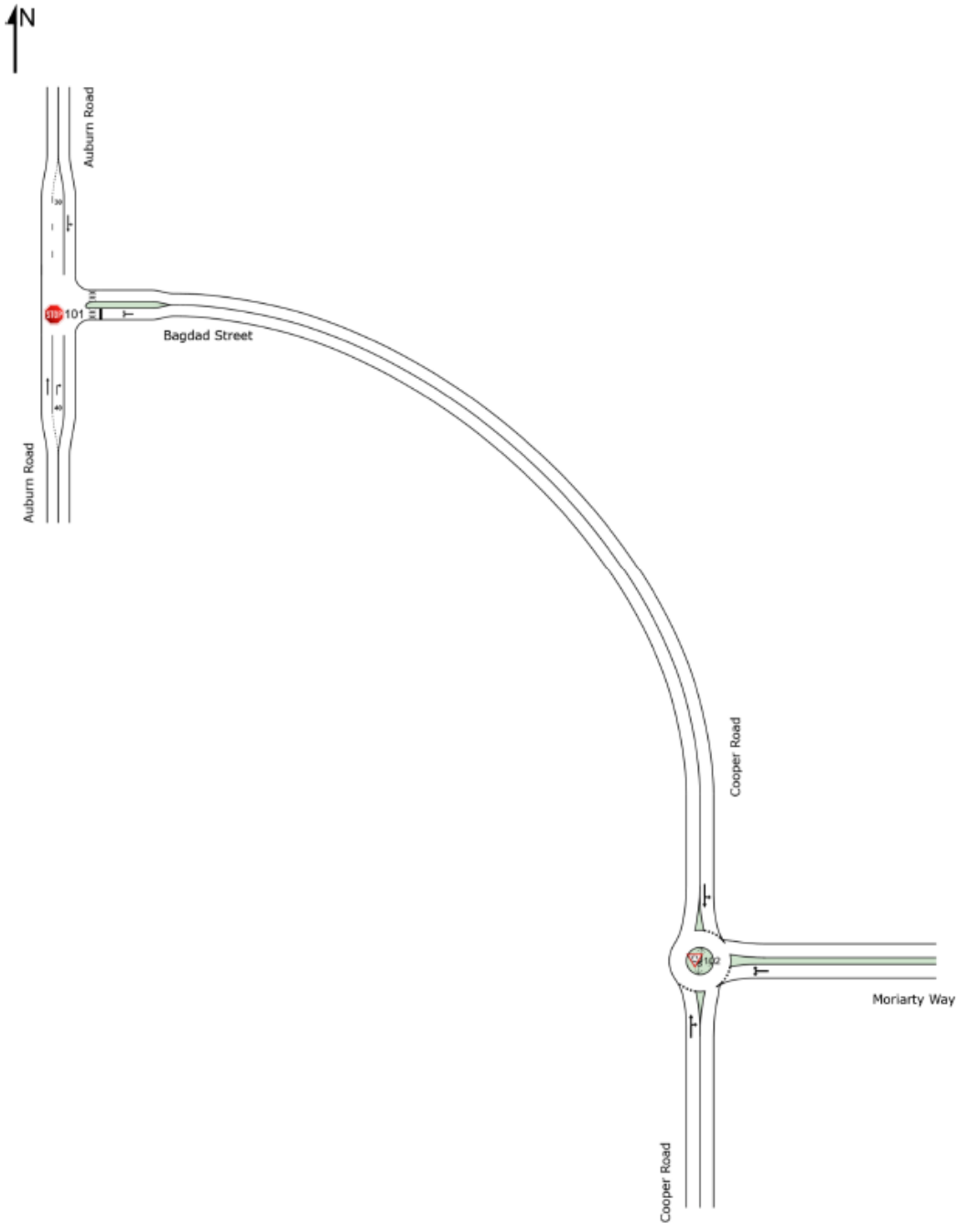


Figure 5: Intersection Network Layout

The following assumptions have been considered and adopted in the SIDRA Network Intersection modelling for the post-development conditions considering that the main access to and from the subject site is through Bagdad Street:

- Morning and afternoon peak traffic generation from *RMS Guide to Traffic Generating Developments* has been used, as outlined in Section 6.1 of this report.
- AM & PM Traffic generated by the development was equally adopted for inbound and outbound traffic.
- Pre-development network analysis is modelled for the base year (2023) and 10 years of future growth (2033) in surrounding traffic. The annual traffic growth rate for the 10-year future period was based on the SIDRA intersection analysis software, which allows for future analysis in surrounding traffic by applying a uniform growth rate of 2% for each year over the 10-year period.
- Post-development network analysis is modelled for Childcare Centre development is in operation and after 10 years of future growth in surrounding traffic.

These assumptions will result in the development trip distribution shown in Figures 6 and 7 for relevant traffic movement and modelled intersection.

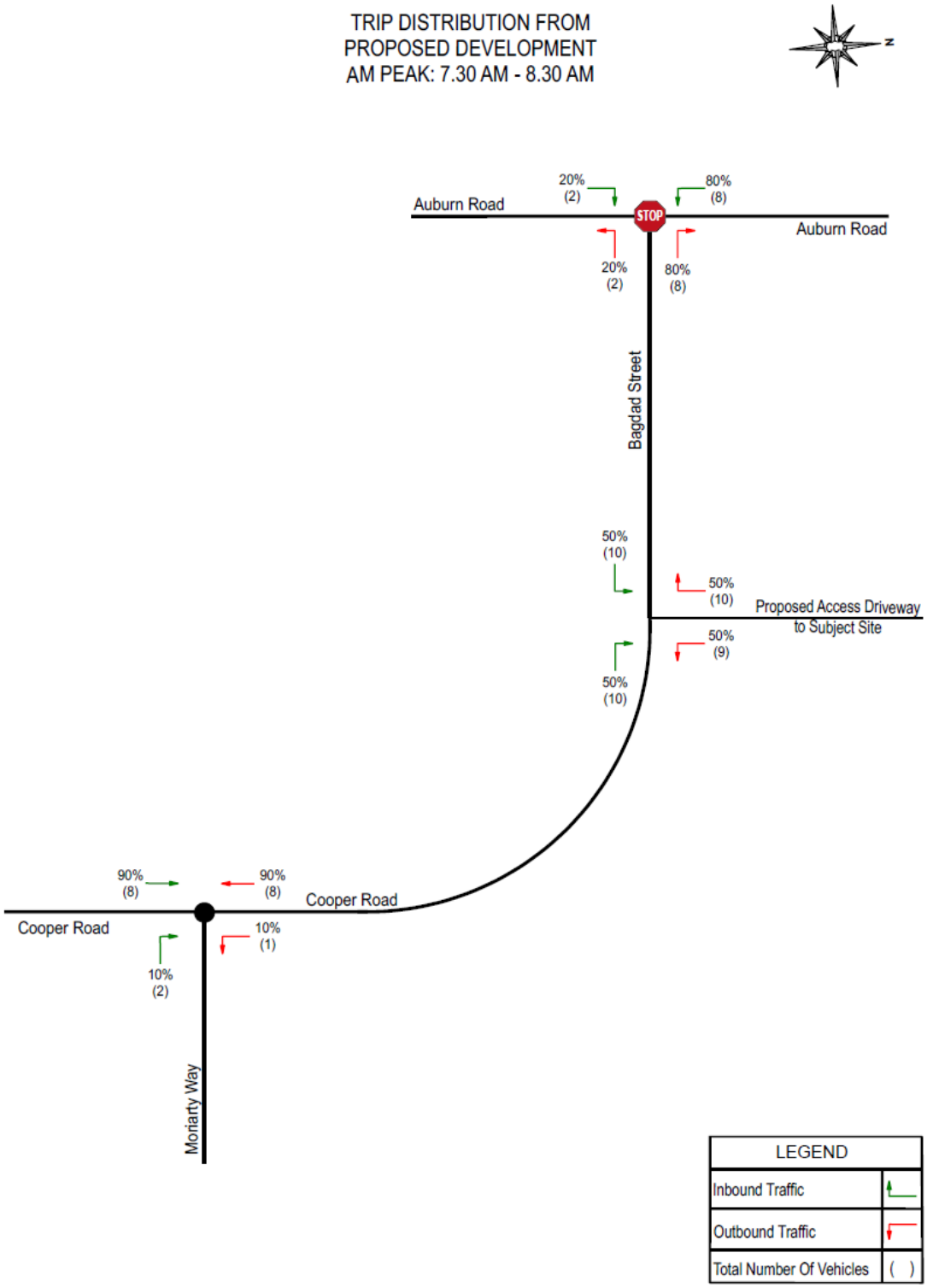


Figure 6: Development Traffic Distribution on the Surrounding Road Network – **AM Peak**

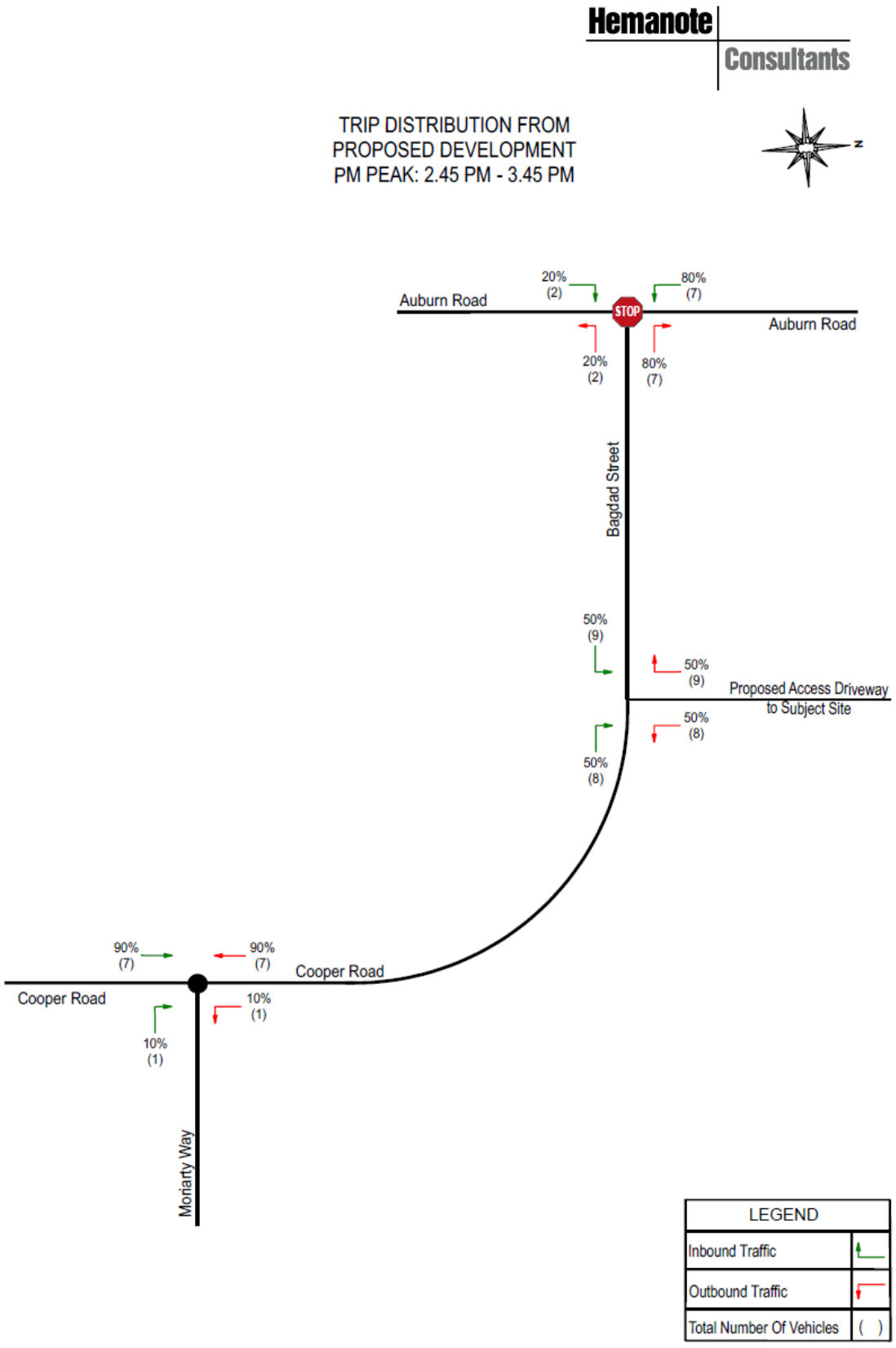


Figure 7: Development Traffic Distribution on the Surrounding Road Network – **PM Peak**

The outcome of the SIDRA modelling

A summary of the results of the SIDRA intersection performance analysis has been provided in Tables 4 to 7 below, as well as the SIDRA Movement Summary Tables attached in Appendix 'C' of this report.

