



Civil – Traffic – Stormwater – Waste – Access – Project Management

## Traffic, Parking and Access Report

Planning Proposal

Seeking to change the planning controls/land use relating to

### 45 Hollinsworth Road, Marsden Park



Prepared For: Ahmadiyya Muslim Association, Australia  
Head Office, Marsden Park

November 2019

Final Report V8

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## 1 Background - Introduction

MultiPro Consultants (MPC) Pty Ltd is undertaking the Traffic, Parking and Access Assessment study for the Ahmadiyya Muslim Association, Australia to amend *Blacktown Local Environmental Plan 2015* (the Blacktown LEP) to facilitate an amendment to *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (the Growth Centres SEPP) to rezone land at 45 Hollinsworth Road, Marsden Park

The Marsden Park Industrial (Employment) Precinct (MPIP) is a major new employment precinct which is proposed to be developed over a total land area, in various ownerships, of approximately 550 hectares, generally on the western side of Bells Creek, to the north and west of the locality known as Colebee – Stonecutters Ridge.

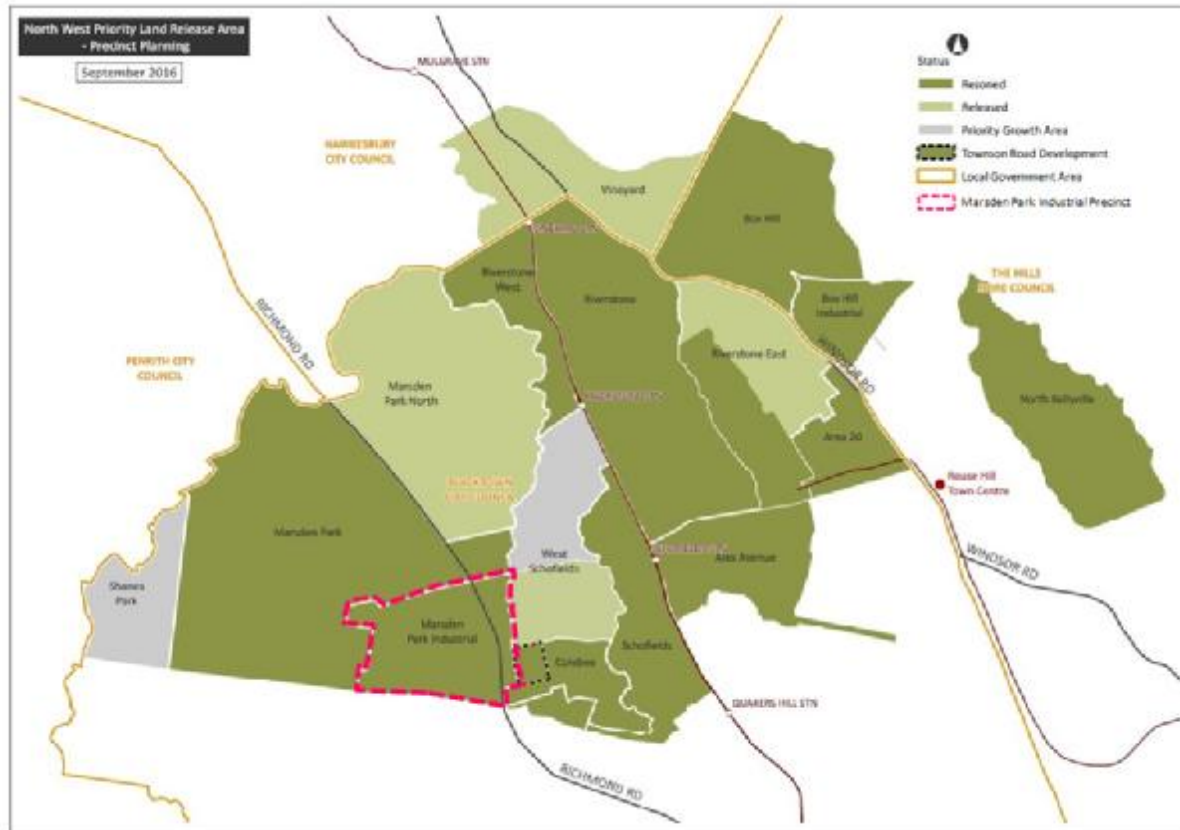
The majority of the land in the precinct lies on the western side of Richmond Road and is bounded to the south by the future “Castlereagh Motorway” road reservation. There is currently no formal timeframe for the eventual future construction of this road and its need and timing is conceptually more related to the development of areas further to the west, eg in Penrith rather than in Blacktown LGA.

The State Government started planning for the Growth Centres in 2003 to streamline the supply of Greenfield land for urban development in Sydney. The strategic vision for the Growth Centre is set out in the North West Structure Plan, which was adopted by the NSW Government in 2006.

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 is the environmental planning instrument which sets controls for the North West and South West Growth Centres of Sydney.

The Marsden Park Industrial (Employment) Precinct is a *growth centre precinct* referred to as North West Growth Centre.

See Figure 1.



*Figure 1 –Marsden Park Industrial (Employment) Precinct*

At the time when the NSW Government rezoned the Marsden Park Industrial Precinct, the Ahmadiyya Muslim Association was not aware of the proposed zoning or future permissible development on its site at 45 Hollinsworth Road, Marsden Park. As a result this has disadvantaged the non-profit organisation in developing its land for its community for the future.

### The Community (Ahmadiyya Muslim Association)

The Ahmadiyya Muslim Association, Australia's headquarters is located at 45 Hollinsworth Road, Marsden Park (off Richmond Road). The Ahmadiyya Movement in Islam is an organization that promotes spiritual and moral values among its members. Its motto is 'Love for all hatred for none'. The Association is spread throughout the world, with branches in over 200 countries in Africa, North America, South America, Asia, Australasia, and Europe. At present, its total membership exceeds 200 million worldwide, and the numbers are increasing day by day.

The Ahmadiyya community in Australia was formed in the early part of the year 1980. The land for the mosque at Marsden Park was purchased in 1982. It is a non-commercial, self supporting association that entirely relies on the donations of its members. The Mosque at Lot 1 DP1176437, 45 Hollinsworth Road is the Australian head office of the Association.

Besides its services to help elevate moral and spiritual standards of its members, the community actively participates in humanitarian and community services around the globe. Through a large number of auxiliary organizations and projects, Ahmadiyya Muslim Movement Worldwide has set up a vast network of humanitarian and community programs around the world, particularly in poorer countries of the world and other communities in need. The assistance covers health, education and agricultural institutions and services particularly in African and other developing countries. Offering relief from the natural calamities whenever and wherever they happen globally is another area the worldwide Ahmadiyya community is very proud of.

Also, Australian Ahmadiyya community is actively contributing to community at large. Participations to Clean up Australia Day, National Tree Planting Day and Red Cross Door Knock Campaign are the permanent features of its ongoing contribution.

### The Subject Land

The Associations' property at 45 Hollinsworth Road, Marsden Park Area is primarily zoned B5 (see Figure 2). The area of the property is approximately 114, 200 sq metres (28 acres). Access of the site is via Hollinsworth Road.

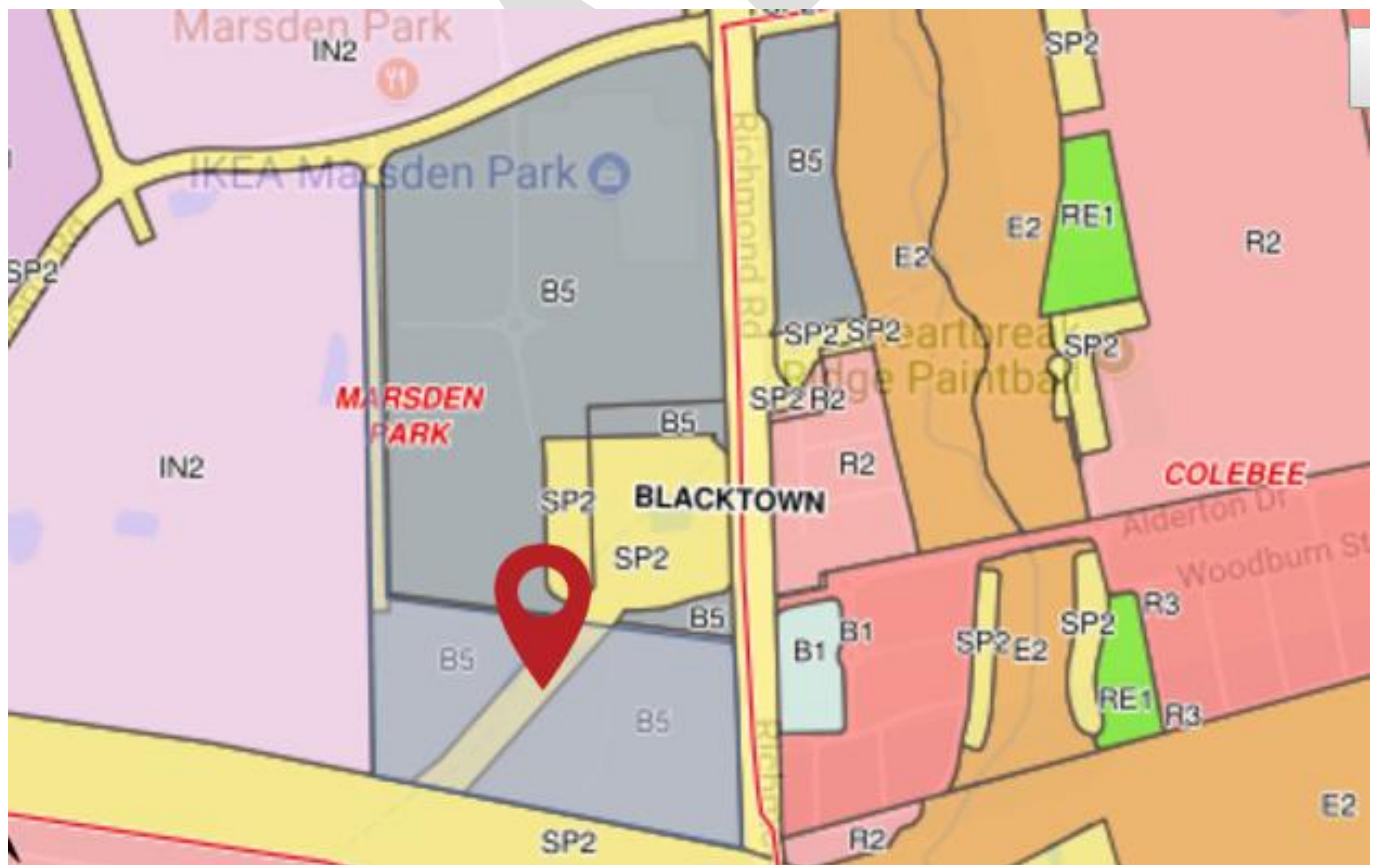


Figure 2 – Land Zoning

## 2 Existing Conditions

Within the site at 45 Hollinsworth Road, an area of approximately 28 acres the following buildings, structures and facilities are present:

- A mosque
- A Community hall
- Missionary's residence
- Storage
- Printing Room
- Rainwater tanks
- Cemetery
- Carpark
- Sports fields

### 2.1 Site

The subject land is located on the western side of Richmond Road, at 45 Hollinsworth Road, Marsden Park. The site has a street frontage of approximately 252 metres in length to Richmond Road and 417 metres in length to Hollinsworth Road.

The subject site is currently occupied by an existing mosque, and served by over 150 car spaces, accessed via Hollinsworth Road. See Figure 3.



Figure 3 Locality Plan

## 3 Master Planning

### 3.1 Marsden Park Industrial (Employment) Precinct

The Marsden Park Industrial (Employment) precinct currently contains mainly low intensity rural and rural industrial land uses, former quarries, some highway related commercial/industrial uses fronting Richmond Road and the caravan park and Mosque on sites near the southern edge of the precinct which are currently accessed via Hollinsworth Road.

The most likely future development of the precinct is now primarily employment/industrial land including significant commercial/business park areas for a future total workforce of up to 10,000 persons, together with a number of smaller areas of residential development (1,100 additional dwellings in total) which are to be mainly located at the northern end of the precinct where they will be close to the future Marsden Park Town Centre.

The initial transport and access investigations was undertaken as part of the precinct master planning by Arup, based on the results of a regional scale (Sydney Wide) NETANAL traffic network model prepared by Glen Varley of Road Delay Solutions Pty Ltd, which incorporated the full development of the precinct, together with all the other development precincts of the North West Growth Centre in the year 2036.

The Marsden Park Industrial (Employment) Precinct is the sixth of sixteen North West Growth Centre Precincts for which detailed precinct master planning was undertaken.

In concept, the Marsden Park Industrial (Employment) precinct is strategically well located with respect to future freight transport access to the M7 Motorway transport corridor and it will form one of three major future North Western Sydney employment centres representing almost one third of the predicted future total employment growth target (+38,000 jobs) which will provide the minimum desirable future target ratio of 60% local jobs vs households for the North West Growth Centre of Sydney (+63,500 dwellings).

When combined with the adjacent future Marsden Park Town Centre development to the north, which is located in the main "Marsden Park" precinct which is not actually part of the current precinct transport planning and master planning investigations, the combined future employment "centre" at Marsden Park will have a significant "critical mass" of related commercial and employment functions which will create a major future focus of public and private transport access routes in the area.

The existing bus service network is essentially limited to a single infrequent local bus route which follows a Crescentous route from Riverstone to Rooty Hill/Mount Druitt (Route 757).



The future prospects for heavy rail access for either passenger or freight transport to and from the Marsden Park area are not promising as the area is remote from the existing heavy rail network and proposals to date to improve heavy rail access to the area, eg the North West Heavy Rail or Metro Line or the various Intermodal Freight Terminal site options in the North West Region of Sydney, have been given low priority by the State and Federal Governments.

### *3.2 Ahmadiyya Muslim Association, Australia Master Planning for 45 Hollinsworth Road, Marsden Park*

A Master Plan has been established to guide the Ahmadiyya Muslim Association, Australia at its head office at 45 Hollinsworth Road, Marsden Park for the next 20 years.

In summary the following proposal is included in the Master Plan (see Figure 4):

- Visitors Accommodation
- Administration Building
- Extension of Baitul Huda Mosque
- Recreational Facility (Basketball courts)
- Educational Facility (Jamia Ahmadiyya Australia (Missionary Training))
- Printing Room
- Mission House Extension
- Future Extension of Hall
- Storage Warehouse
- Sewer & Water Reticulation Upgrades
- School (Masroor Talimul Islam Academy)

The Ahmadiyya Muslim Association developed a Master Plan to make decisions regarding proposals that are required for the community for the next 20 years. This Plan is used by the association to ensure its member and public understand the community's long range plans and proposals for different land use within its property and to encourage plan implementation and funding.



The details of the master plan at 45 Hollinsworth Road, Marsden Park are as follows:

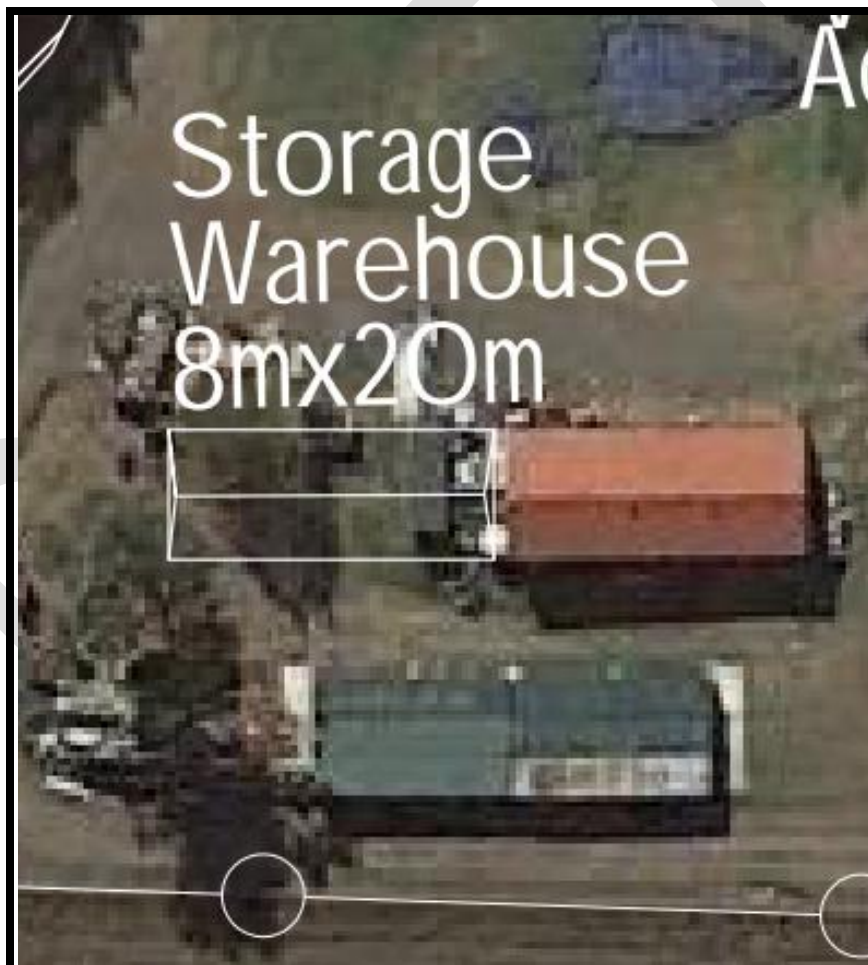
- Storage Warehouse

Description:

There are two sheds and a fenced area for storage. It is proposed that another Storage Warehouse type shed be constructed which can be used for storage of things such as maintenance equipment, books, chairs, tables, cutleries and general goods.

The building will have a footprint of 8m by 20m concrete slab and corrugated walls and high roof with steel beams (ie. Typical warehouse).

Design:





- Print Room (Masroor Printing Room)

Description:

The Shed is a historic building within the site. It has served the Association as the first building on site when the Association was initially established in Australia, it was used for prayers, congregation and accommodation for the missionary.

The aim is to retain this building footprint so that we could use it for the Printing Room and storage.

Design:



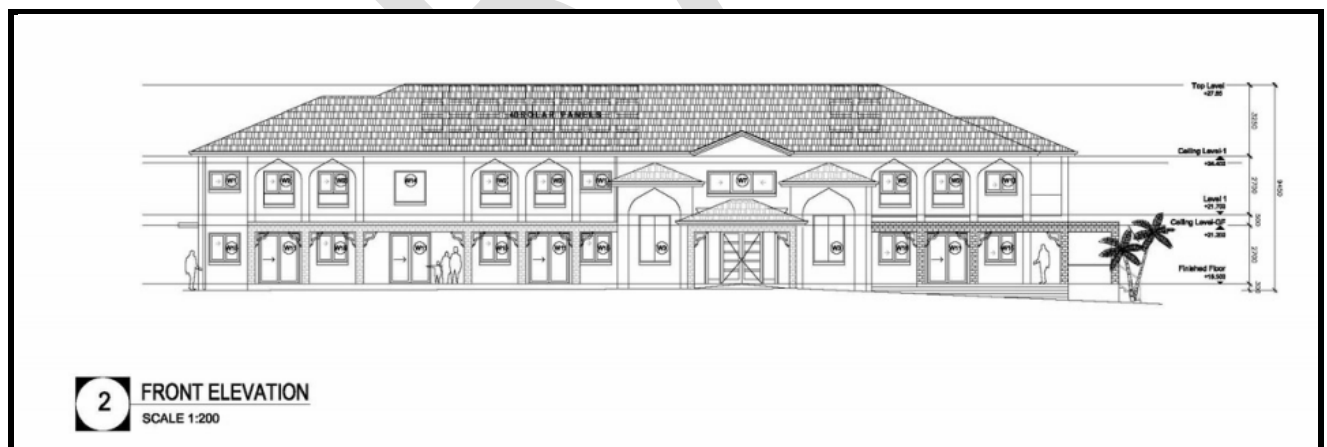
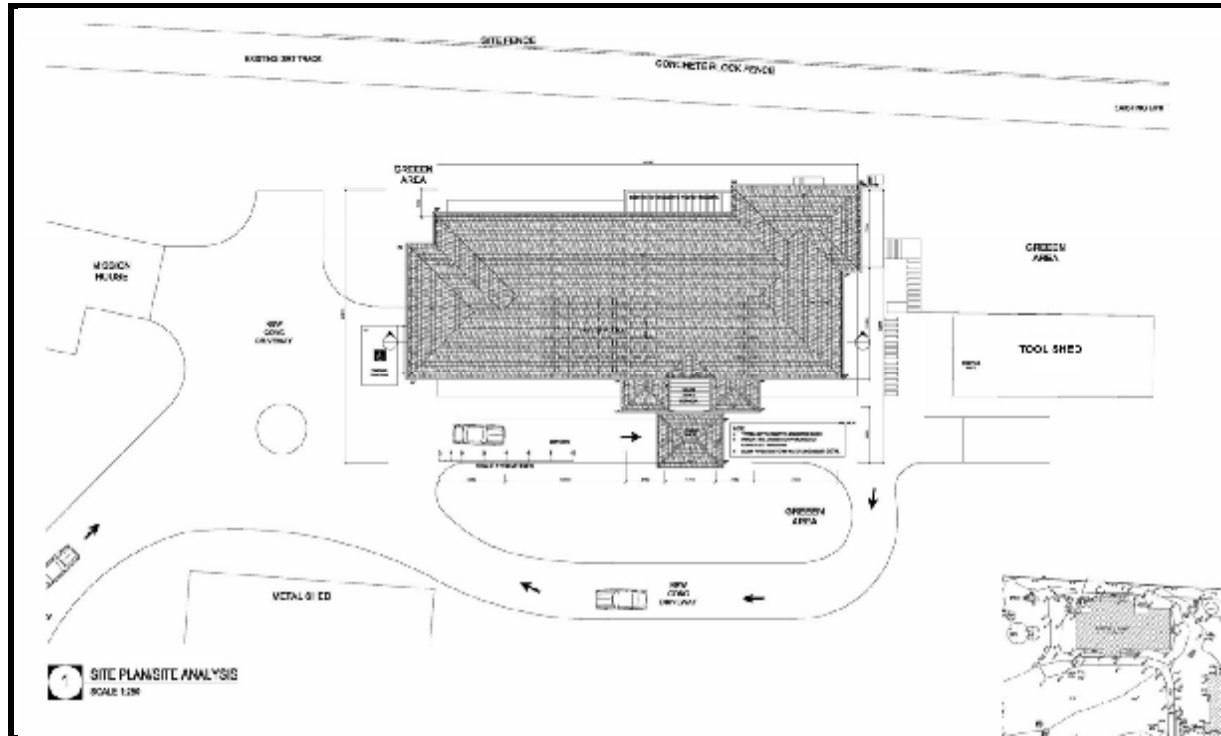
- Tourists & Visitors Accommodation ("Masroor Guest House")

Description:

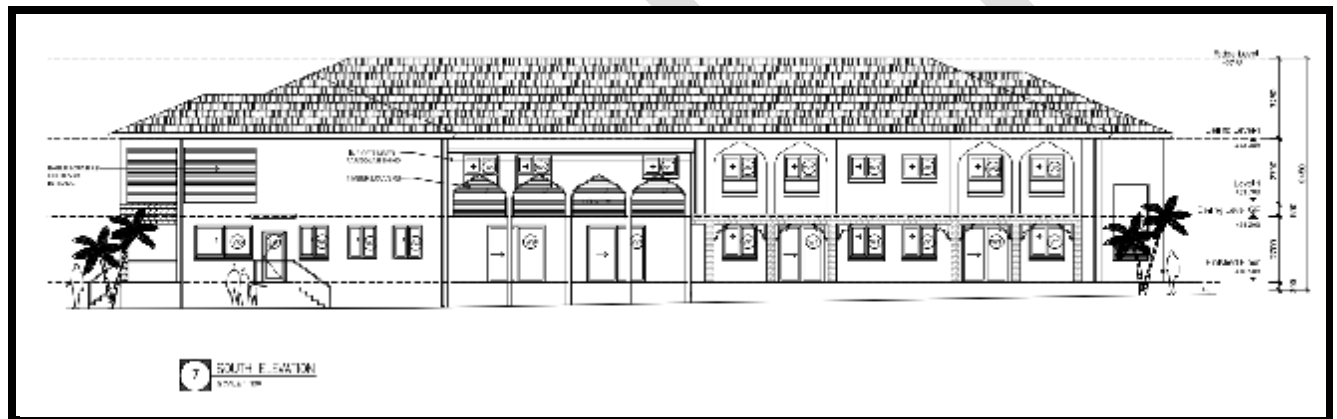
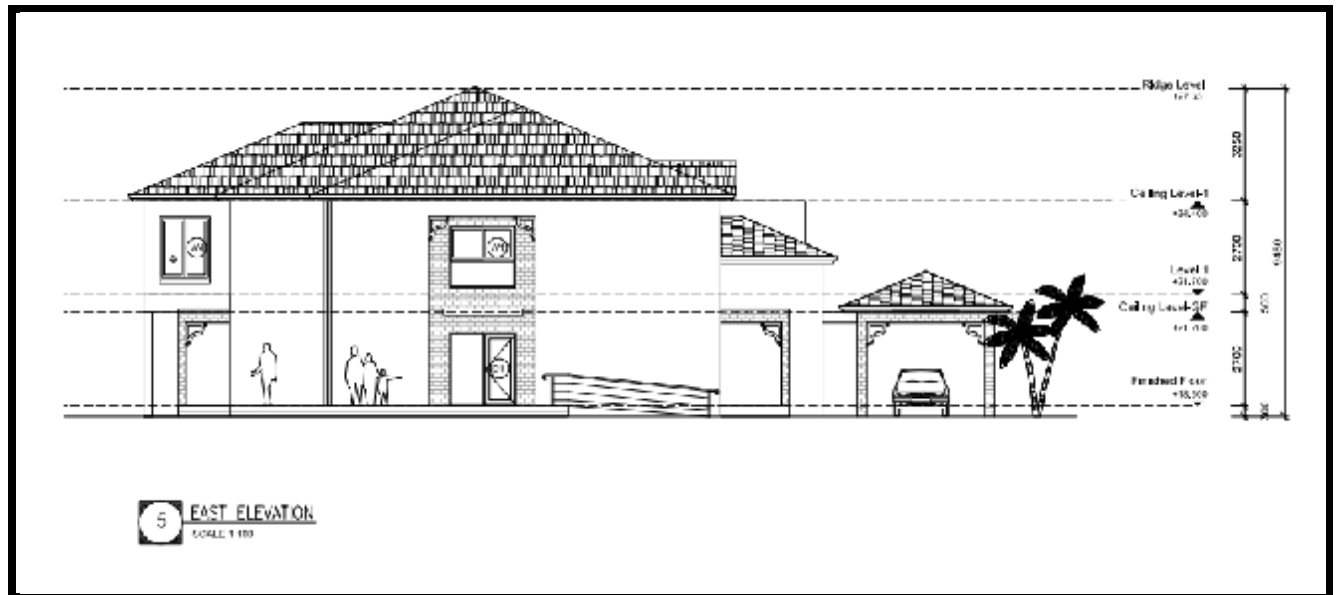
The development is proposed to the South West of the existing structure (Mosque) from Hollinsworth Road. The proposed development is an ancillary (to provide support to the operational activities) to the existing Mosque.

It will be a two storey building with spaces taken into consideration are: access for disabled people, fire exits at the end of corridor, communal dining areas and facility to prepare meals, living areas, suites, meeting hall, sick bay and administrative offices.

Design:







An application has been lodged with Council for a smaller ancillary building which is stage 1 of the above proposal.

See diagrams below.



- Mission House Extension

Description:

The current Mission House (President's residence) is small and its orientation has an offset towards Kaaba. *(Kaaba is a small shrine located near the centre of the Great Mosque in Mecca and considered by Muslims everywhere to be the most sacred spot on Earth. Muslims orient themselves toward this shrine during the five daily prayers)*

It is proposed to extend this building to a second floor, correcting the orientation. This residence could provide additional rooms to house visitors to Sydney.

There would be provision for future missionaries coming to Australia to be housed here. Rather than paying rental in other areas of Sydney, missionaries could utilise the space within this building.

Design:



- Recreational Facility (Dual Basketball Courts)

Description:

As the numbers of youths (Khuddams) and community members are increasing, there is a need for recreational facility within site. It is proposed to construct a dual court next to the area near the carpark in the open space area.

The proposed court would be built to Australian Standards and the court sizes are in accordance with National Basketball Association.

Design:





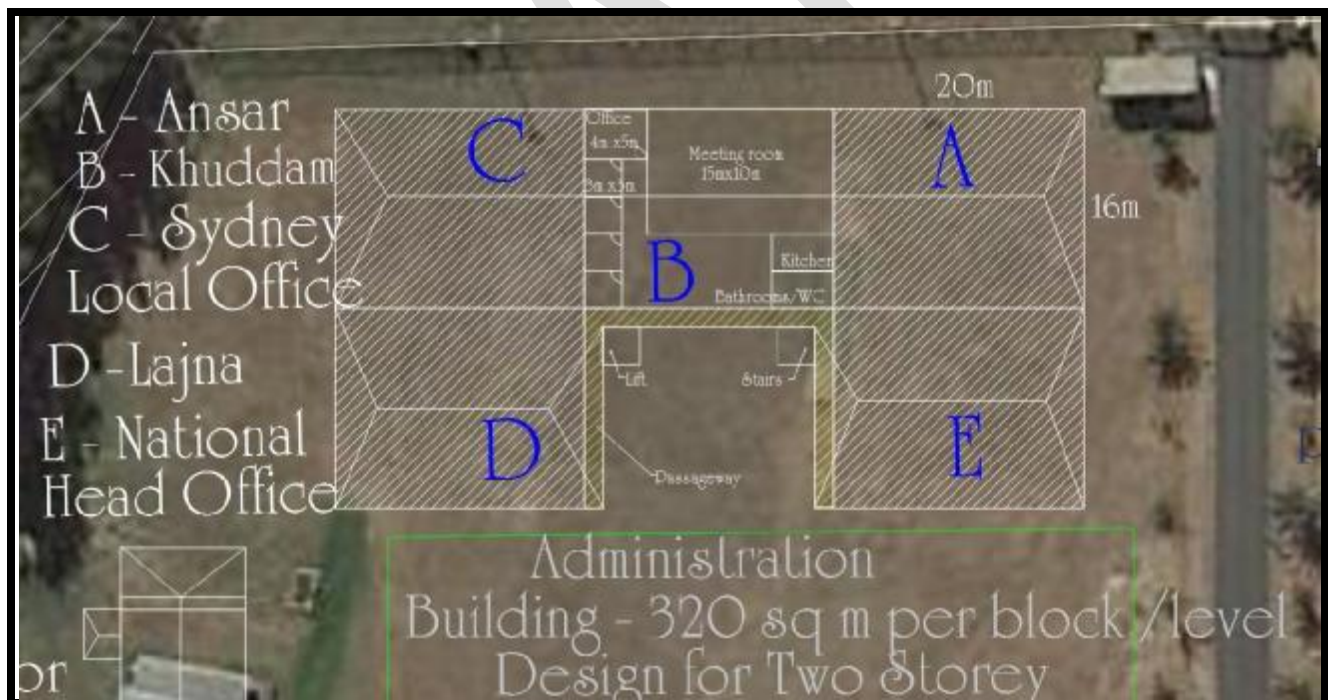
## • Administration Building (Future Two Storey)

### Description:

The proposal is to build an Administration Building to accommodate the demand of the following components:

- ✓ **Ansarullah** (Ansarullah is an auxiliary organization of the Ahmadiyya Muslim Community for men above forty years of age.)
- ✓ **Khuddam** (It is the young men's branch of the community, particularly for those between the ages of 15 and 40.)
- ✓ **Lajna** (It is the women's auxiliary organization of the Ahmadiyya Muslim Community)
- ✓ **National Head Offices**
- ✓ **Sydney Local Offices.**

The main building will have 5 (Five) components for each of the above. One component (ie. building block) will have offices, meeting rooms, storage, etc. The building is proposed as single level with each block having an area of 320 square metres per level.





## Administration

Building - 320 sq m per block /level



- A - Ansar
- B - Khuddam
- C - Syd. Offices
- D - Lajna
- E - NIQA

Design for Two Storey

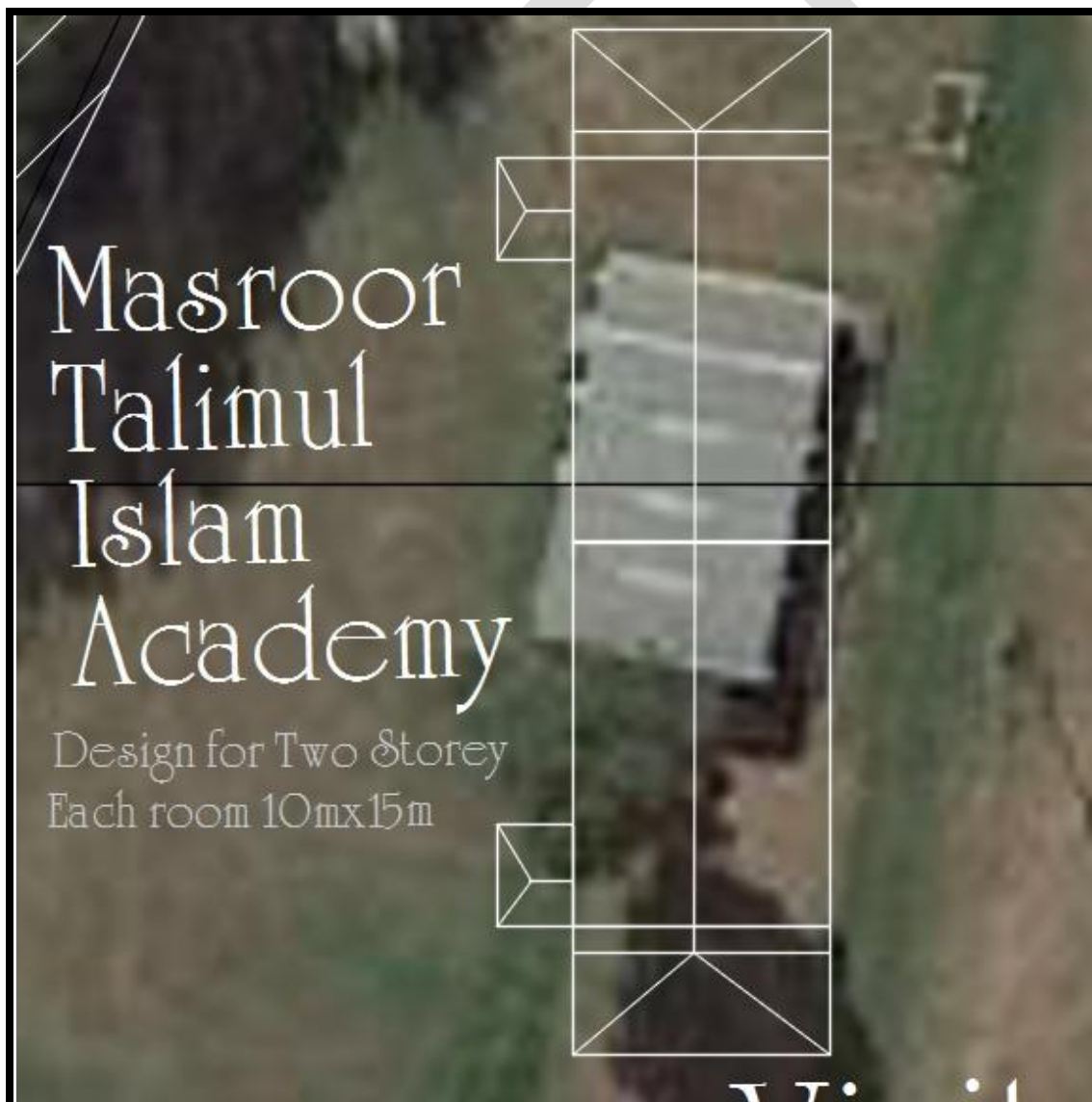
- Education Establishment (Masroor Talimul Islam Academy & Jamia Ahmadiyya Australia)

**Description:**

This facility will provide classrooms for Islamic and general education for our youths and members of the community. As the Association is growing, we require rooms and space for educational (Talimul) purposes.

The proposed facility will include classrooms (2 on the ground floor and 2 on the first level), offices and toilets.