Modelled Peak	Average LOS	Average Delay (sec)	DOS (Veh/C)
Base Year 2023 – Pre-Development	A	7.4	0.810
Base Year 2023 – Post Development	A	8.2	0.844
Future Year 2033 – Pre-Development	E	72.4	1.292
Future Year 2033 – Post Development	E	86.0	1.350

Table 4: Network SIDRA Modelling – Bagdad Street / Auburn Road – 7.30am – 8.30am

Modelled Peak	Average LOS	Average Delay (sec)	DOS (Veh/C)
Base Year 2023 – Pre-Development	A	4.1	0.466
Base Year 2023 – Post Development	A	4.3	0.469
Future Year 2033 – Pre-Development	A	5.5	0.678
Future Year 2033 – Post Development	A	5.9	0.716

Table 5: Network SIDRA Modelling – Bagdad Street / Auburn Road – 2.45pm – 3.45pm

Modelled Peak	Average LOS	Average Delay (sec)	DOS (Veh/C)
Base Year 2023 – Pre-Development	A	5.7	0.133
Base Year 2023 – Post Development	A	5.7	0.140
Future Year 2033 – Pre-Development	A	5.8	0.161
Future Year 2033 – Post Development	A	5.8	0.170

Table 6: Network SIDRA Modelling – Cooper Road / Moriarty Way – 7.30am – 8.30am

Modelled Peak	Average LOS	Average Delay (sec)	DOS (Veh/C)
Base Year 2023 – Pre-Development	A	5.1	0.111
Base Year 2023 – Post Development	A	5.1	0.117
Future Year 2033 – Pre-Development	A	5.2	0.134
Future Year 2033 – Post Development	A	5.2	0.141

Table 7: Network SIDRA Modelling – Cooper Road / Moriarty Way – 2.45pm – 3.45pm

It can be concluded from the results of the SIDRA modelling that:

Base Year

- The current operational performance (pre-development) at the T-intersection of Cooper Road / Moriarty Way is currently operating at a Level of Service (LOS) 'A' during weekday AM & PM peak.
- The current operational performance (pre-development) at the T-intersection of Bagdad Street / Auburn Road during the AM & PM peak periods is at an overall Level of Service 'A', with the exception of the eastern approach on Bagdad Street, which is at an overall LOS 'B' during the AM and PM peak periods.
- The proposed childcare centre (post-development) will not alter the current LOS at the subject intersections and will continue to operate at its current levels of service during weekday AM & PM peak.

Future Year

- The future 10-year (pre-development) analysis indicates that the subject T-intersection of Cooper Road / Moriarty Way will operate at LOS ‘A’, during weekday AM & PM peak.
- The future 10-year (pre-development) analysis indicates that the subject T-intersection of Bagdad Street / Auburn Road will continue to operate at an overall Level of Service ‘A’ during the **PM peak period**, with the exception of the eastern approach on Bagdad Street, which will operate at an overall LOS ‘B’. The **AM peak period**, however, will continue to operate at an overall Level of Service ‘A’, with the exception of the eastern approach on Bagdad Street, which will operate at an overall LOS ‘F’.
- The proposed childcare centre (post-development) will not alter the future LOS at the subject intersections and will continue to operate at the predicted future levels of service.

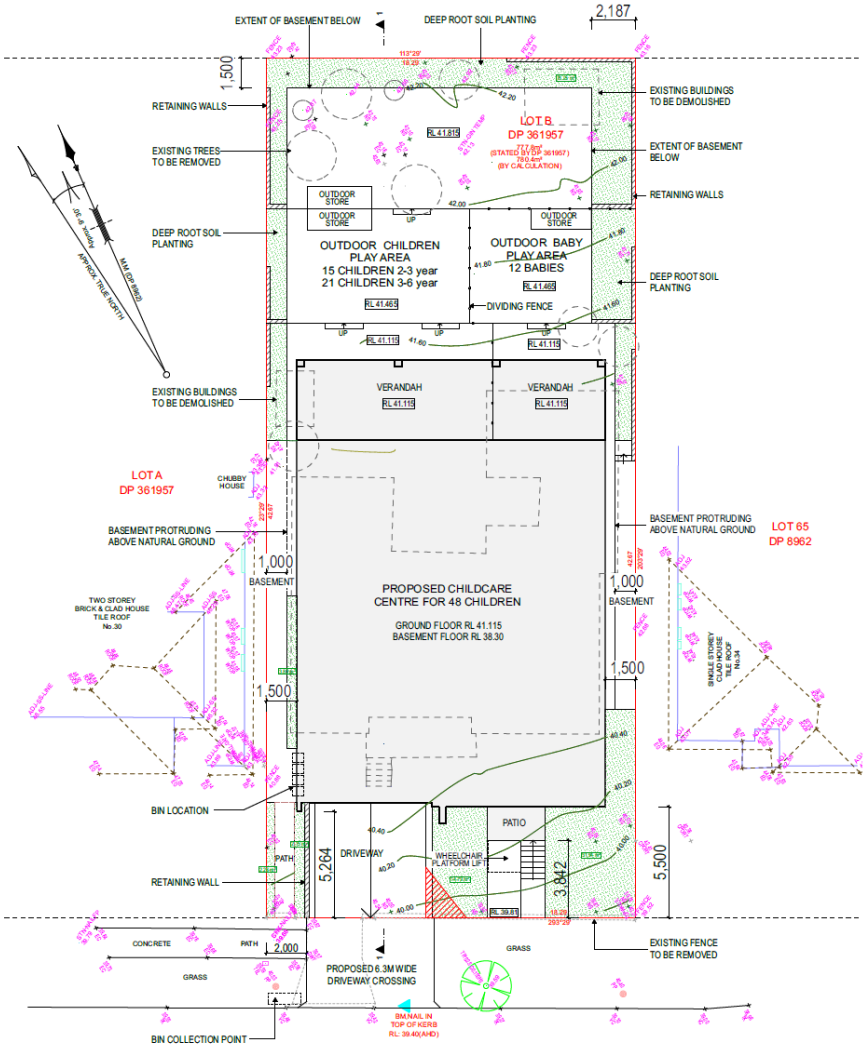
Therefore, the estimated traffic generation from the proposed development is of low impact on existing flows on Bagdad Street and surrounding streets and will not have adverse impacts on the current operational performance of the subject existing intersections, which will continue to operate at the same levels of service.

7 CONCLUSION

It can be concluded from the traffic and parking impact assessment that the proposed childcare centre development at **32 Bagdad Street, Regents Park**, will not have adverse impacts on existing traffic or parking conditions and is worthy of Council's support in its current form.

- The current traffic flows on Bagdad Street, Cooper Road, Moriarty Way and Auburn Road are appropriate for local roads and a regional road in a mainly residential area, where traffic is free flowing without major queuing or delays in peak hours, with spare capacity.
- The estimated traffic generation from the proposed development is of low impact on existing flows on Bagdad Street and surrounding streets and will not have adverse impacts on the current operational performance of the subject existing intersections, which will continue to operate at the same levels of service. The traffic generated by the proposed childcare centre development can be readily accommodated within the existing road network.
- The potential increase in the number of vehicle movements in and about Bagdad Street and adjacent streets will not have adverse impacts on the amenity of the area.
- The parking demand resulting from the proposed childcare centre can be easily accommodated within the proposed adequate and compliant off-street car and bicycle parking for both staff and visitors/parents, which is in compliance Council's parking requirements.
- The on-site vehicular access, car parking layout and vehicular circulation is adequate for the proposed development and in accordance with AS2890.1:2004 and AS2890.6:2022, where vehicles are to enter and exit the site in a forward direction at all times.
- The subject site has good access to existing public transport services.
- The proposed development will not have adverse impact on parking in the surrounding area.

Appendix A – Proposed Development Plans



FLOOR AREA CALCULATIONS

SITE AREA	780.0m²
Ground floor	256.0m²
FSR	0.33:1

STAFF CALCULATIONS

AGE GROUP	NO. OF CHILDREN		STAFF REQ.
0-2 YEARS	12	1:4	3
2-3 YEARS	15	1:5	3
3-6 YEARS	21	1:10	3
TOTAL	48		9

INDOOR & OUTDOOR PLAY AREA CALCULATIONS

INDOOR AREA REQ.: 3.25M²/CHILD — PROPOSED INDOOR PLAY AREA

AGE GROUP	NO. OF CHILDREN	MIN. AREA REQ.	UNENCUMBERED AREA PROVIDED
0-2 YEARS	12	39.00M²	39.17M²
2-3 YEARS	15	48.75M²	48.80M²
3-6 YEARS	21	68.25M²	74.81M²
TOTAL	48	156.00M²	162.75M²

OUTDOOR AREA REQ.: 7.0M²/CHILD — PROPOSED OUTDOOR PLAY AREA

AGE GROUP	NO. OF CHILDREN	MIN. AREA REQ.	UNENCUMBERED AREA PROVIDED
0-2 YEARS	12	84.00M²	84.84M²
2-3 YEARS	15	105.00M²	105.00M²
3-6 YEARS	21	147.00M²	147.12M²
TOTAL	48	336.00M²	336.96M²

no.	amendment	date
3		
2		
1	Issued for review	21-9-23

BORIS GRGUREVIC & ASSOCIATES P/L
ACCREDITED BUILDING DESIGNER (Reg. No. 6213)
REGISTERED DESIGN PRACTITIONER (DEP0002934)
M 0418 863 975 **E** borisgrg@optusnet.com.au

notes: All dimensions & levels to be checked & verified on site by the builder prior to the commencement of any works. Use figured dimensions in preference to scale.

client: TRIPLE C HOLDINGS P/L

project: PROPOSED CHILDCARE CENTRE - 48 CHILDREN

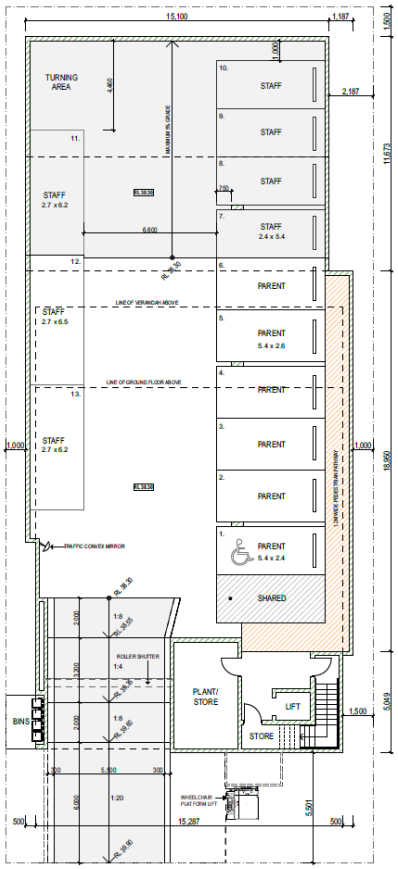
address: 32 BAGDAD STREET, REGENTS PARK

title: SITE PLAN

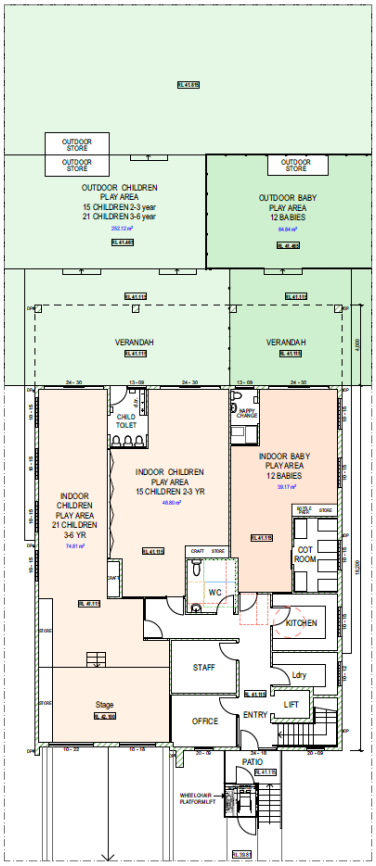
job number

date: Sept. 2023 | scale: 1:200 @ A3

dwg by: BG | sheet no.: 1 of 4

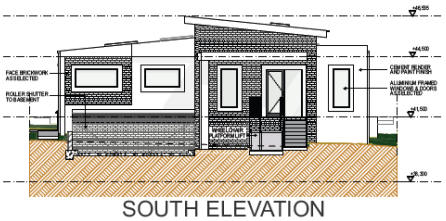


BASEMENT PLAN

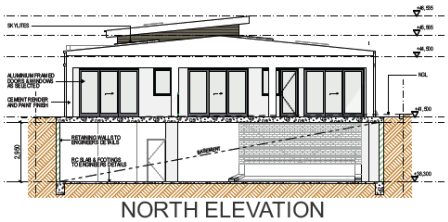


GROUND FLOOR PLAN

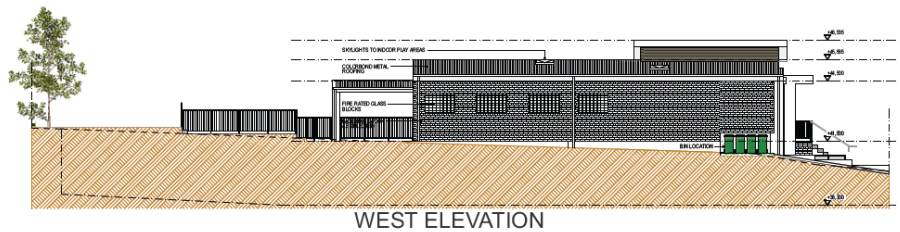
3						
2						
1	Issued for review	21-9-23	client	TRIPLE C HOLDINGS P/L		
no.	amendment	date				
BORIS GRGUREVIC & ASSOCIATES P/L ACCREDITED BUILDING DESIGNER (Reg. No. 6213) REGISTERED DESIGN PRACTITIONER (DEP0002934) **M** 0418 863 975 **E** borisgrg@optusnet.com.au			project	PROPOSED CHILDCARE CENTRE - 48 CHILDREN	title	GROUND FLOOR PLAN AND BASEMENT PLAN
					job number	
notes: All dimensions & levels to be checked & verified on site by the builder prior to the commencement of any works. Use figured dimensions in preference to scale.			address	32 BAGDAD STREET, REGENTS PARK	date Sept. 2023	scale 1:200 @ A3
					dwg by BG	sheet no. 2 of 4



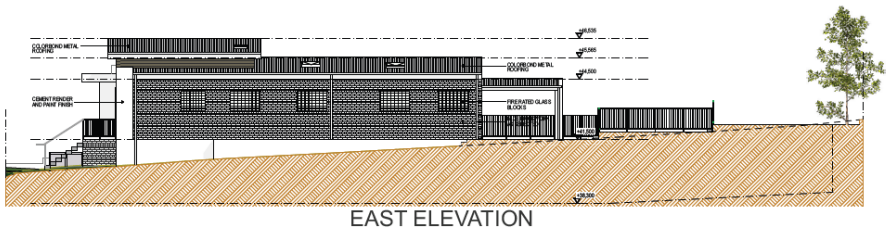
SOUTH ELEVATION



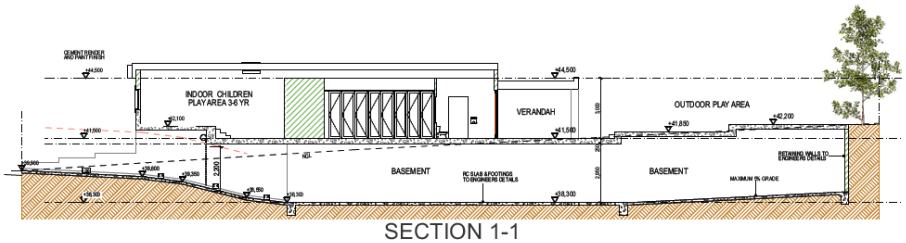
NORTH ELEVATION



WEST ELEVATION



EAST ELEVATION



SECTION 1-1

3		
2		
1	Issued for review	21-9-23
no.	amendment	date

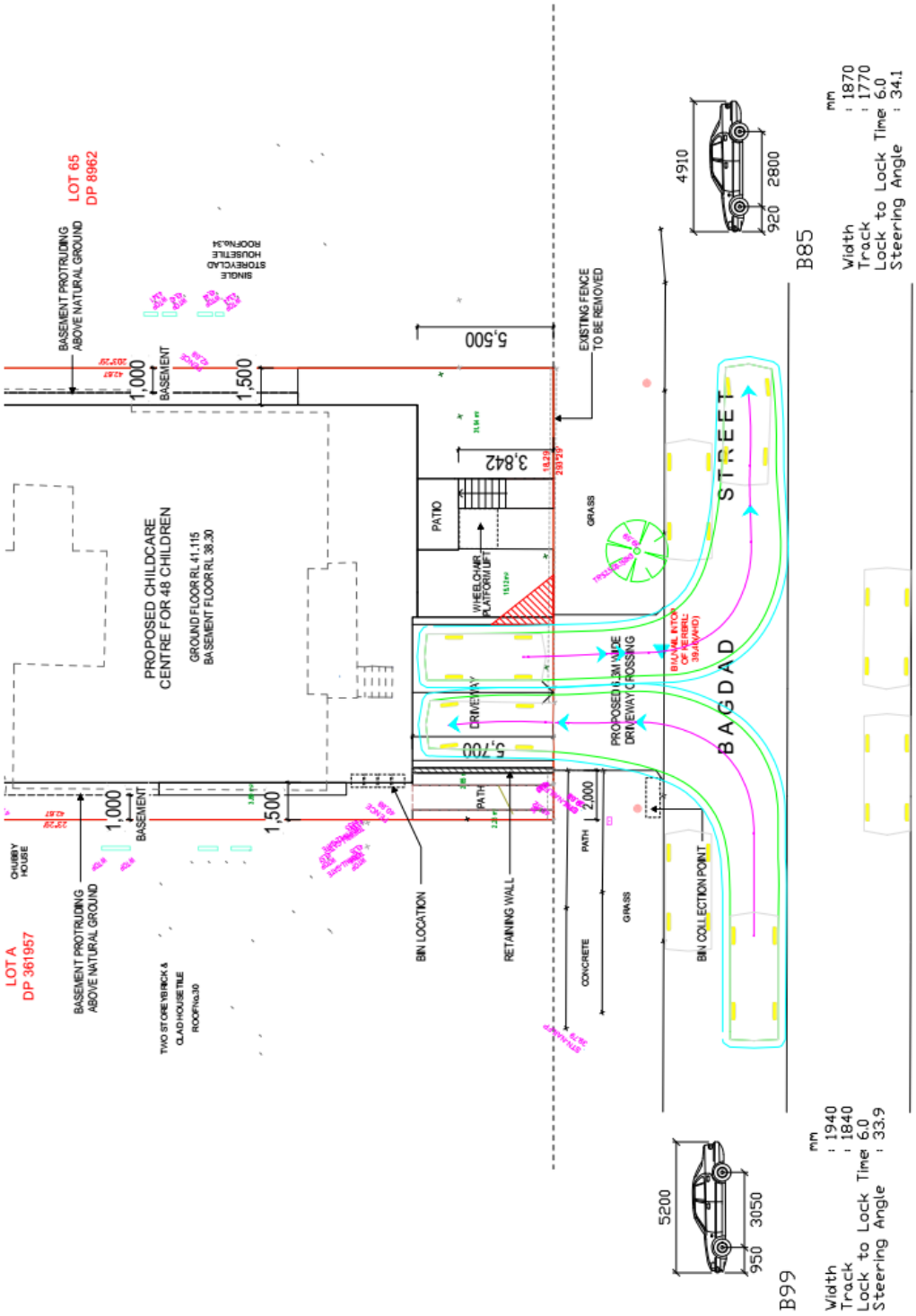
BORIS GRGUREVIC & ASSOCIATES P/L
ACCREDITED BUILDING DESIGNER (Reg. No. 6213)
REGISTERED DESIGN PRACTITIONER (DEP0002934)
M 0418 863 975 **E** borisgrg@optusnet.com.au

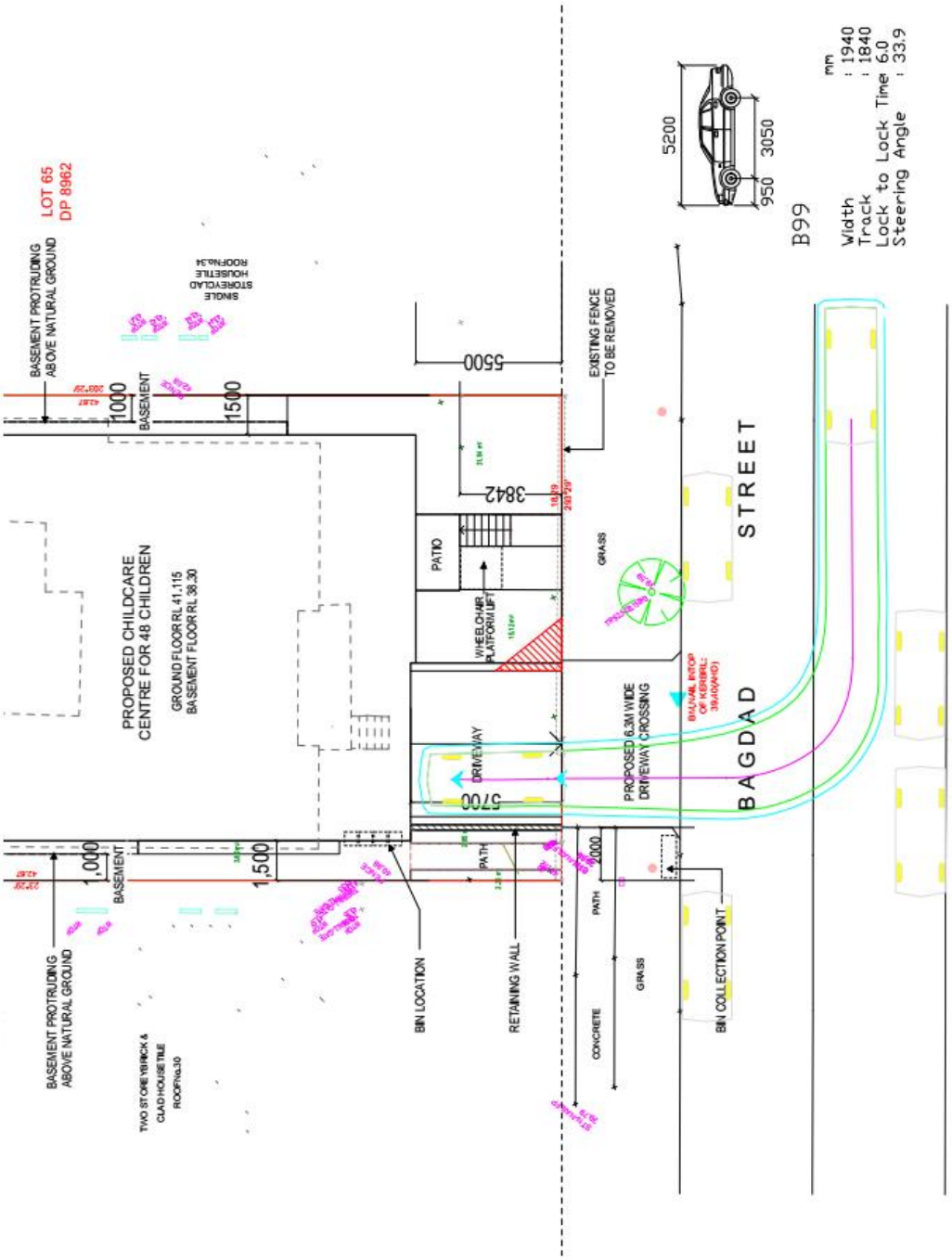
notes: All dimensions & levels to be checked & verified on site by the builder prior to the commencement of any works. Use figured dimensions in preference to scale.

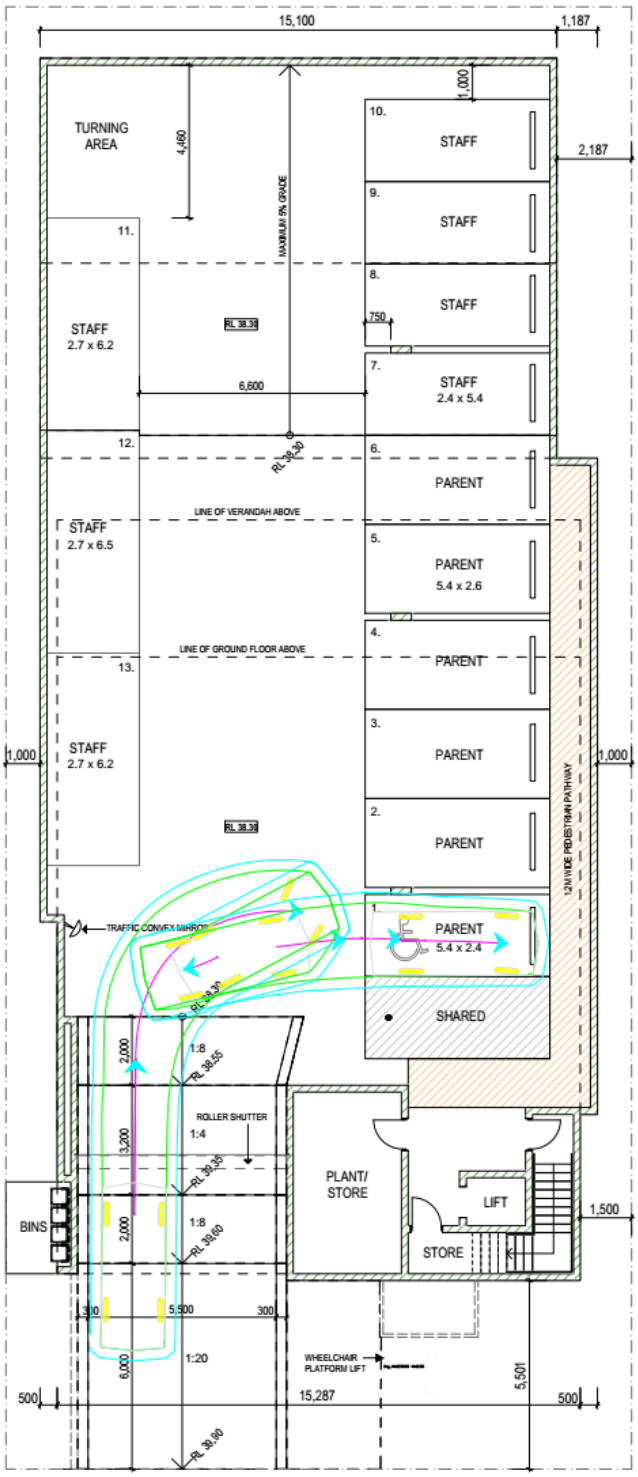
client	TRIPLE C HOLDINGS P/L
project	PROPOSED CHILDCARE CENTRE - 48 CHILDREN
address	32 BAGDAD STREET, REGENTS PARK