**Design:**



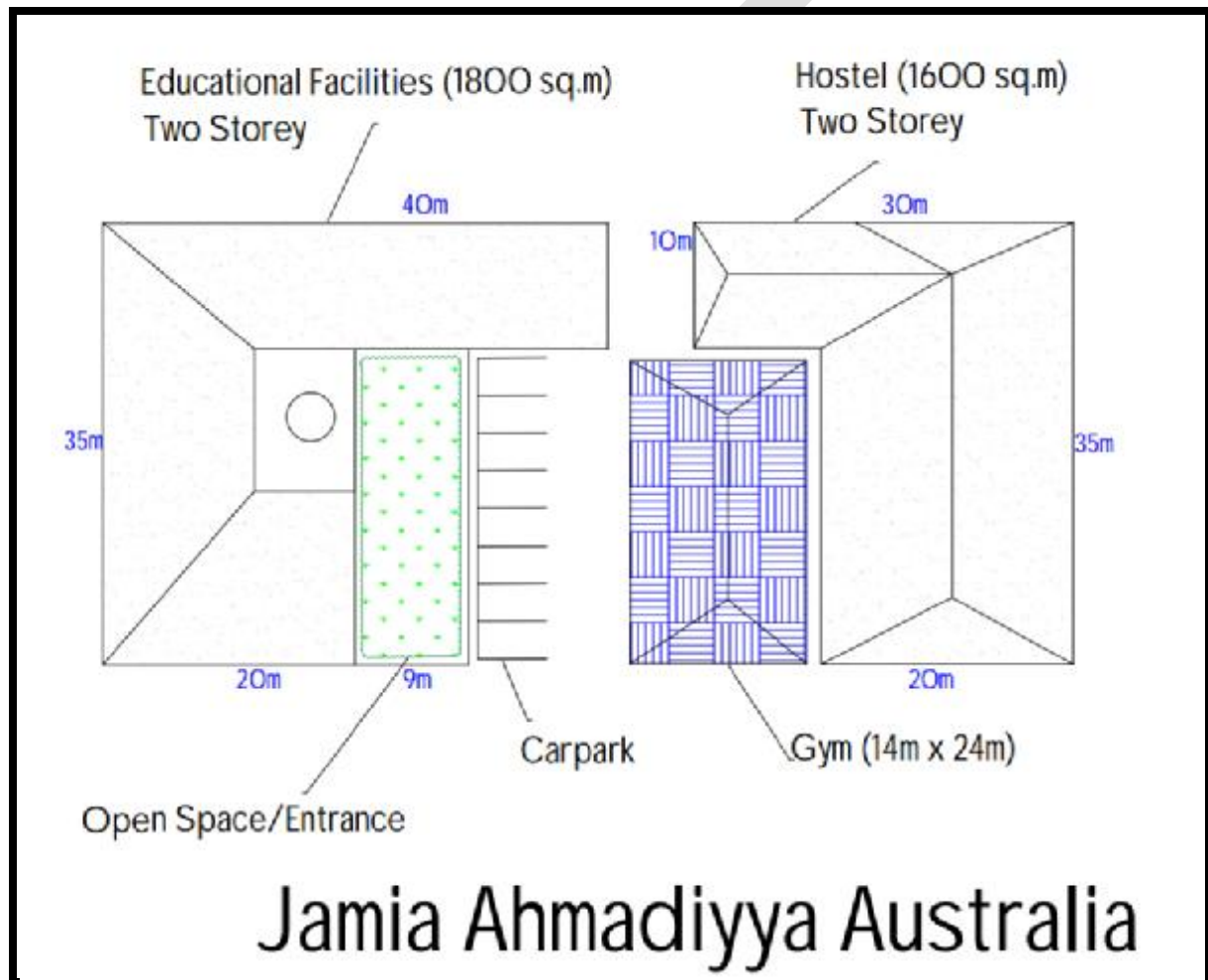
### Description:

This Master Plan includes the provision of a Jamia (*Jamia is the Arabic word for gathering. It can also refer to more generally, a small university or education institute*) which will have two components:

- ✓ Educational facility, and
- ✓ Hostel / recreational facility

This building will be two storeys and will include separate car parking spaces.

### Design:



- Extension of Baitul Huda Mosque

### Description:

The existing building or mosque on site is two storey with prayer halls on both floors and includes Administration offices.

As the community is increasing the space is confined and on most occasions and events special arrangements are made elsewhere for overflows of members.

*Phase 1 – Extension on the west of the existing building*

The proposed extension area is approximately 764 square metres and will have similar building material to the existing mosque.

*Phase 2 – Extension on the east (towards Richmond Road) of the existing building*

The proposed extension area is approximately 671 square metres and will have similar building material to the existing mosque.

Design:



- Future Extension of Khilafat Hall (Community Hall)

**Description:**

There is an existing Community hall within this site know as the “Khilafat Hall”. The Khilafat Hall was built with pre-cast concrete walls. As the community is increasing the requirement for function area need to be facilitated for the future use.

The Hall can be extended in 10m components up to 3 sections.

**Design:**

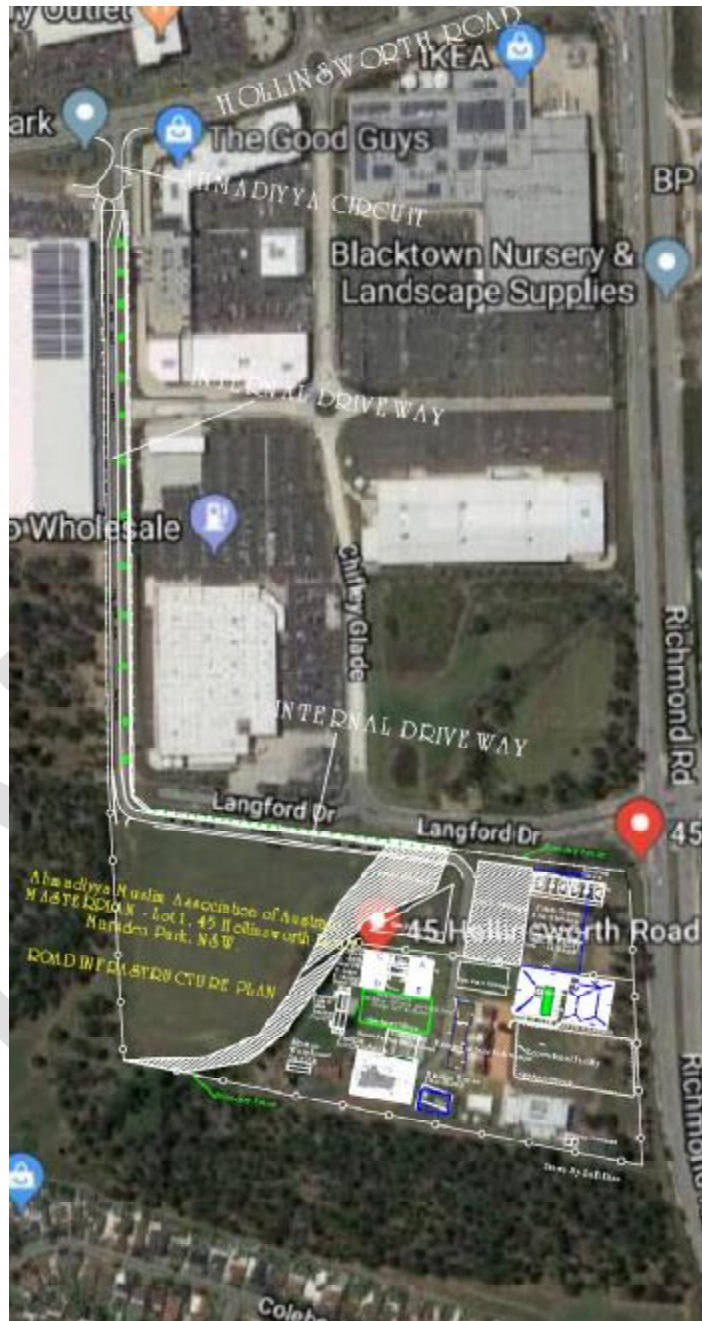




- Future Infrastructure

Description:

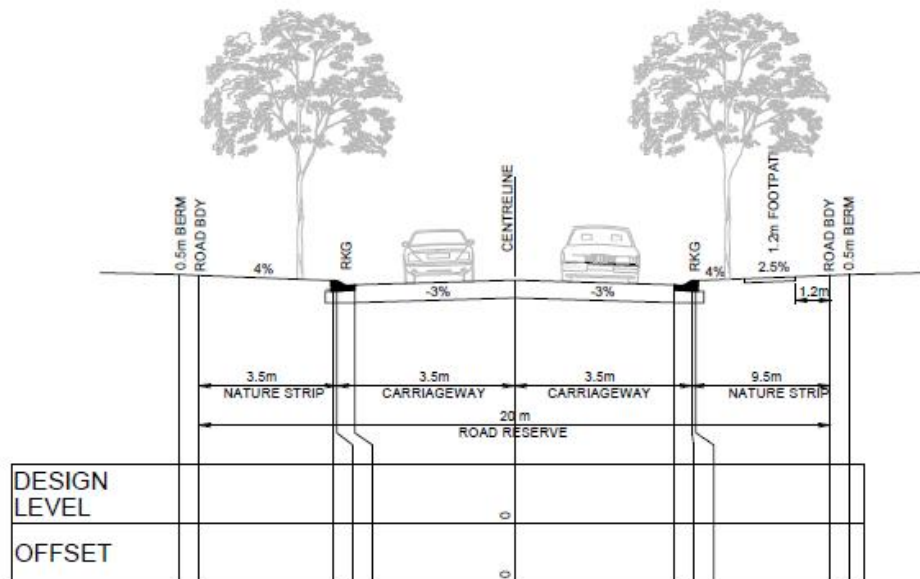
Internal infrastructure will include the driveway, sewer upgrade, water main upgrade and the carpark.



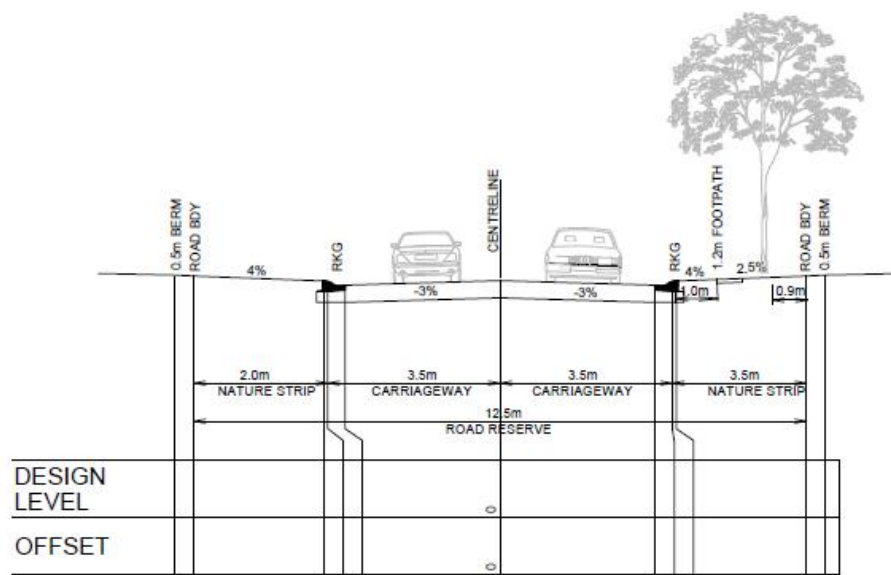








TYPICAL CROSS SECTION A - INTERNAL DRIVEWAY  
SCALE - N.T.S



TYPICAL CROSS SECTION B - INTERNAL DRIVEWAY  
SCALE - N.T.S





## 4 Existing Road Hierarchy and Traffic Volumes

The Existing Road Network and Hierarchy in this report are illustrated by the attached extract from the NSW Government Planning & Infrastructure *Marsden Park Industrial Precinct Indicative Layout Plan* in Figure 5.