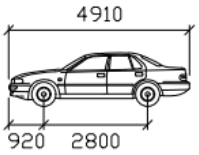
title	ELEVATIONS AND SECTION
job number	
date	Sept. 2023
scale	1:200 @ A3
dwg by	BG
sheet no.	3 of 4

Appendix B – Vehicle Swept Paths


LOT 65
DP 8962
LOT A
DP 361957
PROPOSED CHILDCARE
CENTRE FOR 48 CHILDREN
GROUND FLOOR RL 41.115
BASEMENT FLOOR RL 38.30
BASEMENT PROTRUDING
ABOVE NATURAL GROUND
BASEMENT
1,000
1,500
5,500
3,842
5,700
2,000
EXISTING FENCE
TO BE REMOVED
PATIO
GRASS
WHEELCHAIR
PLATFORM LIFT
DRIVEWAY
PROPOSED 0.3M NODE
DRIVEWAY CROSSING
BIN LOCATION
RETAINING WALL
PATH
CONCRETE
BIN COLLECTION POINT
STREET
BAGDAD
CHUBBY
HOUSE
TWO STOREY BRICK &
CLAD HOUSE TILE
ROOF No.30
SINGLE
STOREYCLAD
HOUSETILE
ROOF No.34
4910
2800
920
B85
Width : 1870
Track : 1770
Lock to Lock Time 6.0
Steering Angle : 34.1
5200
3050
950
B99
Width : 1940
Track : 1840
Lock to Lock Time 6.0
Steering Angle : 33.9

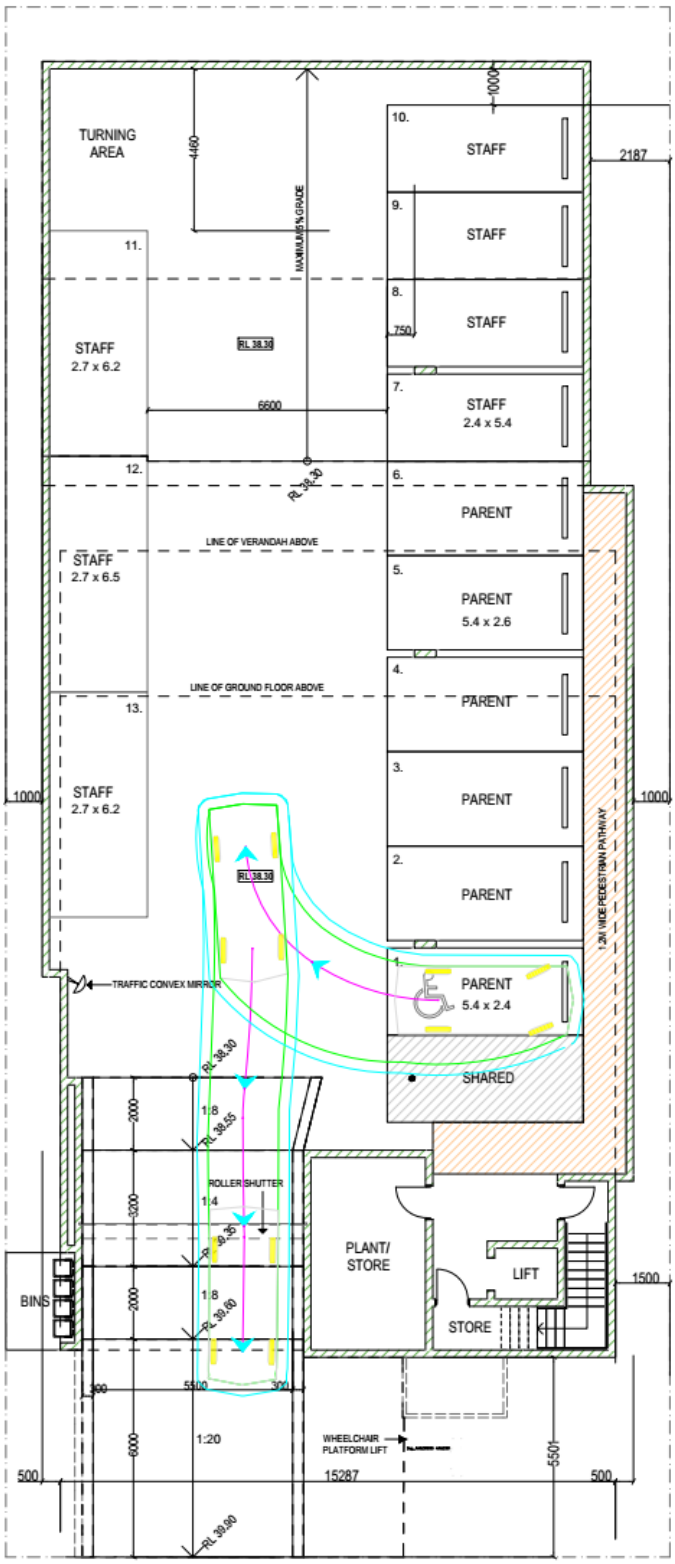

LOT 65
DP 8962
BASEMENT PROTRUDING ABOVE NATURAL GROUND
1000
BASEMENT
1500
PROPOSED CHILDCARE CENTRE FOR 48 CHILDREN
GROUND FLOOR RL 41.115
BASEMENT FLOOR RL 38.30
5500
3842
EXISTING FENCE TO BE REMOVED
PATIO
WHEELCHAIR PLATFORM LIFT
GRASS
DRIVEWAY
5700
PROPOSED 6.3M WIDE DRIVEWAY CROSSING
BAGDAD STREET
PATH
4000
CONCRETE
BIN COLLECTION POINT
BIN LOCATION
RETAINING WALL
TWO STOREY BRICK & CLAD HOUSE TILE ROOF
5200
3050
950
B99
mm
Width : 1940
Track : 1840
Lock to Lock Time 6.0
Steering Angle : 33.9

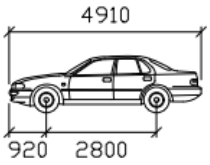




B85

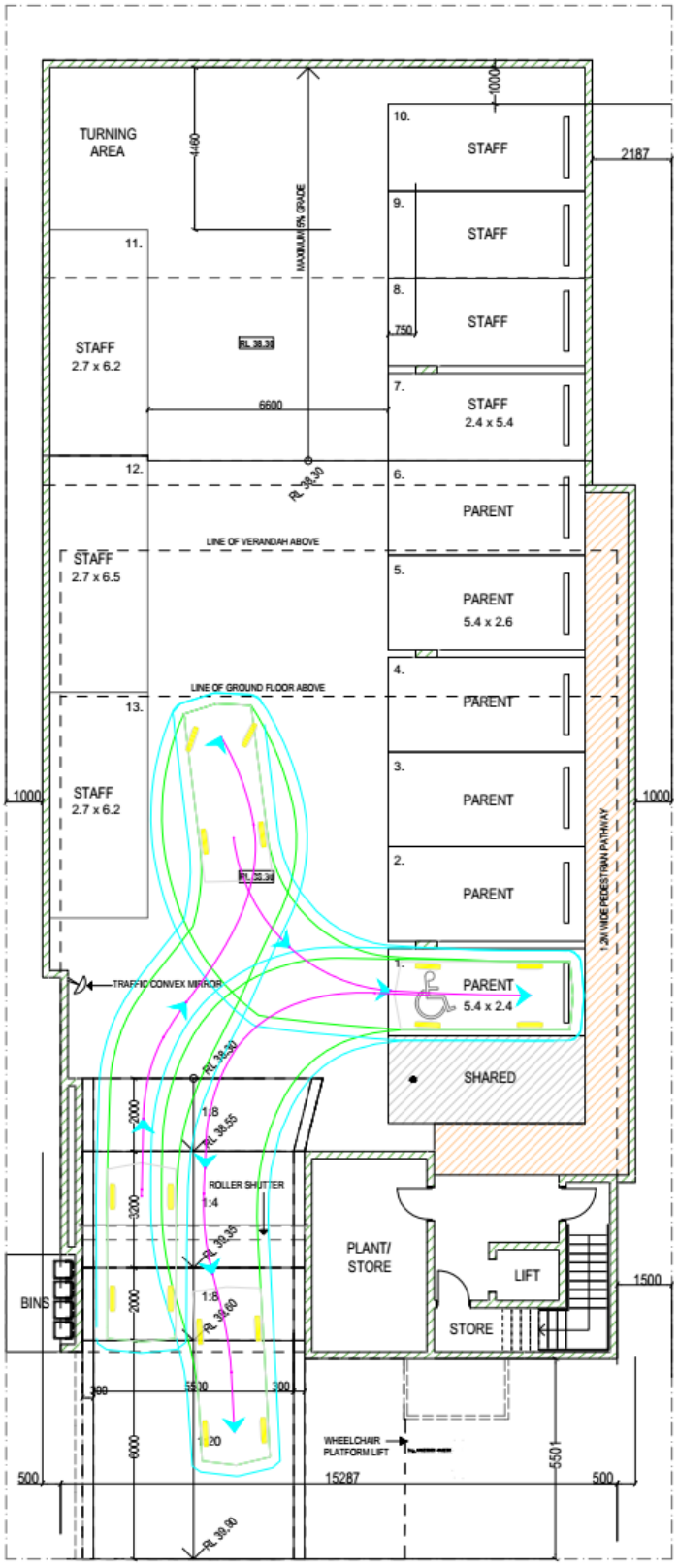
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

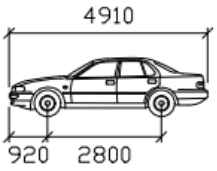




B85

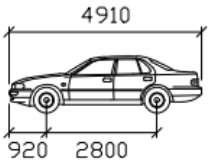
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1





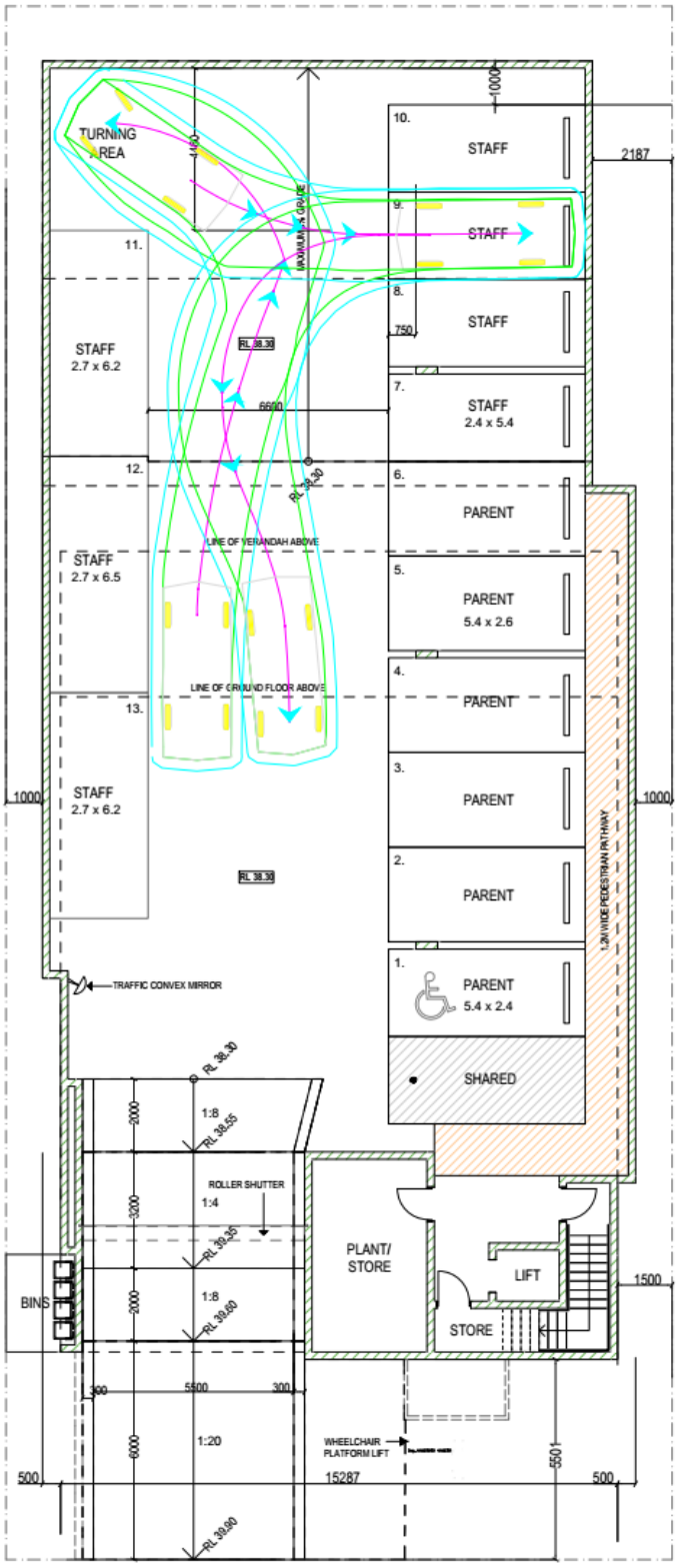
B85

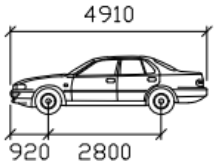
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



B85

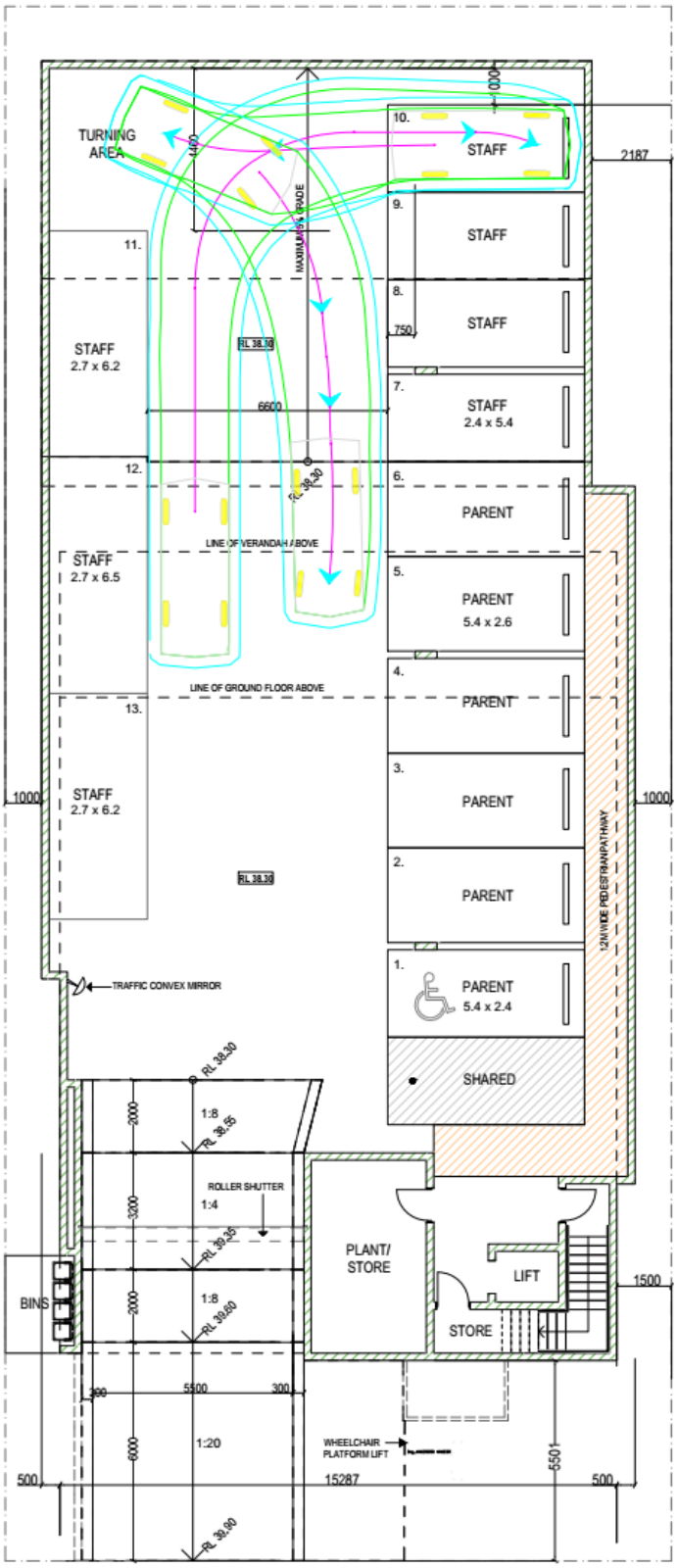
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	6.0
Steering Angle	: 34.1

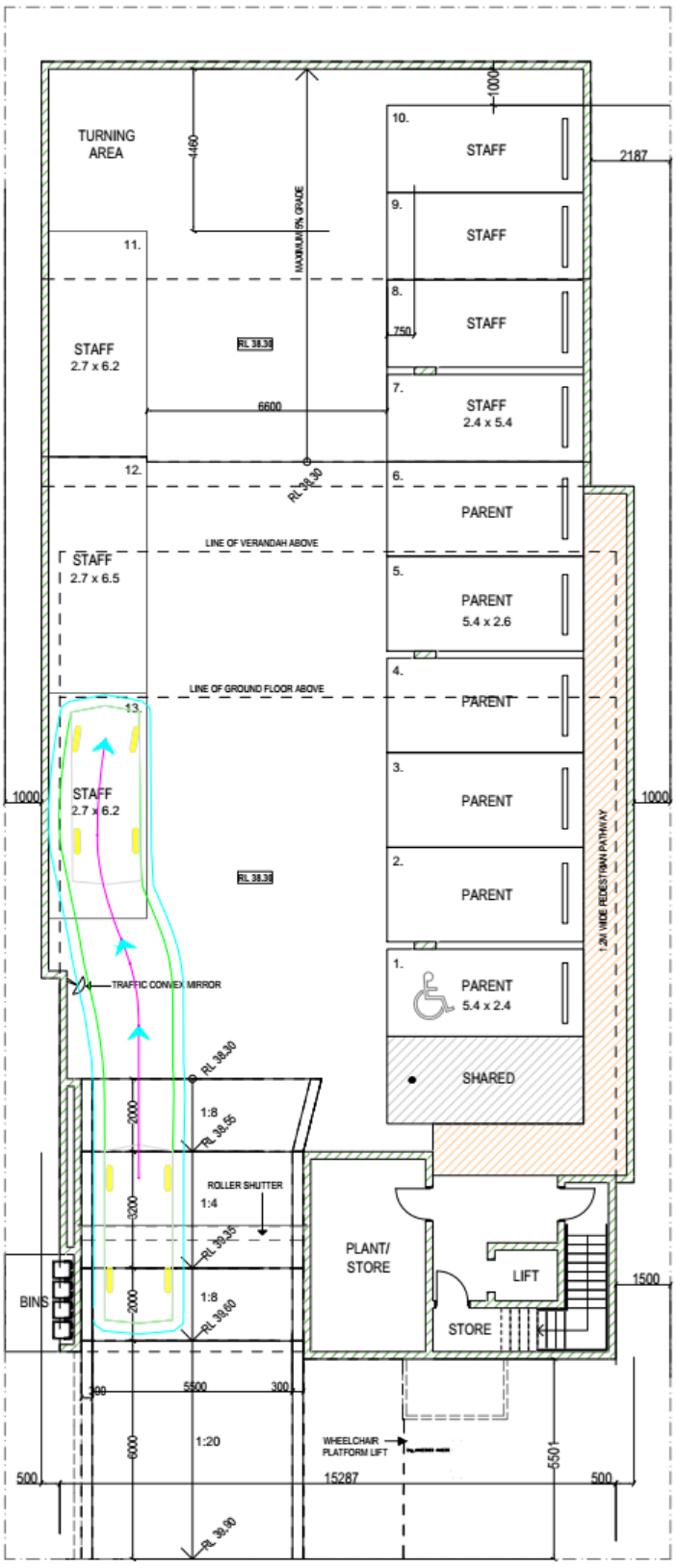


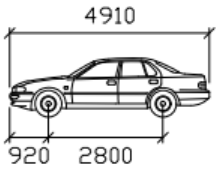


B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

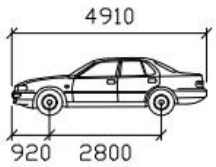






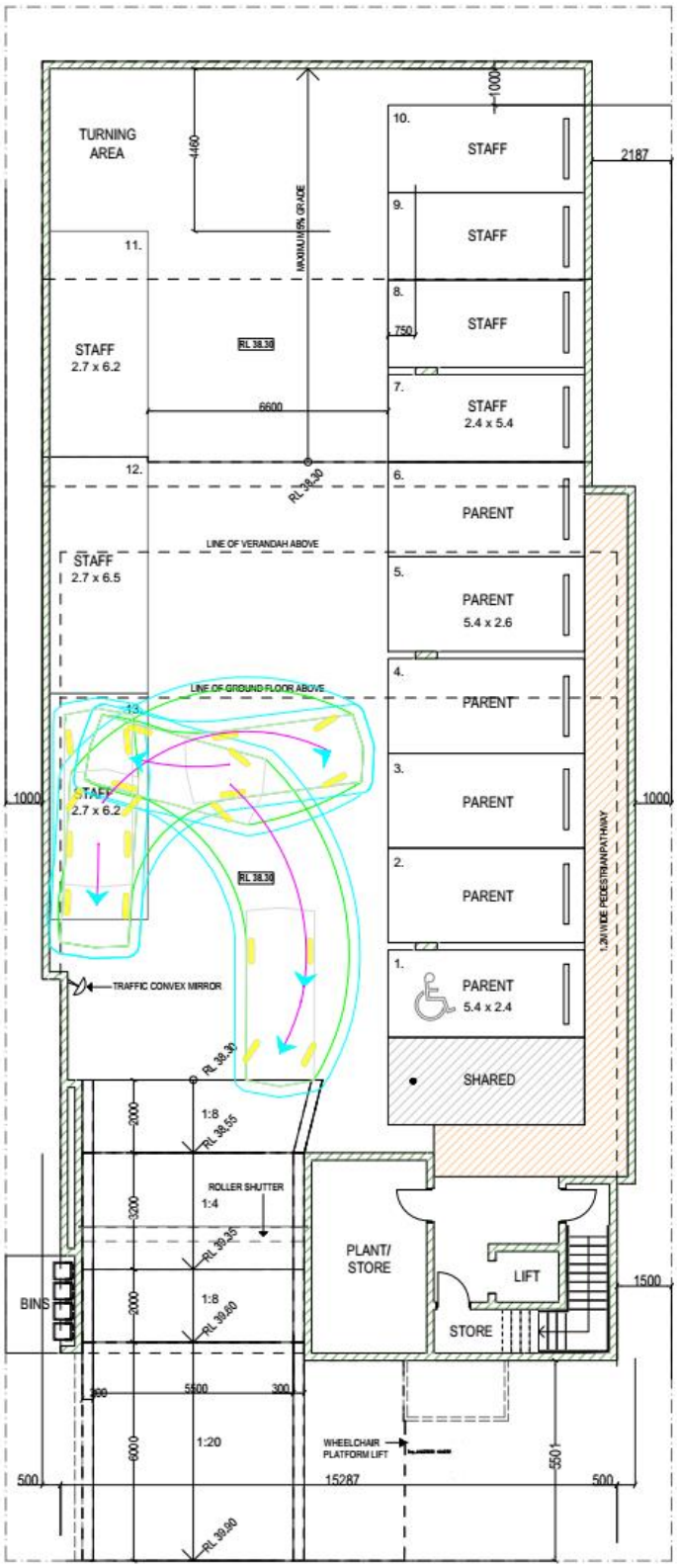
B85

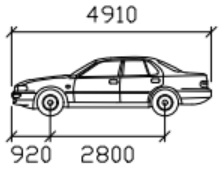
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	6.0
Steering Angle	: 34.1