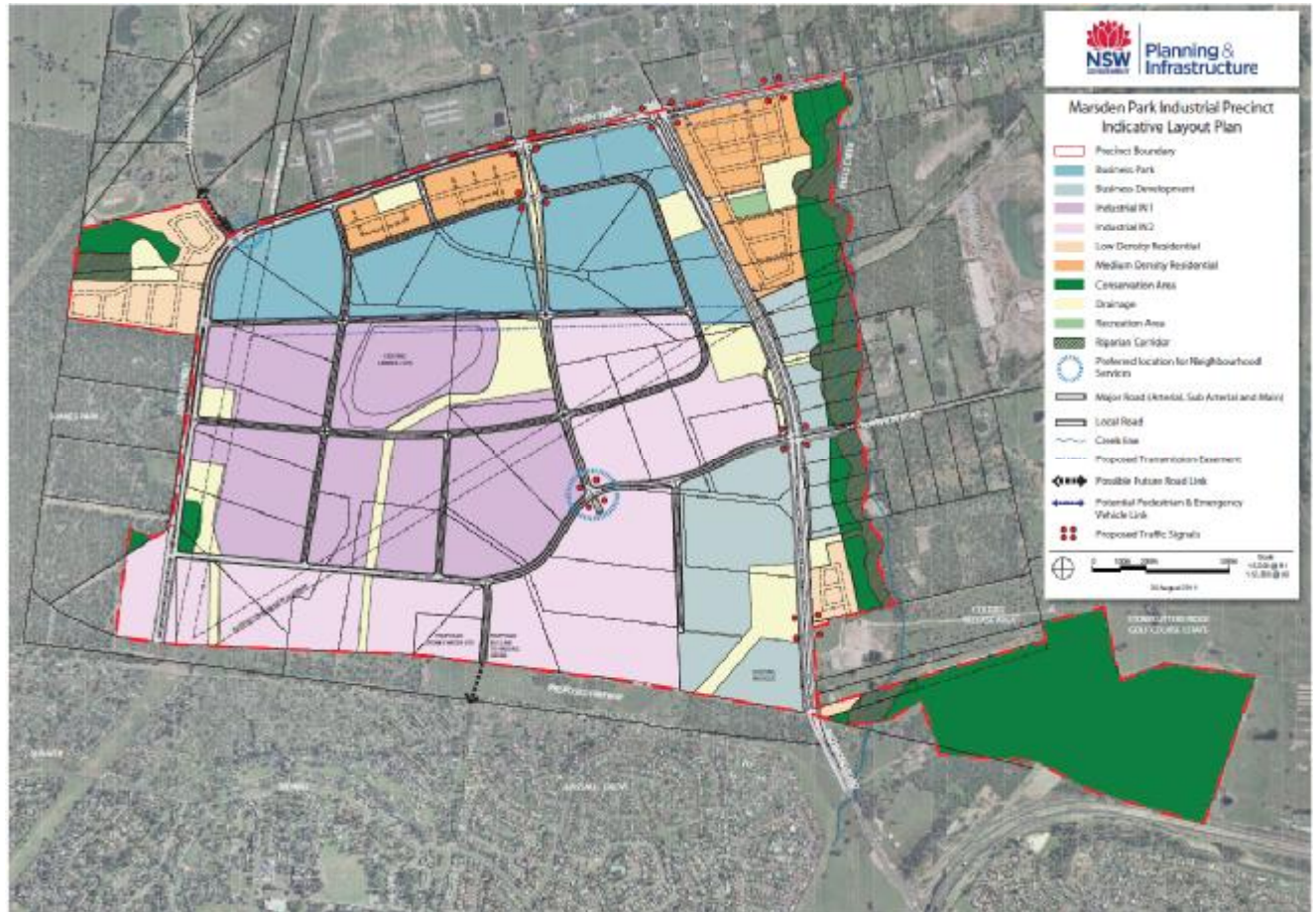


Figure 5 Marsden Park Industrial Precinct Indicative Layout Plan

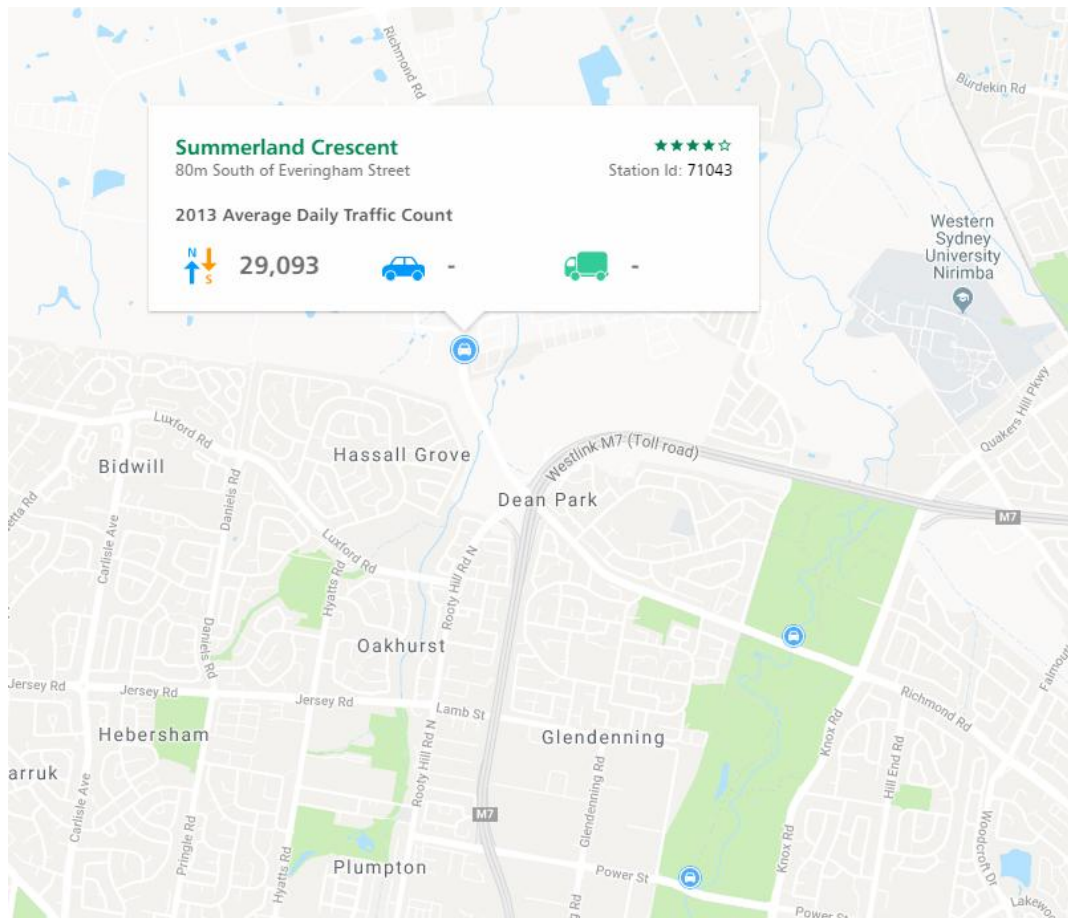
The existing major arterial road access to the area is by Richmond Road, which connects with the M7 Motorway and Rooty Hill Road North, approximately 1 kilometre south east of the southern boundary of the MPIP area.

Richmond Road is a two lane road which has historically carried daily traffic volumes in the range of 20,000 to 22,000 vehicles per day over most of the past ten years but this daily traffic usage has recently increased to approximately 25,000 vehicles per day north of the M7, following the opening of the M7 Motorway.

See Figures 6 and 7.







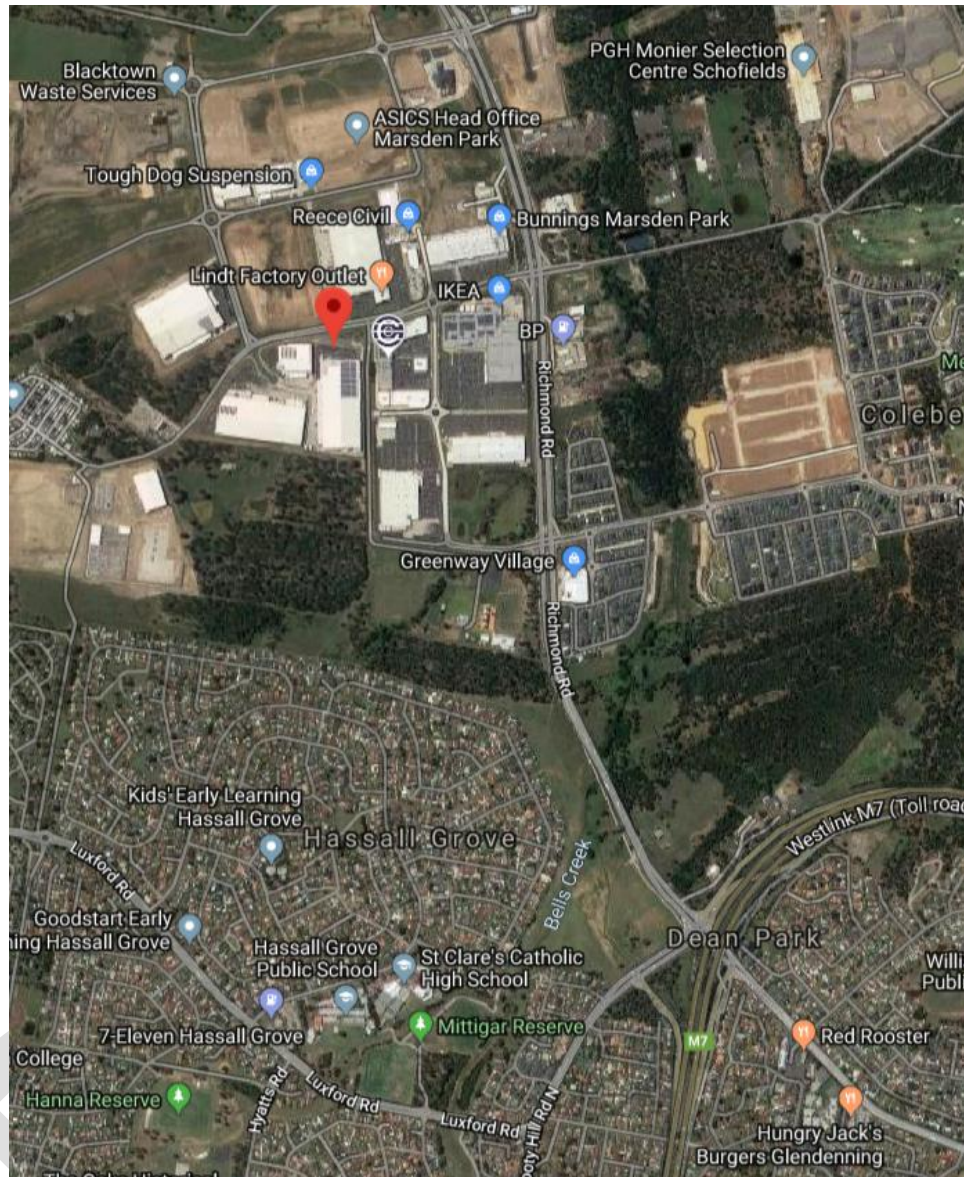
*Figure 7 Traffic Volume on Richmond Road, Marsden Park*

The RTA is currently upgrading the section of Richmond Road from the M7 Motorway/Rooty Hill Road North intersection to Grange Avenue at Marsden Park to four lanes, within the relatively short term future eg within the next five years and later to six lanes as part of the ultimate future traffic development scenario for the area.

The other relevant existing roads in the MPIP area are all local roads currently, ie South Street and Hollinsworth Road on the western side of Richmond Road and South Street and Townson Road on the eastern side of Richmond Road. These roads currently provide separate (non-interconnected) access to a range of existing rural sites in either the northern or the southern parts of the precinct.

See Figure 8.





*Figure 8 Road Network Map around the Proposed Site*

## Road Hierarchy

The classification of the road hierarchy in accordance with the Roads and Maritime Services (RMS) road hierarchy classifications in the vicinity of the 45 Hollinsworth Road are as follows:

- Richmond Road – Classified as Major Arterial Road (State Road) and provides the key north-south road link in the area, linking Blacktown and Bligh Park. Richmond Road has been upgraded from two lanes to four lanes between the M7 Motorway and Elara Boulevard. Roads and Maritime Services is proposing to continue the Richmond Road upgrade from Elara Boulevard to Heritage Road. The upgrade would provide safer and improved access to fast growing residential developments in the Marsden Park precinct and future commercial and residential developments in Marsden Park North precinct. The existing major arterial road

access to the area is by Richmond Road, which connects with the M7 Motorway and Rooty Hill Road North.

The Daily traffic usage has recently increased to approximately 25,000 vehicles per day north of the M7, following the opening of the M7 Motorway. The road has a high percentage of heavy vehicles in the traffic flow, including many large trucks generated by the existing rural/industrial activity in the area.

The RTA has in place a concept design proposal to upgrade the section of Richmond Road from the M7 Motorway/Rooty Hill Road North intersection to Grange Avenue at Marsden Park to four lanes, within the relatively short term future eg within the next five years and later to six lanes as part of the ultimate future traffic development scenario for the area.

Provisional agreements are already in place between the RTA and the developers of land in the North West Growth Centre Precincts of "Colebee" and "Marsden Park Industrial" for the reconstruction and widening of the relevant adjacent sections of Richmond Road to be directly funded by the precinct land owners according to a timeframe to be agreed with the RTA.

Richmond Road has a posted speed limit of 80km/h.

- Hollinsworth Road – Classified as a local street with posted speed limit of 50k/hr. Traffic volumes available from the RMS traffic models showed traffic volume of 200 AADT in 2006 and the recent counts undertaken in October 2019 indicate that traffic volume is 6650 vehicles per day on the upgraded road. (Copy of data attached in the Appendix of this report)

Hollinsworth Road provides vehicular access to frontage properties. It typically carries two vehicle lanes in each direction in the vicinity of the site. Kerbside parking is generally not restricted along both sides of the road. Access to the site is via Hollinsworth Road.