B85

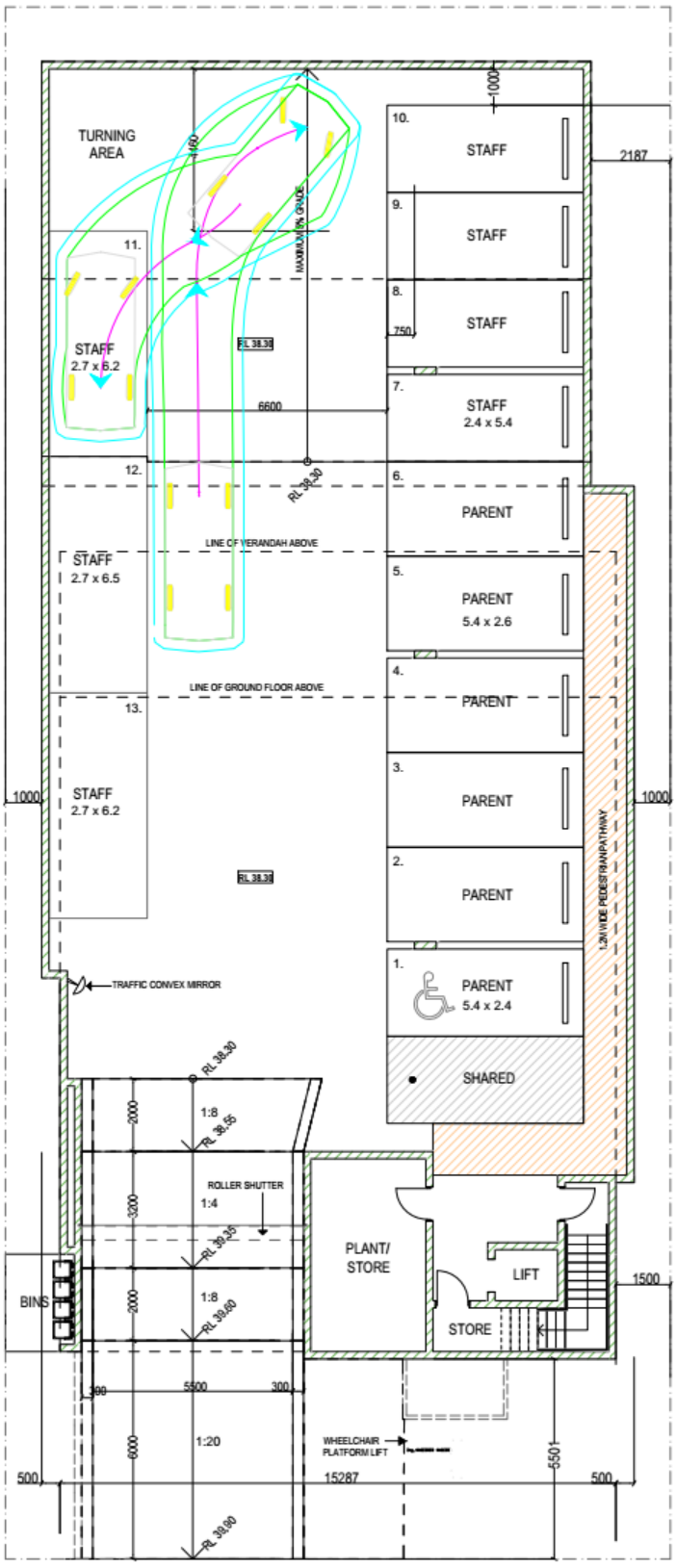
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

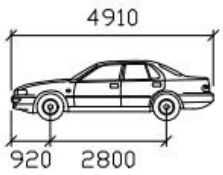




B85

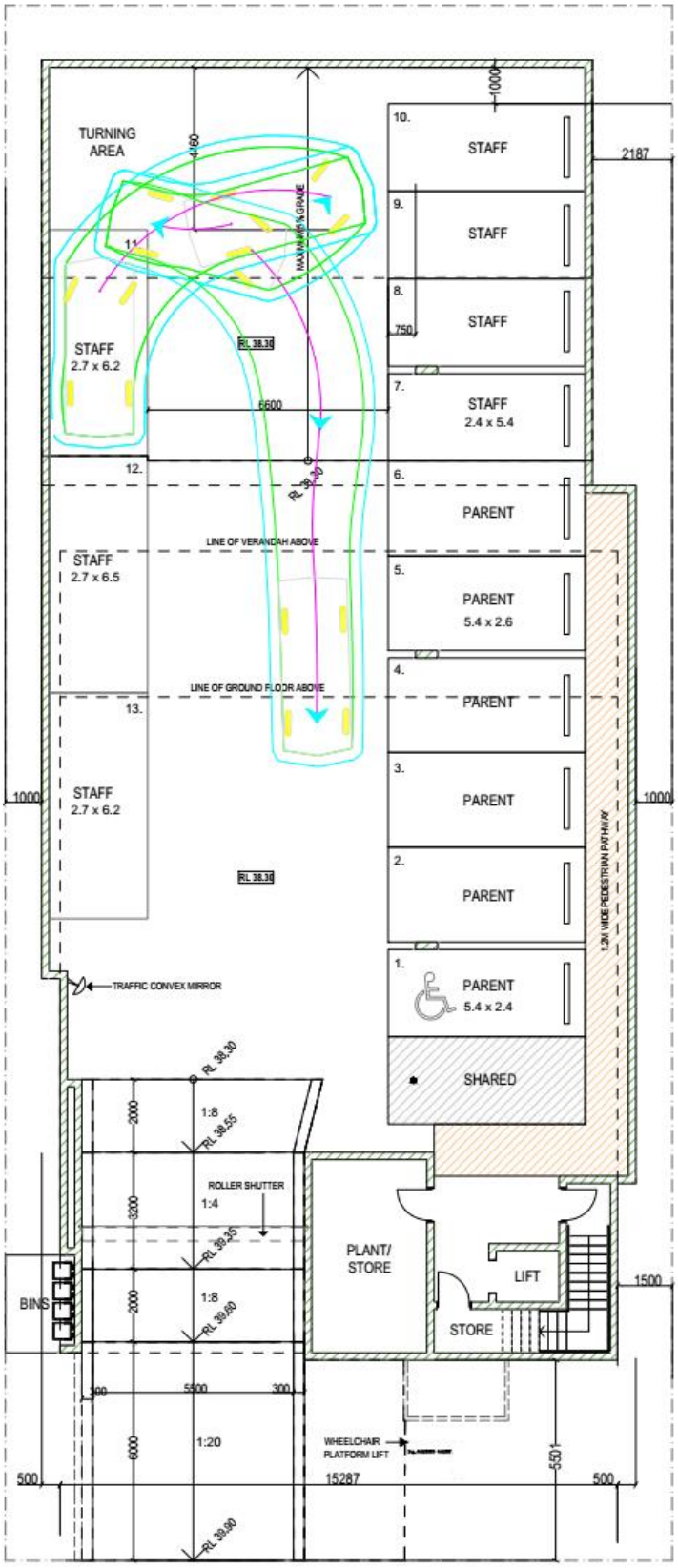
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

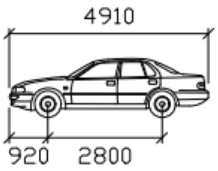




B85

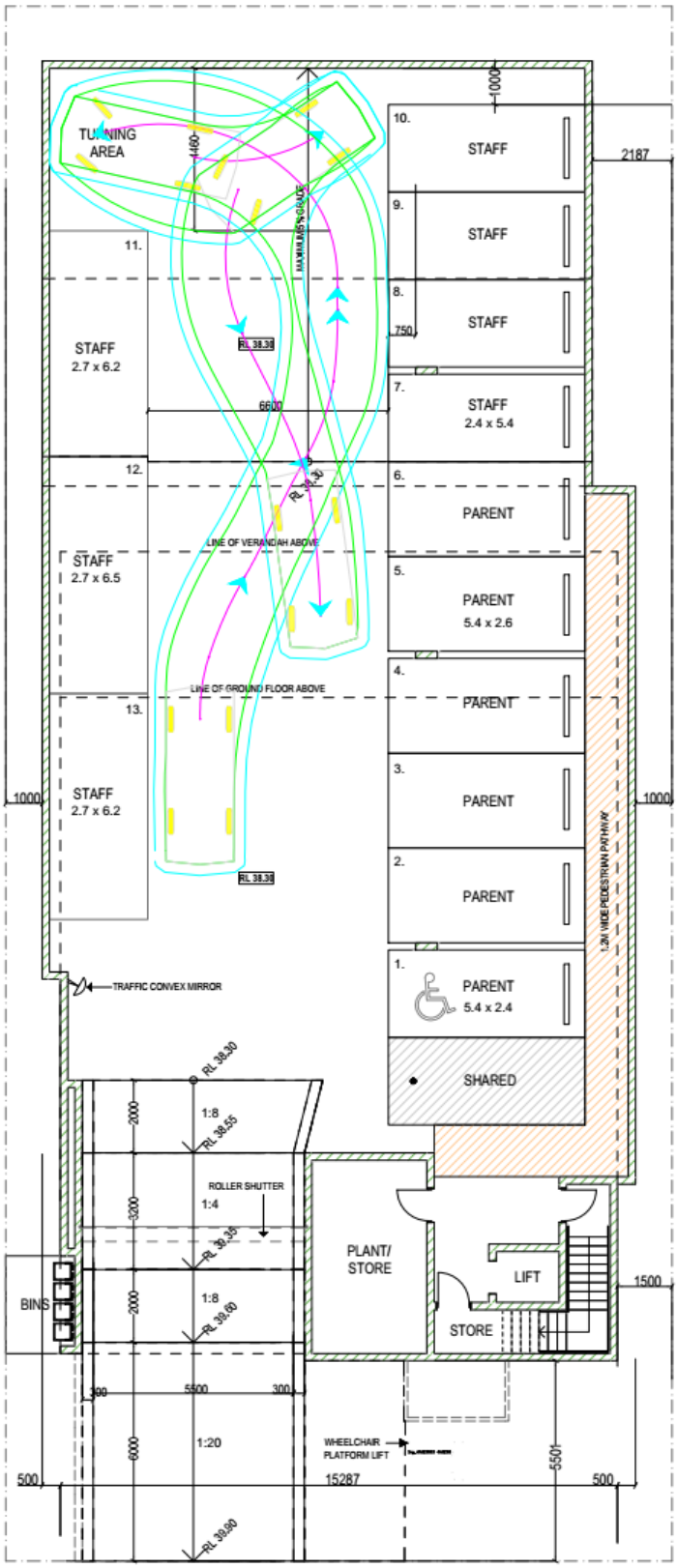
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

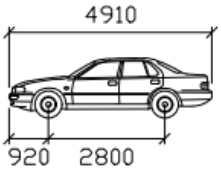




B85

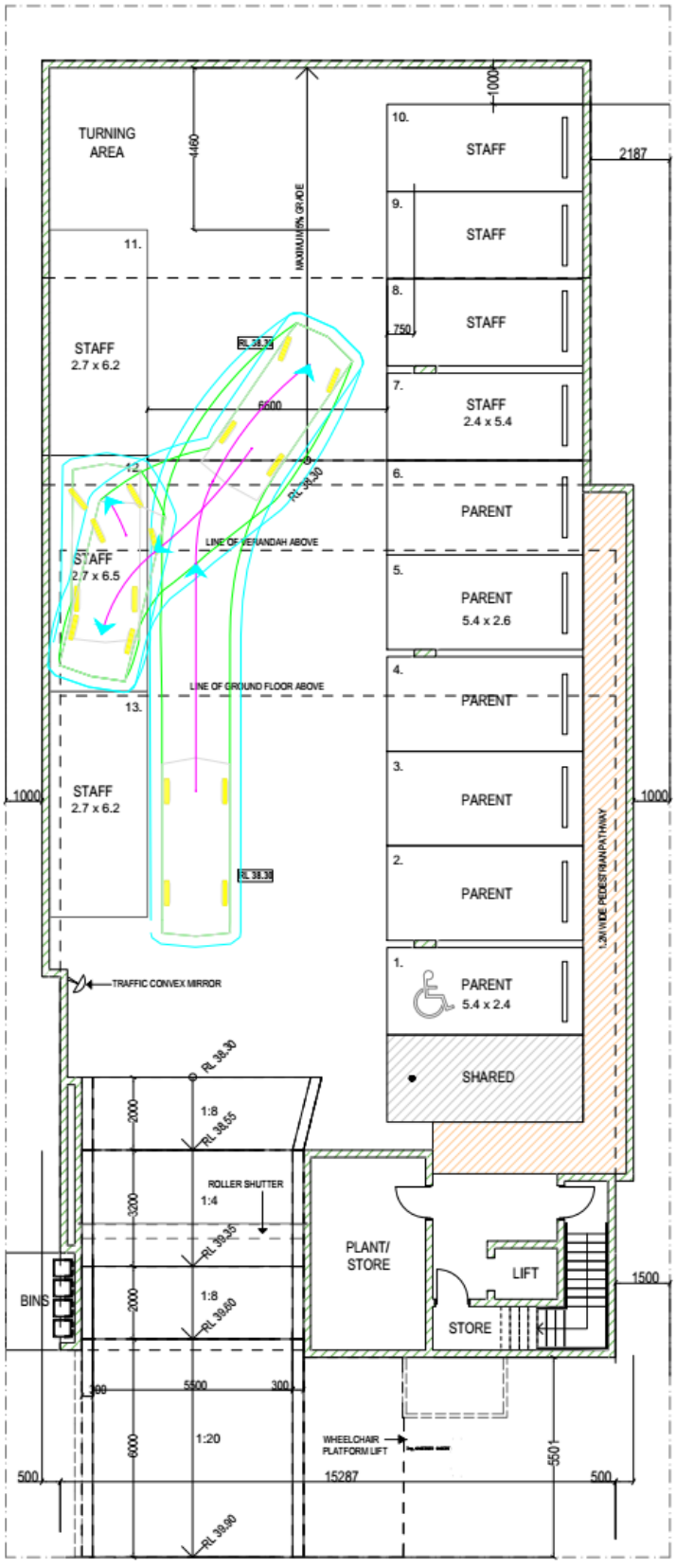
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