Figures 9, 10, 11 & 12 show photos of the site and access.



*Figure 9 Access to Site from Hollinsworth Road*



*Figure 10 Access (via Ahmadiyya Crescent) into the Site from Hollinsworth Road*





*Figure 11 Looking at the Site – Intersection of Langford Drive with Richmond Road*



*Figure 12 Looking at the Site from Richmond Road*



## Existing Traffic Management Controls & Land Use

The existing road network near the vicinity of the development site comprises the following important traffic management features.

- 80 km/h SPEED LIMIT which applies to Richmond Road in the vicinity of the site
- 50 km/h SPEED LIMIT default speed limit which applies to Hollinsworth Road
- TRAFFIC SIGNALS in Richmond Road where it intersects with Townson Road and with Hollinsworth Road
- ROUNDABOUT at the Langford Drive / Hollinsworth Road intersection
- T-INTERSECTION at the Access Road (Ahmadiyya Crescent) with Hollinsworth Road
- SPEED HUMPS at regular intervals along the access road connecting the subject site and Hollinsworth Road. See Figures 13 and 14.



*Figure 13 Access Driveway from Hollinsworth Road (via Ahmadiyya Crescent)*



*Figure 14 Access Driveway into site*

In concept, the Marsden Park Industrial (Employment) precinct is strategically well located with respect to future freight transport access to the M7 Motorway transport corridor and it will form one of three major future North Western Sydney employment centres representing almost one third of the predicted future total employment growth target ( +38,000 jobs) which will provide the minimum desirable future target ratio of 60% local jobs vs households for the North West Growth Centre of Sydney ( +63,500 dwellings ).

All road networks has been modelled and designed by the Transport for NSW as part of the Sydney Business Park development.

However, as part of this study the following model is undertaken.

- Intersection of Hollinsworth Road with Ahmadiyya Crescent
- Intersection of Hollinsworth Road with Chifley Glade and Bells Glade, and
- Internally driveway to site.

The modelling is based on SIDRA software. Sidra Intersection is a micro-analytical traffic evaluation tool that employs lane-by-lane and vehicle drive cycle models mainly for intersections.

Refer to Figure 15.



Figure 15 Traffic Modelling Area

As part of this proposal it is proposed to remove the SP 2 – Infrastructure (Road) zone as per Figure 16, which is redundant road in the network and is an internal driveway to 45 Hollinsworth Road. Due to security and safety reasons, the Ahmadiyya Muslim Association would like to retain this access.



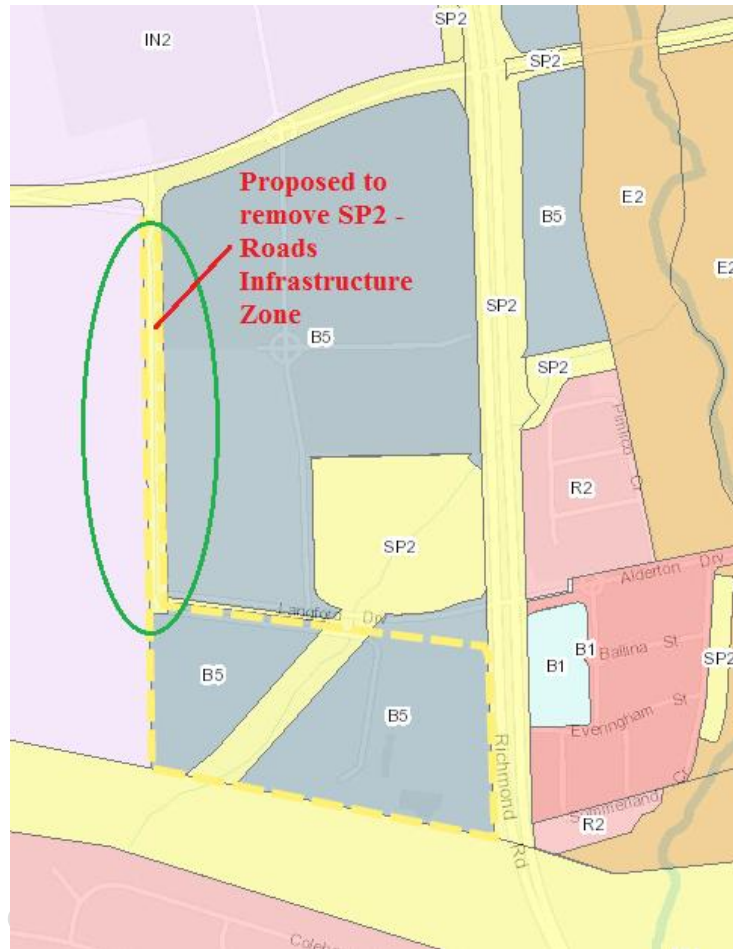


Figure 16 Proposed SP2 Infrastructure Road

#### 4.1 Existing Intersection Performance

The performance of the existing road network is largely dependent on the operating performance of key intersections which are critical capacity control points on the road network.

The SIDRA software package has been used to assess the existing peak hour operating performance of the intersections of Hollinsworth Road with Ahmadiyya Crescent and Hollinsworth Road with Chifley Glade / Bells Glade:





*Figure 17 Intersection of Hollinsworth Road with Ahmadiyya Crescent*

For the purpose of this assessment, traffic turning movement counts at the above intersection was undertaken in October 2019. Details of the traffic volumes are shown in Tables 1 and 2 and full detail of the study is in the Appendix of this report.

*Table 1 Existing AM (7.45am-8.45am) Turning Movement Count – Hollinsworth Road / Ahmadiyya Crescent*

| Road                    | LT (Veh/Hr) | Th (Veh/Hr) | RT (Veh/Hr) |
|-------------------------|-------------|-------------|-------------|
| Hollinsworth Road - WB  | 110         | 177         | -           |
| Hollinsworth Road - EB  | -           | 274         | 12          |
| Ahmadiyya Crescent - NB | 6           | -           | 40          |

Notes: NB = Northbound, SB = Southbound, WB Westbound, LT = Left Turn, Th = Through, RT = Right Turn, Veh = Vehicle, Hr = Hour

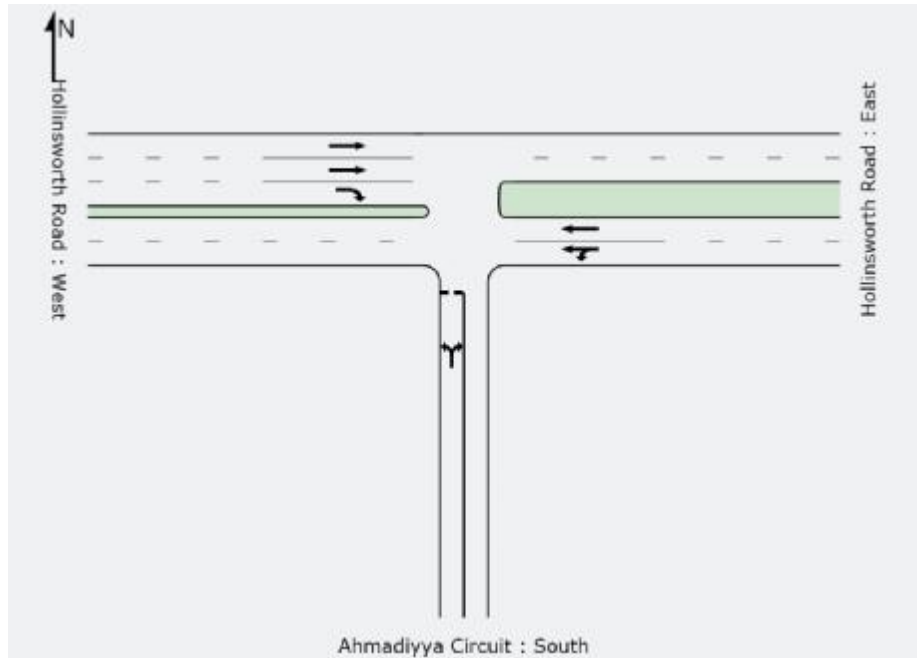


Table 2 Existing PM (4.30pm – 5.30pm) Turning Movement Count– Hollinsworth Road / Ahmadiyya Crescent

| Road                    | LT (Veh/Hr) | Th (Veh/Hr) | RT (Veh/Hr) |
|-------------------------|-------------|-------------|-------------|
| Hollinsworth Road - WB  | 43          | 205         | -           |
| Hollinsworth Road - EB  | -           | 212         | 7           |
| Ahmadiyya Crescent - NB | 6           | -           | 113         |

Notes: NB = Northbound, SB = Southbound, WB Westbound, LT = Left Turn, Th = Through, RT = Right Turn, Veh = Vehicle, Hr = Hour

The criteria for evaluating the operational performance of intersections are provided by the RMS Guidelines to Traffic Generating Developments which is shown in Table 3. The criteria are based on a qualitative measure or level of service that is applied to each corresponding average vehicle delay band.

Table 3 Operational Performance Criteria at Intersections

| Level of Service | Average Delay (sec/veh) | Traffic Signal/Roundabout                                     | Unsignalised Intersection                       |
|------------------|-------------------------|---------------------------------------------------------------|-------------------------------------------------|
| A                | Less than 14            | Good Operation                                                | Good operation                                  |
| B                | 15 to 28                | Good with acceptable delays and spare capacity                | Acceptable delays and spare capacity            |
| C                | 29 to 42                | Satisfactory                                                  | Satisfactory but accident study required        |
| D                | 43 to 56                | Operating near capacity                                       | Near capacity and other accident study required |
| E                | 57 to 70                | At capacity; at signals incidents will cause excessive delays | At capacity and requires other control mode     |
| F                | Greater than 70         | Roundabouts require other control mode                        |                                                 |

The performance of the subject intersections resulting from the SIDRA analysis are presented in Table 4. Refer to Appendix B for the full SIDRA output.

Table 4 Existing Intersection Operational Performance – Hollinsworth Road / Ahmadiyya Crescent

| Intersection                              | Peak Period                        | Average Delay <sup>1</sup> (sec) | Level of Service <sup>2</sup>      | Degree of Saturation <sup>3</sup> |
|-------------------------------------------|------------------------------------|----------------------------------|------------------------------------|-----------------------------------|
| Hollinsworth Road with Ahmadiyya Crescent | AM                                 | 1.6                              | A                                  | 0.086                             |
|                                           | PM                                 | 2.2                              | A                                  | 0.218                             |
| Intersection                              | Level of Service (AM) <sup>2</sup> |                                  | Level of Service (PM) <sup>2</sup> |                                   |
| Hollinsworth Road - WB                    | A                                  |                                  | A                                  |                                   |
| Hollinsworth Road - EB                    | A                                  |                                  | A                                  |                                   |
| Ahmadiyya Crescent - NB                   | A                                  |                                  | A                                  |                                   |

Notes:

1. The average delay for sign controlled intersections is selected from the movement with the highest average delay.
2. The level of service for sign controlled intersections is based on the highest average delay per vehicle for the most critical movement during peak conditions.
3. The Degree of Saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.

The results of the SIDRA analysis indicate that the intersection of Hollinsworth Road / Ahmadiyya Crescent is operating at a satisfactory level of service prior to development of the proposed site.

Similarly traffic survey was conducted at the intersection of Hollinsworth Road with Chifley Glade and Bells Glade. The traffic survey was undertaken in October 2019. Details of the traffic volumes are shown in Tables 5 and 6 and the full study data is available in the Appendix of this report.

*Table 5 Existing AM (8.00am-9.00am) Turning Movement Count- Hollinsworth Road / Chifley Glade / Bells Glade*

| Road                   | LT (Veh/Hr) | Th (Veh/Hr) | RT +UT (Veh/Hr) |
|------------------------|-------------|-------------|-----------------|
| Hollinsworth Road - WB | 142         | 155         | 126             |
| Hollinsworth Road - EB | 14          | 119         | 172             |
| Chifley Glade - NB     | 163         | 155         | 119             |
| Bell's Glade - SB      | 27          | 22          | 13              |

Notes: NB = Northbound, SB = Southbound, WB Westbound, LT = Left Turn, Th = Through, RT = Right Turn, UT – U-Turn, Veh = Vehicle, Hr = Hour

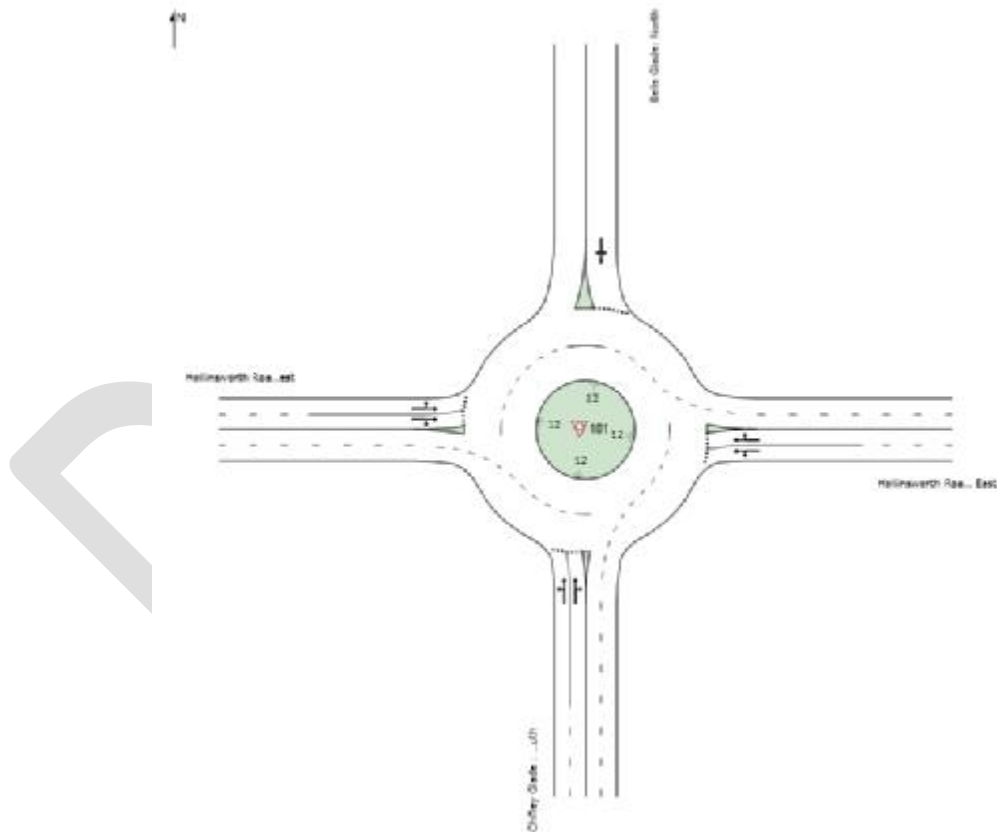




Table 6 Existing PM (4.30pm-5.30pm) Turning Movement Count- Hollinsworth Road / Chifley Glade / Bells Glade

| Road                   | LT (Veh/Hr) | Th (Veh/Hr) | RT +UT (Veh/Hr) |
|------------------------|-------------|-------------|-----------------|
| Hollinsworth Road - WB | 186         | 60          | 95              |
| Hollinsworth Road - EB | 29          | 166         | 173             |
| Chifley Glade - NB     | 175         | 132         | 372             |
| Bell's Glade - SB      | 88          | 56          | 26              |

Notes: NB = Northbound, SB = Southbound, WB Westbound, LT = Left Turn, Th = Through, RT = Right Turn, UT = U-Turn, Veh = Vehicle, Hr = Hour

The criteria for evaluating the operational performance of intersections are provided by the RMS Guidelines to Traffic Generating Developments which is shown in Table 7. The criteria are based on a qualitative measure or level of service that is applied to each corresponding average vehicle delay band.

Table 7 Operational Performance Criteria at Intersections

| Level of Service | Average Delay (sec/veh) | Traffic Signal/Roundabout                                     | Unsignalised Intersection                       |
|------------------|-------------------------|---------------------------------------------------------------|-------------------------------------------------|
| A                | Less than 14            | Good Operation                                                | Good operation                                  |
| B                | 15 to 28                | Good with acceptable delays and spare capacity                | Acceptable delays and spare capacity            |
| C                | 29 to 42                | Satisfactory                                                  | Satisfactory but accident study required        |
| D                | 43 to 56                | Operating near capacity                                       | Near capacity and other accident study required |
| E                | 57 to 70                | At capacity; at signals incidents will cause excessive delays | At capacity and requires other control mode     |
| F                | Greater than 70         | Roundabouts require other control mode                        |                                                 |

The performance of the subject intersections during the morning and evening peak periods resulting from the SIDRA analysis are presented in Table 8. Refer to Appendix B for the full SIDRA output.

**Table 8** Existing Intersection Operational Performance – Hollinsworth Road / Chifley Glade / Bells Glade

| Intersection                                         | Peak Period | Average Delay <sup>1</sup> (sec) | Level of Service <sup>2</sup> | Degree of Saturation <sup>3</sup> |
|------------------------------------------------------|-------------|----------------------------------|-------------------------------|-----------------------------------|
| Hollinsworth Road with Chifley Glade and Bells Glade | AM          | 7.0                              | A                             | 0.179                             |
|                                                      | PM          | 7.6                              | A                             | 0.397                             |

| Intersection           | Level of Service (AM) <sup>2</sup> | Level of Service (PM) <sup>2</sup> |
|------------------------|------------------------------------|------------------------------------|
| Hollinsworth Road - WB | A                                  | A                                  |
| Hollinsworth Road - EB | A                                  | A                                  |
| Chifley Glade          | A                                  | A                                  |
| Bells Glade            | A                                  | A                                  |

Notes:

1. The average delay for sign controlled intersections is selected from the movement with the highest average delay.
2. The level of service for sign controlled intersections is based on the highest average delay per vehicle for the most critical movement during peak conditions.
3. The Degree of Saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.

The results of the SIDRA analysis indicate that the intersection of Hollinsworth Road with Chifley Glade and Bells Glade are operating at a satisfactory level of service prior to development of the proposed site.

## 4.2 Public Transport

### 4.2.1 Rail Services

The closest Railway Stations to the proposed development site are Riverstone and Quakers Hill Railway Stations. It is served by Sydney Trains T1 North Shore, Northern and Western Line and T5 Cumberland Line. A detail of the Sydney Train network map is shown in Figure 18.



#### 4.2.1 Bus Services

Busways provides public transport services to the residents in the area. The following bus routes as per Figure 19 are available within the walking distance to the proposed development site:



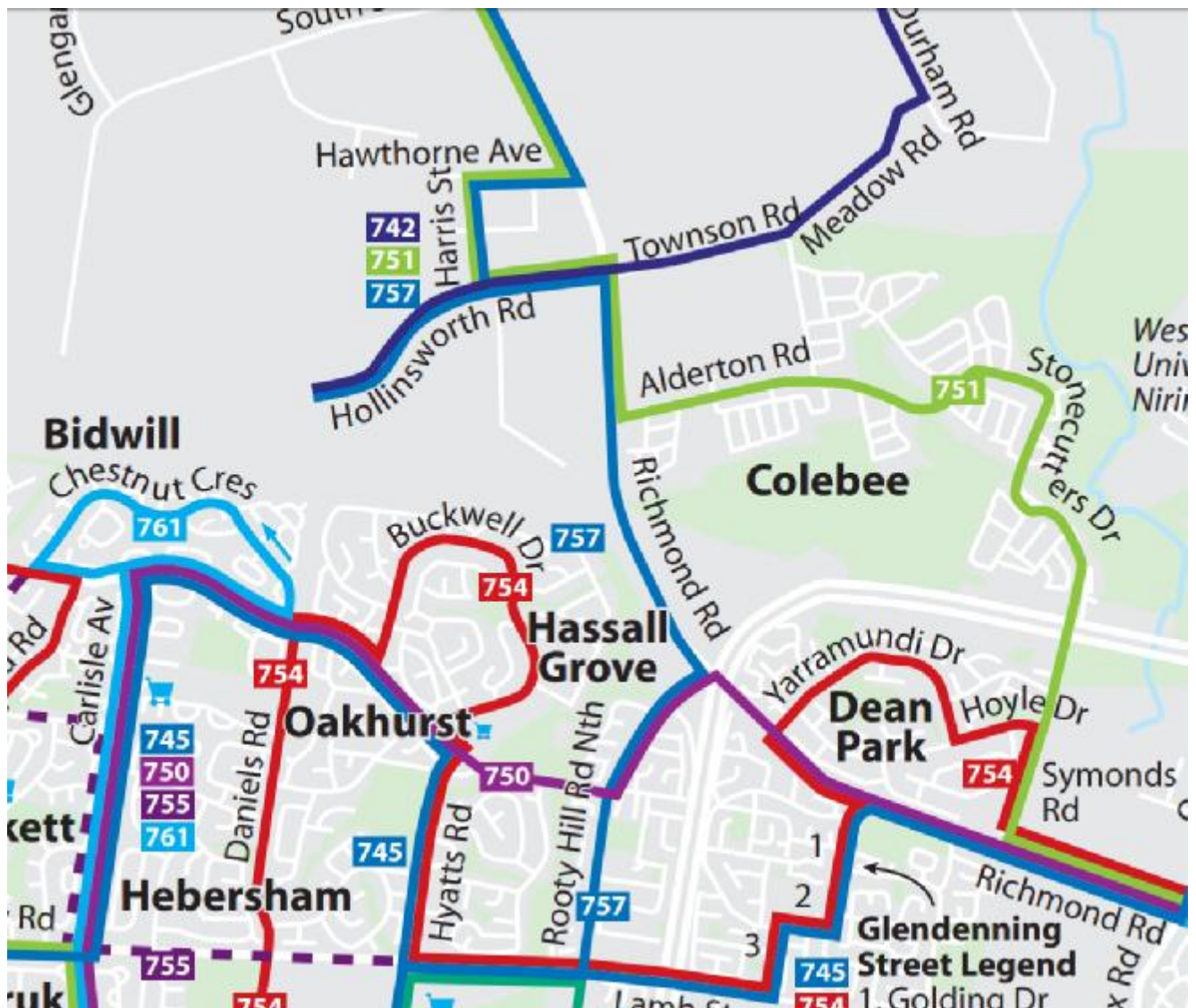


Figure 19 Bus Maps

- Route 742: Marsden Park to Rouse Hill
- Route 751: Rouse Hill Town Centre to Blacktown
- Route 757: Riverstone to Mount Druitt via Marsden Park & Rooty Hill

## Master planning

As discussed earlier Table 9 provide details on activities that are either permitted or prohibited.

*Table 9 Master Plan Activities and Planning Controls*

| Project                                        | Planning Control                                                                  | Comments                                                                                                                                             |
|------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sewer & Water Reticulation Upgrades            | PERMITTED with Service Authority Approvals (Sydney Water)                         | This is permissible under current zoning and is required to as part of future development on our site.                                               |
| Storage Warehouse                              | PERMITTED with consent                                                            | This is classified as <i>Warehouse or distribution centres</i> and is permissible with local Council approval.                                       |
| Existing Shed (Future Masroor Printing Press)  | PERMITTED with consent                                                            | This is permissible under current zoning. <i>Classified Use - Business premises</i>                                                                  |
| Visitors Accommodation (Masroor Guest House)   | Currently PROHIBITED, but likely approval would be negotiated with local Council. | Under planning controls, this activity is Prohibited, unless the development can be justified as ancillary use to existing buildings.                |
| Mission House Extension                        | PERMITTED with consent                                                            | Current dwelling may require extension.                                                                                                              |
| Recreational Facility (Dual Basketball Courts) | PERMITTED with consent                                                            | This is permissible under current zoning. <i>Classified Use - recreation facility (outdoor)</i>                                                      |
| Administration Building                        | PERMITTED with consent                                                            | Under planning controls, this activity is Prohibited<br><i>Zoning for office premises required</i>                                                   |
| Masroor Talimul Islam Academy                  | PERMITTED with consent                                                            | This is permissible under current zoning and will be subject to local Council approval. <i>Classified Use - educational establishment</i>            |
| Extension of Baitul Huda Mosque                | PERMITTED with consent                                                            | This is permissible under current zoning and will be subject to local Council approval. <i>Classified Use - place of public worship</i>              |
| Jamia Ahmadiyya Australia                      | PERMITTED with consent                                                            | This is classified as an educational establishment and is permissible with local Council approval. <i>Classified Use - educational establishment</i> |
| Future Extension of Khilafat Hall              | PERMITTED with consent                                                            | This is permissible under current zoning and will be subject to local Council approval. <i>Classified Use - function centre</i>                      |

## 5 Parking and Site Access

### 5.1 Parking Requirements

#### Existing Kerbside Parking Restrictions

Given the relatively undeveloped nature of the surrounding local area, there are generally no kerbside restrictions in the vicinity of the subject site.