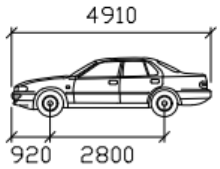




B85

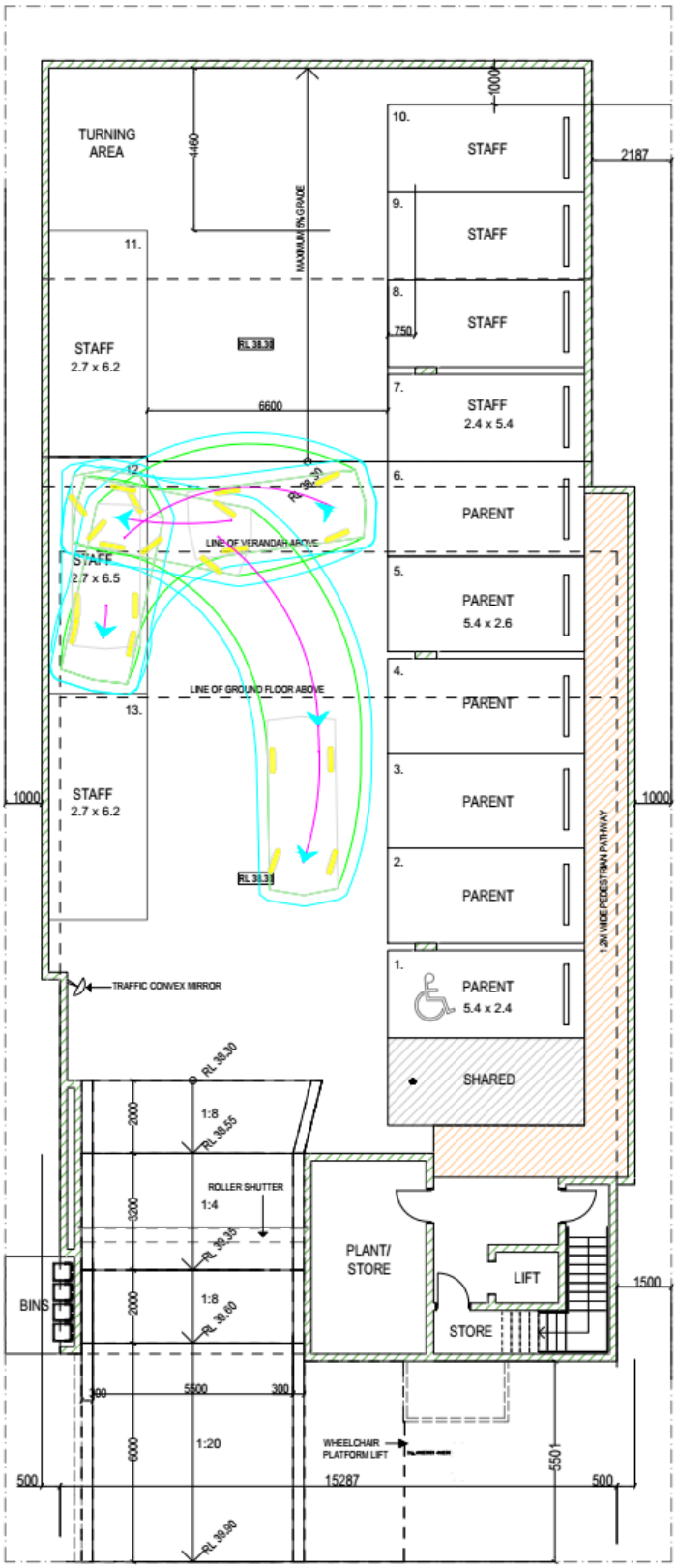
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	6.0
Steering Angle	: 34.1





B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



Appendix C – SIDRA Intersection Analysis

MOVEMENT SUMMARY – 7.30am – 8.30am – Base Year 2023 – Bagdad Street / Auburn Road

Pre-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Auburn Road														
2	T1	537	0.0	537	0.0	0.277	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	26	0.0	26	0.0	0.022	5.2	LOS A	0.0	0.3	0.45	0.60	0.45	24.6
Approach		563	0.0	563	0.0	0.277	0.3	NA	0.0	0.3	0.02	0.03	0.02	58.8
East: Bagdad Street														
4	L2	14	0.0	14	0.0	0.810	18.9	LOS B	2.4	16.5	0.89	1.38	2.30	36.5
6	R2	301	0.0	301	0.0	0.810	28.4	LOS B	2.4	16.5	0.89	1.38	2.30	38.9
Approach		315	0.0	315	0.0	0.810	28.0	LOS B	2.4	16.5	0.89	1.38	2.30	38.8
North: Auburn Road														
7	L2	118	0.0	118	0.0	0.217	5.6	LOS A	0.0	0.0	0.00	0.17	0.00	52.9
8	T1	299	0.0	299	0.0	0.217	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	54.2
Approach		417	0.0	417	0.0	0.217	1.6	NA	0.0	0.0	0.00	0.17	0.00	53.9
All Vehicles		1295	0.0	1295	0.0	0.810	7.4	NA	2.4	16.5	0.23	0.40	0.57	45.5

Post-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Auburn Road														
2	T1	537	0.0	537	0.0	0.278	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	35	0.0	35	0.0	0.029	5.2	LOS A	0.0	0.3	0.45	0.61	0.45	24.5
Approach		572	0.0	572	0.0	0.278	0.3	NA	0.0	0.3	0.03	0.04	0.03	58.5
East: Bagdad Street														
4	L2	16	0.0	16	0.0	0.844	21.2	LOS B	2.7	18.9	0.90	1.45	2.59	35.3
6	R2	309	0.0	309	0.0	0.844	30.9	LOS C	2.7	18.9	0.90	1.45	2.59	37.8
Approach		325	0.0	325	0.0	0.844	30.5	LOS C	2.7	18.9	0.90	1.45	2.59	37.6
North: Auburn Road														
7	L2	120	0.0	120	0.0	0.218	5.6	LOS A	0.0	0.0	0.00	0.17	0.00	52.8
8	T1	299	0.0	299	0.0	0.218	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	54.1
Approach		419	0.0	419	0.0	0.218	1.6	NA	0.0	0.0	0.00	0.17	0.00	53.8
All Vehicles		1316	0.0	1316	0.0	0.844	8.2	NA	2.7	18.9	0.23	0.43	0.65	44.4

MOVEMENT SUMMARY – 7.30am – 8.30am – Base Year 2023 – Cooper Road / Moriarty Way

Pre-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Cooper Road														
2	T1	127	0.0	127	0.0	0.133	5.1	LOS A	0.3	2.0	0.20	0.52	0.20	39.8
3	R2	34	0.0	34	0.0	0.133	8.0	LOS A	0.3	2.0	0.20	0.52	0.20	39.0
Approach		161	0.0	161	0.0	0.133	5.7	LOS A	0.3	2.0	0.20	0.52	0.20	39.5
East: Moriarty Way														
4	L2	32	0.0	32	0.0	0.082	5.3	LOS A	0.2	1.1	0.29	0.61	0.29	38.7
6	R2	56	0.0	56	0.0	0.082	8.2	LOS A	0.2	1.1	0.29	0.61	0.29	27.1
Approach		87	0.0	87	0.0	0.082	7.1	LOS A	0.2	1.1	0.29	0.61	0.29	33.2
North: Cooper Road														
7	L2	37	0.0	37	0.0	0.120	5.1	LOS A	0.2	1.7	0.14	0.49	0.14	46.4
8	T1	118	0.0	118	0.0	0.120	5.0	LOS A	0.2	1.7	0.14	0.49	0.14	53.2
Approach		155	0.0	155	0.0	0.120	5.0	LOS A	0.2	1.7	0.14	0.49	0.14	51.6
All Vehicles		403	0.0	403	0.0	0.133	5.7	LOS A	0.3	2.0	0.20	0.53	0.20	46.6

Post-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Cooper Road														
2	T1	136	0.0	136	0.0	0.140	5.1	LOS A	0.3	2.1	0.21	0.52	0.21	39.8
3	R2	34	0.0	34	0.0	0.140	8.0	LOS A	0.3	2.1	0.21	0.52	0.21	39.0
Approach		169	0.0	169	0.0	0.140	5.7	LOS A	0.3	2.1	0.21	0.52	0.21	39.5
East: Moriarty Way														
4	L2	32	0.0	32	0.0	0.084	5.4	LOS A	0.2	1.1	0.30	0.61	0.30	38.6
6	R2	58	0.0	58	0.0	0.084	8.2	LOS A	0.2	1.1	0.30	0.61	0.30	27.0
Approach		89	0.0	89	0.0	0.084	7.2	LOS A	0.2	1.1	0.30	0.61	0.30	33.0
North: Cooper Road														
7	L2	38	0.0	38	0.0	0.127	5.1	LOS A	0.3	1.9	0.15	0.49	0.15	46.4
8	T1	126	0.0	126	0.0	0.127	5.0	LOS A	0.3	1.9	0.15	0.49	0.15	53.2
Approach		164	0.0	164	0.0	0.127	5.0	LOS A	0.3	1.9	0.15	0.49	0.15	51.6
All Vehicles		423	0.0	423	0.0	0.140	5.7	LOS A	0.3	2.1	0.20	0.53	0.20	46.7

MOVEMENT SUMMARY – 2.45pm – 3.45pm – Base Year 2023 – Bagdad Street / Auburn Road

Pre-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV [ ] %	ARRIVAL FLOWS [Total veh/h]	HV [ ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	[Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Auburn Road														
2	T1	327	0.0	327	0.0	0.169	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	26	0.0	26	0.0	0.027	6.1	LOS A	0.0	0.3	0.53	0.67	0.53	22.3
Approach		354	0.0	354	0.0	0.169	0.5	NA	0.0	0.3	0.04	0.05	0.04	58.0
East: Bagdad Street														
4	L2	23	0.0	23	0.0	0.446	11.6	LOS A	0.8	5.5	0.70	1.08	1.00	42.9
6	R2	181	0.0	181	0.0	0.446	17.1	LOS B	0.8	5.5	0.70	1.08	1.00	45.0
Approach		204	0.0	204	0.0	0.446	16.5	LOS B	0.8	5.5	0.70	1.08	1.00	44.8
North: Auburn Road														
7	L2	212	0.0	212	0.0	0.306	5.6	LOS A	0.0	0.0	0.00	0.21	0.00	51.2
8	T1	374	0.0	374	0.0	0.306	0.0	LOS A	0.0	0.0	0.00	0.21	0.00	52.7
Approach		585	0.0	585	0.0	0.306	2.0	NA	0.0	0.0	0.00	0.21	0.00	52.2
All Vehicles		1143	0.0	1143	0.0	0.446	4.1	NA	0.8	5.5	0.14	0.32	0.19	49.6

Post-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV [ ] %	ARRIVAL FLOWS [Total veh/h]	HV [ ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	[Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Auburn Road														
2	T1	327	0.0	327	0.0	0.169	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	34	0.0	34	0.0	0.035	6.2	LOS A	0.1	0.4	0.54	0.68	0.54	22.2
Approach		361	0.0	361	0.0	0.169	0.6	NA	0.1	0.4	0.05	0.06	0.05	57.5
East: Bagdad Street														
4	L2	25	0.0	25	0.0	0.469	11.8	LOS A	0.8	5.9	0.71	1.09	1.04	42.7
6	R2	188	0.0	188	0.0	0.469	17.5	LOS B	0.8	5.9	0.71	1.09	1.04	44.8
Approach		214	0.0	214	0.0	0.469	16.8	LOS B	0.8	5.9	0.71	1.09	1.04	44.5
North: Auburn Road														
7	L2	214	0.0	214	0.0	0.307	5.6	LOS A	0.0	0.0	0.00	0.22	0.00	51.1
8	T1	374	0.0	374	0.0	0.307	0.0	LOS A	0.0	0.0	0.00	0.22	0.00	52.7
Approach		587	0.0	587	0.0	0.307	2.0	NA	0.0	0.0	0.00	0.22	0.00	52.2
All Vehicles		1162	0.0	1162	0.0	0.469	4.3	NA	0.8	5.9	0.15	0.33	0.21	49.3

MOVEMENT SUMMARY – 2.45pm – 3.45pm – Base Year 2023 – Cooper Road / Moriarty Way

Pre-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Cooper Road														
2	T1	86	0.0	86	0.0	0.070	4.8	LOS A	0.1	1.0	0.03	0.54	0.03	41.5
3	R2	20	0.0	20	0.0	0.070	7.7	LOS A	0.1	1.0	0.03	0.54	0.03	40.2
Approach		106	0.0	106	0.0	0.070	5.4	LOS A	0.1	1.0	0.03	0.54	0.03	41.2
East: Moriarty Way														
4	L2	23	0.0	23	0.0	0.024	5.1	LOS A	0.0	0.3	0.25	0.54	0.25	40.8
6	R2	3	0.0	3	0.0	0.024	8.0	LOS A	0.0	0.3	0.25	0.54	0.25	29.5
Approach		26	0.0	26	0.0	0.024	5.5	LOS A	0.0	0.3	0.25	0.54	0.25	40.1
North: Cooper Road														
7	L2	54	0.0	54	0.0	0.111	5.0	LOS A	0.2	1.5	0.10	0.50	0.10	46.5
8	T1	97	0.0	97	0.0	0.111	4.9	LOS A	0.2	1.5	0.10	0.50	0.10	53.4
Approach		151	0.0	151	0.0	0.111	4.9	LOS A	0.2	1.5	0.10	0.50	0.10	50.9
All Vehicles		283	0.0	283	0.0	0.111	5.1	LOS A	0.2	1.5	0.09	0.52	0.09	48.6

Post-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Cooper Road														
2	T1	94	0.0	94	0.0	0.076	4.8	LOS A	0.2	1.1	0.04	0.53	0.04	41.5
3	R2	20	0.0	20	0.0	0.076	7.7	LOS A	0.2	1.1	0.04	0.53	0.04	40.2
Approach		114	0.0	114	0.0	0.076	5.3	LOS A	0.2	1.1	0.04	0.53	0.04	41.2
East: Moriarty Way														
4	L2	23	0.0	23	0.0	0.025	5.2	LOS A	0.0	0.3	0.26	0.55	0.26	40.6
6	R2	4	0.0	4	0.0	0.025	8.0	LOS A	0.0	0.3	0.26	0.55	0.26	29.2
Approach		27	0.0	27	0.0	0.025	5.6	LOS A	0.0	0.3	0.26	0.55	0.26	39.7
North: Cooper Road														
7	L2	55	0.0	55	0.0	0.117	5.0	LOS A	0.2	1.6	0.10	0.50	0.10	46.5
8	T1	104	0.0	104	0.0	0.117	4.9	LOS A	0.2	1.6	0.10	0.50	0.10	53.4
Approach		159	0.0	159	0.0	0.117	4.9	LOS A	0.2	1.6	0.10	0.50	0.10	51.0
All Vehicles		300	0.0	300	0.0	0.117	5.1	LOS A	0.2	1.6	0.09	0.51	0.09	48.6

MOVEMENT SUMMARY – 7.30am – 8.30am – Future Year 2033 – Bagdad Street / Auburn Road

Pre-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Auburn Road														
2	T1	644	0.0	644	0.0	0.333	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	32	0.0	32	0.0	0.029	5.6	LOS A	0.0	0.3	0.49	0.64	0.49	23.4
Approach		676	0.0	676	0.0	0.333	0.3	NA	0.0	0.3	0.02	0.03	0.02	58.7
East: Bagdad Street														
4	L2	16	0.0	16	0.0	1.292	284.5	LOS F[1]	24.5	171.3	1.00	4.55	14.80	7.5
6	R2	361	0.0	361	0.0	1.292	295.7	LOS F[1]	24.5	171.3	1.00	4.55	14.80	8.7
Approach		378	0.0	378	0.0	1.292	295.2	LOS F[1]	24.5	171.3	1.00	4.55	14.80	8.7
North: Auburn Road														
7	L2	141	0.0	141	0.0	0.260	5.6	LOS A	0.0	0.0	0.00	0.17	0.00	52.9
8	T1	359	0.0	359	0.0	0.260	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	54.1
Approach		500	0.0	500	0.0	0.260	1.6	NA	0.0	0.0	0.00	0.17	0.00	53.8
All Vehicles		1554	0.0	1554	0.0	1.292	72.4	NA	24.5	171.3	0.25	1.17	3.61	14.3

Post-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Auburn Road														
2	T1	644	0.0	644	0.0	0.332	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	42	0.0	42	0.0	0.039	5.7	LOS A	0.1	0.4	0.50	0.65	0.50	23.4
Approach		686	0.0	686	0.0	0.332	0.4	NA	0.1	0.4	0.03	0.04	0.03	58.4
East: Bagdad Street														
4	L2	19	0.0	19	0.0	1.350	334.7	LOS F[1]	28.4	198.5	1.00	4.96	16.36	6.6
6	R2	371	0.0	371	0.0	1.350	345.6	LOS F[1]	28.4	198.5	1.00	4.96	16.36	7.6
Approach		390	0.0	390	0.0	1.350	345.1	LOS F[1]	28.4	198.5	1.00	4.96	16.36	7.6
North: Auburn Road														
7	L2	144	0.0	144	0.0	0.262	5.6	LOS A	0.0	0.0	0.00	0.17	0.00	52.8
8	T1	359	0.0	359	0.0	0.262	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	54.1
Approach		503	0.0	503	0.0	0.262	1.6	NA	0.0	0.0	0.00	0.17	0.00	53.8
All Vehicles		1579	0.0	1579	0.0	1.350	86.0	NA	28.4	198.5	0.26	1.30	4.06	12.6

MOVEMENT SUMMARY – 7.30am – 8.30am – Future Year 2033 – Cooper Road / Moriarty Way

Pre-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV [ ] %	ARRIVAL FLOWS [Total veh/h]	HV [ ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	[Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Cooper Road														
2	T1	153	0.0	153	0.0	0.161	5.2	LOS A	0.4	2.5	0.23	0.52	0.23	39.5
3	R2	40	0.0	40	0.0	0.161	8.1	LOS A	0.4	2.5	0.23	0.52	0.23	38.8
Approach		193	0.0	193	0.0	0.161	5.8	LOS A	0.4	2.5	0.23	0.52	0.23	39.3
East: Moriarty Way														
4	L2	38	0.0	38	0.0	0.100	5.5	LOS A	0.2	1.4	0.32	0.61	0.32	38.5
6	R2	67	0.0	67	0.0	0.100	8.3	LOS A	0.2	1.4	0.32	0.61	0.32	26.8
Approach		105	0.0	105	0.0	0.100	7.3	LOS A	0.2	1.4	0.32	0.61	0.32	33.0
North: Cooper Road														
7	L2	44	0.0	44	0.0	0.146	5.1	LOS A	0.3	2.2	0.17	0.49	0.17	46.3
8	T1	141	0.0	141	0.0	0.146	5.0	LOS A	0.3	2.2	0.17	0.49	0.17	53.1
Approach		186	0.0	186	0.0	0.146	5.0	LOS A	0.3	2.2	0.17	0.49	0.17	51.5
All Vehicles		484	0.0	484	0.0	0.161	5.8	LOS A	0.4	2.5	0.23	0.53	0.23	46.5

Post-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV [ ] %	ARRIVAL FLOWS [Total veh/h]	HV [ ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	[Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Cooper Road														
2	T1	163	0.0	163	0.0	0.170	5.2	LOS A	0.4	2.7	0.24	0.52	0.24	39.5
3	R2	40	0.0	40	0.0	0.170	8.1	LOS A	0.4	2.7	0.24	0.52	0.24	38.8
Approach		203	0.0	203	0.0	0.170	5.8	LOS A	0.4	2.7	0.24	0.52	0.24	39.3
East: Moriarty Way														
4	L2	38	0.0	38	0.0	0.104	5.5	LOS A	0.2	1.4	0.33	0.62	0.33	38.5
6	R2	69	0.0	69	0.0	0.104	8.4	LOS A	0.2	1.4	0.33	0.62	0.33	26.7
Approach		107	0.0	107	0.0	0.104	7.4	LOS A	0.2	1.4	0.33	0.62	0.33	32.8
North: Cooper Road														
7	L2	45	0.0	45	0.0	0.154	5.1	LOS A	0.3	2.3	0.17	0.49	0.17	46.3
8	T1	152	0.0	152	0.0	0.154	5.0	LOS A	0.3	2.3	0.17	0.49	0.17	53.1
Approach		197	0.0	197	0.0	0.154	5.0	LOS A	0.3	2.3	0.17	0.49	0.17	51.5
All Vehicles		508	0.0	508	0.0	0.170	5.8	LOS A	0.4	2.7	0.23	0.53	0.23	46.5

MOVEMENT SUMMARY – 2.45pm – 3.45pm – Future Year 2033 – Bagdad Street / Auburn Road

Pre-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Auburn Road														
2	T1	393	0.0	393	0.0	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	32	0.0	32	0.0	0.039	7.0	LOS A	0.1	0.4	0.58	0.73	0.58	20.4
Approach		424	0.0	424	0.0	0.203	0.5	NA	0.1	0.4	0.04	0.05	0.04	57.7
East: Bagdad Street														
4	L2	28	0.0	28	0.0	0.678	16.2	LOS B	1.5	10.2	0.85	1.21	1.62	38.5
6	R2	217	0.0	217	0.0	0.678	24.8	LOS B	1.5	10.2	0.85	1.21	1.62	40.8
Approach		245	0.0	245	0.0	0.678	23.8	LOS B	1.5	10.2	0.85	1.21	1.62	40.6
North: Auburn Road														
7	L2	254	0.0	254	0.0	0.367	5.6	LOS A	0.0	0.0	0.00	0.21	0.00	51.2
8	T1	448	0.0	448	0.0	0.367	0.0	LOS A	0.0	0.0	0.00	0.21	0.00	52.7
Approach		702	0.0	702	0.0	0.367	2.0	NA	0.0	0.0	0.00	0.21	0.00	52.2
All Vehicles		1372	0.0	1372	0.0	0.678	5.5	NA	1.5	10.2	0.16	0.34	0.30	47.2

Post-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Auburn Road														
2	T1	393	0.0	393	0.0	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	40	0.0	40	0.0	0.050	7.1	LOS A	0.1	0.5	0.59	0.75	0.59	20.3
Approach		433	0.0	433	0.0	0.203	0.7	NA	0.1	0.5	0.05	0.07	0.05	57.1
East: Bagdad Street														
4	L2	30	0.0	30	0.0	0.716	17.3	LOS B	1.6	11.4	0.86	1.25	1.77	37.7
6	R2	226	0.0	226	0.0	0.716	26.2	LOS B	1.6	11.4	0.86	1.25	1.77	40.1
Approach		256	0.0	256	0.0	0.716	25.1	LOS B	1.6	11.4	0.86	1.25	1.77	39.8
North: Auburn Road														
7	L2	256	0.0	256	0.0	0.368	5.6	LOS A	0.0	0.0	0.00	0.22	0.00	51.1
8	T1	448	0.0	448	0.0	0.368	0.0	LOS A	0.0	0.0	0.00	0.22	0.00	52.7
Approach		705	0.0	705	0.0	0.368	2.1	NA	0.0	0.0	0.00	0.22	0.00	52.2
All Vehicles		1395	0.0	1395	0.0	0.716	5.9	NA	1.6	11.4	0.18	0.36	0.34	46.5

MOVEMENT SUMMARY – 2.45pm – 3.45pm – Future Year 2033 – Cooper Road / Moriarty Way

Pre-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Cooper Road														
2	T1	104	0.0	104	0.0	0.084	4.8	LOS A	0.2	1.2	0.04	0.53	0.04	41.5
3	R2	24	0.0	24	0.0	0.084	7.7	LOS A	0.2	1.2	0.04	0.53	0.04	40.1
Approach		128	0.0	128	0.0	0.084	5.4	LOS A	0.2	1.2	0.04	0.53	0.04	41.1
East: Moriarty Way														
4	L2	28	0.0	28	0.0	0.029	5.3	LOS A	0.1	0.4	0.27	0.55	0.27	40.6
6	R2	4	0.0	4	0.0	0.029	8.1	LOS A	0.1	0.4	0.27	0.55	0.27	29.2
Approach		32	0.0	32	0.0	0.029	5.6	LOS A	0.1	0.4	0.27	0.55	0.27	40.0
North: Cooper Road														
7	L2	64	0.0	64	0.0	0.134	5.0	LOS A	0.3	1.9	0.11	0.50	0.11	46.5
8	T1	116	0.0	116	0.0	0.134	4.9	LOS A	0.3	1.9	0.11	0.50	0.11	53.3
Approach		181	0.0	181	0.0	0.134	5.0	LOS A	0.3	1.9	0.11	0.50	0.11	50.9
All Vehicles		340	0.0	340	0.0	0.134	5.2	LOS A	0.3	1.9	0.10	0.52	0.10	48.5

Post-Development

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h]	HV] %	ARRIVAL FLOWS [Total veh/h]	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh]	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Cooper Road														
2	T1	112	0.0	112	0.0	0.091	4.8	LOS A	0.2	1.3	0.04	0.53	0.04	41.5
3	R2	24	0.0	24	0.0	0.091	7.7	LOS A	0.2	1.3	0.04	0.53	0.04	40.1
Approach		136	0.0	136	0.0	0.091	5.3	LOS A	0.2	1.3	0.04	0.53	0.04	41.1
East: Moriarty Way														
4	L2	28	0.0	28	0.0	0.031	5.3	LOS A	0.1	0.4	0.28	0.55	0.28	40.4
6	R2	5	0.0	5	0.0	0.031	8.1	LOS A	0.1	0.4	0.28	0.55	0.28	29.0
Approach		33	0.0	33	0.0	0.031	5.7	LOS A	0.1	0.4	0.28	0.55	0.28	39.5
North: Cooper Road														
7	L2	66	0.0	66	0.0	0.141	5.0	LOS A	0.3	2.0	0.11	0.50	0.11	46.5
8	T1	125	0.0	125	0.0	0.141	4.9	LOS A	0.3	2.0	0.11	0.50	0.11	53.3
Approach		191	0.0	191	0.0	0.141	5.0	LOS A	0.3	2.0	0.11	0.50	0.11	51.0
All Vehicles		360	0.0	360	0.0	0.141	5.2	LOS A	0.3	2.0	0.10	0.51	0.10	48.6