#### Off-Street Car Parking Provisions

The off-street car parking requirements applicable to the master plan proposal are specified in Blacktown Development Control Plan No. A – Introduction and General Guidelines. The Council's car parking code does not provide a car parking rate for some of the proposed uses.

However, we have used and compared a number of uses close to this type of development, both using Council and RMS rates and ensured the parking spaces proposed are met.

Car parking provision will be required to the requirements of the proposed master plan development in accordance with the requirements of RMS Guide to Traffic Generating Development & Blacktown City Council's DCP is provided in Tables 10 & 11.

Table 10 Off-Street Parking Requirements (RMS Guide to Traffic Generating Development)

| Type                                                                                  | GFA (M2) | Number Units / Dwellings/rooms | Rate                                            | Parking Required | Provided |
|---------------------------------------------------------------------------------------|----------|--------------------------------|-------------------------------------------------|------------------|----------|
| Storage Warehouse                                                                     | 160      |                                | 1 space per 300m2 GFA                           | 1                |          |
| Print Room (Masroor Printing)                                                         | 60       |                                | 1 space per 40m2 GFA                            | 2                |          |
| Tourist and Visitor accommodation (Masroor Guest House) - <i>Casual accommodation</i> | 1500     | 8 units, 4 employees           | 1 space for each unit + 1 space per 2 employees | 10               |          |
| Mission House Extension - <i>Residential (Dwelling houses)</i>                        | 860      | 1 dwelling                     | 1-2 spaces per dwelling                         | 2                |          |
| Recreational Facility (Dual Basketball Courts)                                        | 1200     | 2 courts                       | 3 spaces per court                              | 6                |          |
| Administration Building                                                               | 3200     |                                | 1.8 spaces per 100m2 gross leasable office      | 58               |          |
| Educational Est. (Masroor Talimul Islam Academy)                                      | 1200     | 100 students                   | 0.1 per student                                 | 10               |          |
| Extension of Baitul Huda Mosque                                                       | 2900     |                                | 2 space per 100 m2 GFA                          | 58               |          |
| Educational Est. (Jamia                                                               | 1800     | 50 students (Staying in        | 0.1 per student                                 | 5                |          |



|                                    |      |          |                          |            |            |
|------------------------------------|------|----------|--------------------------|------------|------------|
| Ahmadiyya Australia)               |      | hostel)  |                          |            |            |
| Hostel (Jamia Ahmadiyya Australia) | 1600 | 25 rooms | 1 space per 5 rooms      | 5          |            |
| Gym. (Jamia Ahmadiyya Australia)   | 340  |          | 4.5 spaces per 100m2 GFA | 16         |            |
| Future Extension of Khilafat Hall  | 1200 |          | 1 space per 30m2 GFA     | 40         |            |
| <b>Total</b>                       |      |          |                          | <b>213</b> | <b>283</b> |

Note: Number of parking spaces has been rounded up

**Table 11 Off-Street Parking Requirements (Council DCP)**

| Type                                                                                  | GFA (M2) | Number Units / Dwellings/rooms           | Rate                                                                                                                   | Parking Required | Provided |
|---------------------------------------------------------------------------------------|----------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------|----------|
| Storage Warehouse                                                                     | 160      |                                          | 1 space per 45m2 GFA                                                                                                   | 4                |          |
| Print Room (Masroor Printing)                                                         | 60       |                                          | 1 space per 30m2 GFA                                                                                                   | 2                |          |
| Tourist and Visitor accommodation (Masroor Guest House) - <i>Casual accommodation</i> | 1500     | 8 units, 4 employees, 100m2 dining area  | 1 space for each unit + 1 space per 2 employees + 1 space per 10 m2 dining area + 1 space per 3 seats of function area | 8+2+10=20        |          |
| Mission House Extension - <i>Residential (Dwelling houses)</i>                        | 860      | 1 dwelling                               | 2 spaces per 3 or more bedroom 1 space for visitor                                                                     | 3                |          |
| Recreational Facility (Dual Basketball Courts)                                        | 1200     | 2 courts                                 | 3 spaces per court                                                                                                     | 6                |          |
| Administration Building                                                               | 3200     |                                          | 1 space per 40m2 gross leasable office                                                                                 | 80               |          |
| Educational Est. (Masroor Talimul Islam Academy)                                      | 1200     | 100 students (primary sch. Age), 5 staff | 1 space per staff + 1 space per 100 students + 1 space for delivery vehicles, drop-off area and buses as appropriate   | 7                |          |
| Extension of Baitul Huda Mosque                                                       | 2900     | 500 seats @ 1.5m2 = 750 m2               | 1 space per 4 seats or 1 space per 10m2 of seating area, whichever is greater                                          | 75               |          |
| Educational Est. (Jamia                                                               | 1800     | 50 students                              | 1 space per staff                                                                                                      | 3                |          |

|                                    |      |                     |                                                                                                    |            |            |
|------------------------------------|------|---------------------|----------------------------------------------------------------------------------------------------|------------|------------|
| Ahmadiyya Australia)               |      | (Staying in hostel) | + 1 space per 100 students + 1 space for delivery vehicles, drop-off area and buses as appropriate |            |            |
| Hostel (Jamia Ahmadiyya Australia) | 1600 | 25 rooms            | 1 space per 5 rooms                                                                                | 5          |            |
| Gym. (Jamia Ahmadiyya Australia)   | 340  |                     | 1 space per 25m2 GFA                                                                               | 14         |            |
| Future Extension of Khilafat Hall  | 1200 |                     | 1 space per 30m2 GFA                                                                               | 40         |            |
| <b>Total</b>                       |      |                     |                                                                                                    | <b>259</b> | <b>283</b> |

The maximum number of parking spaces required as part of the Master Plan requirement is 259.

## 5.2 Existing Parking

There are currently 150 marked carpark spaces as per Figure 20 (Area A). But during major events at this site, over 500 car spaces are made available as per Figure 20 (Areas A, B and C).



Figure 20 On Site Carpark Provision

#### Carpark Provision:

- Area A – 150 spaces
- Area B – 300 spaces
- Area C – 50 spaces

Total Carpark Spaces – 500

The existing open space car park is shown in Figure 21

*Figure 21 At-Grade Carpark Provision*



### 5.3 Proposed Parking

It is proposed that additional 283 car park spaces will be constructed as part of the Master Plan development. See Table 12 and Figure 22.

The required car park spaces in accordance with the RMS *Guide to Traffic Generating Development* are 213 spaces and *Blacktown City Council DCP* is 259 spaces. There will be sufficient Car Park spaces available as part of the master plan development as per Table 12.



| Area                                            | Number of Proposed Carpark Spaces |
|-------------------------------------------------|-----------------------------------|
| Area A – Second level carpark                   | 200                               |
| Area B – Next to the Proposed Courts            | 60                                |
| Area C – Next to the Education Building (Jamia) | 8                                 |
| Area D– Next to the Hall                        | 15                                |
| <b>TOTAL</b>                                    | <b>283</b>                        |
|                                                 |                                   |
| <b>Overflow Parking</b>                         |                                   |
| Area E – Open Ground                            | 300                               |

*Table 12 Proposed Off-Street Parking as part of Master Plan*

#### 5.4 Access Requirements

Access to the site is via Ahmadiyya Crescent which intersects with Hollinsworth Road as shown on Figure 3. This is a sealed 5.0 metre road, approximately 800 metres to the carpark. The arrangement of this driveway is safe (and secured), convenient and easily accessible for the community. Previous discussions were held with the Sydney Business District clients on providing access off Langford Drive but the Ahmadiyya Muslim Association do not prefer this as there would be a higher risk in regards to safety, security and anti-social activities on its property.

As shown on Figure 2, the driveway has a SP2 zoning and as part of this planning proposal we are requesting that this SP2 zone be removed as the association would like that to remain as a private driveway.

As part of the Master Plan there is a proposal to upgrade this driveway.



## 6 Traffic Implications

### 6.1 Traffic Generation

The RMS 'Guide to Traffic Generating Developments' specifies traffic generation rates for various types of land uses. Site specific rates for temporary accommodation is not provided, as a conservative approach the rates for the Motels (Casual Accommodation) for tourist has been used for this analysis.

The potential traffic generation rate for the proposed master plan activities or development is provided in the RMS 'Guide to Traffic Generating Developments'. The proposed traffic generation of the developments is provided in Table 13 below.

**Table 13** Traffic Generated from the Proposed Master Plan Development

| Component                                                                             | GFA (M2) | Number Units / Dwellings/rooms | Daily Veh. Trips Rate | Weekday peak hour vehicle trips. | Traffic Generation Rate (vtph) |                   | Traffic Generation (vtph) |    | Daily Traffic Generation (vpd) |
|---------------------------------------------------------------------------------------|----------|--------------------------------|-----------------------|----------------------------------|--------------------------------|-------------------|---------------------------|----|--------------------------------|
|                                                                                       |          |                                |                       |                                  | Peak Hour                      |                   | Peak Hour                 |    |                                |
|                                                                                       |          |                                |                       |                                  | AM                             | PM                | AM                        | PM |                                |
| Storage Warehouse                                                                     | 160      |                                | 4 per 100m2 GFA       | 0.5 per 100m2 GFA                | 0.4 per 100m2 GFA              | 0.3 per 100m2 GFA | 1                         | 1  | 7                              |
| Print Room (Masroor Printing)                                                         | 60       |                                | 10/100m2 GFA          | 2/100m2 GFA                      | 0.4 per 100m2 GFA              | 0.3 per 100m2 GFA | 1                         | 1  | 6                              |
| Tourist and Visitor accommodation (Masroor Guest House) - <i>Casual accommodation</i> | 1500     | 8 units                        | 3 per unit            | 0.4 per unit                     | 0.4 per unit                   | 0.4 per unit      | 4                         | 4  | 24                             |
| Mission House Extension - <i>Residential (Dwelling houses)</i>                        | 860      | 1 dwelling                     | 9.0 per dwelling      | 0.85 per dwelling                | 1.8 per dwelling               | 1.6 per dwelling  | 2                         | 2  | 9                              |
| Recreational Facility (Dual Basketball Courts)                                        | 1200     | 2 courts                       | 5 per court           | 4 per court                      | 0.6 per court                  | 0.4 per court     | 2                         | 1  | 10                             |
| Administration Building (Non-Commercial)                                              | 3200     |                                | 2 per 100 m2 GFA      | 1 per 100 m2 GFA                 | 0.4 per 100m2 GFA              | 0.3 per 100m2 GFA | 13                        | 10 | 64                             |
| Educational Est. (Masroor Talimul Islam Academy)                                      | 1200     | 100 students                   | 0.35 per student      | 0.25 per student                 | 0.2 per student                | 0.15 per student  | 20                        | 15 | 35                             |
| Extension of Baitul Huda                                                              | 2900     |                                | 5 per 100 m2 GFA      | 2 per 100 m2 GFA                 | 0.4 per 100 m2                 | 0.3 per 100 m2    | 12                        | 9  | 145                            |

| Mosque                                       |      |                                 |                               |                              | GFA                            | GFA                            |       |       |         |
|----------------------------------------------|------|---------------------------------|-------------------------------|------------------------------|--------------------------------|--------------------------------|-------|-------|---------|
| Educational Est. (Jamia Ahmadiyya Australia) | 1800 | 50 students (Staying in hostel) | 0.1 per student               | 0.1 per student              | 0.1 per student                | 0.1 per student                | 1     | 1     | 5       |
| Hostel (Jamia Ahmadiyya Australia)           | 1600 | 25 rooms                        | 1 per 4 rooms                 | 0.2 per room                 | 2 per 25 rooms                 | 2 per 25 rooms                 | 2     | 2     | 7       |
| Gym. (Jamia Ahmadiyya Australia)             | 340  |                                 | 20 / 100m <sup>2</sup> GFA    |                              |                                | 3 / 100m <sup>2</sup> GFA      | 11    | 11    | 68      |
| Future Extension of Khilafat Hall            | 1200 |                                 | 10 per 100 m <sup>2</sup> GFA | 2 per 100 m <sup>2</sup> GFA | 1.4 per 100 m <sup>2</sup> GFA | 1.2 per 100 m <sup>2</sup> GFA | 17    | 15    | 120     |
|                                              |      |                                 |                               |                              |                                |                                | 86vph | 72vph | 500 vpd |

Vph – Vehicle Per Hour

The proposed development as part of the Master Plan will generate 86 and 72 vehicle trips (two way) during AM and PM peak hours respectively.

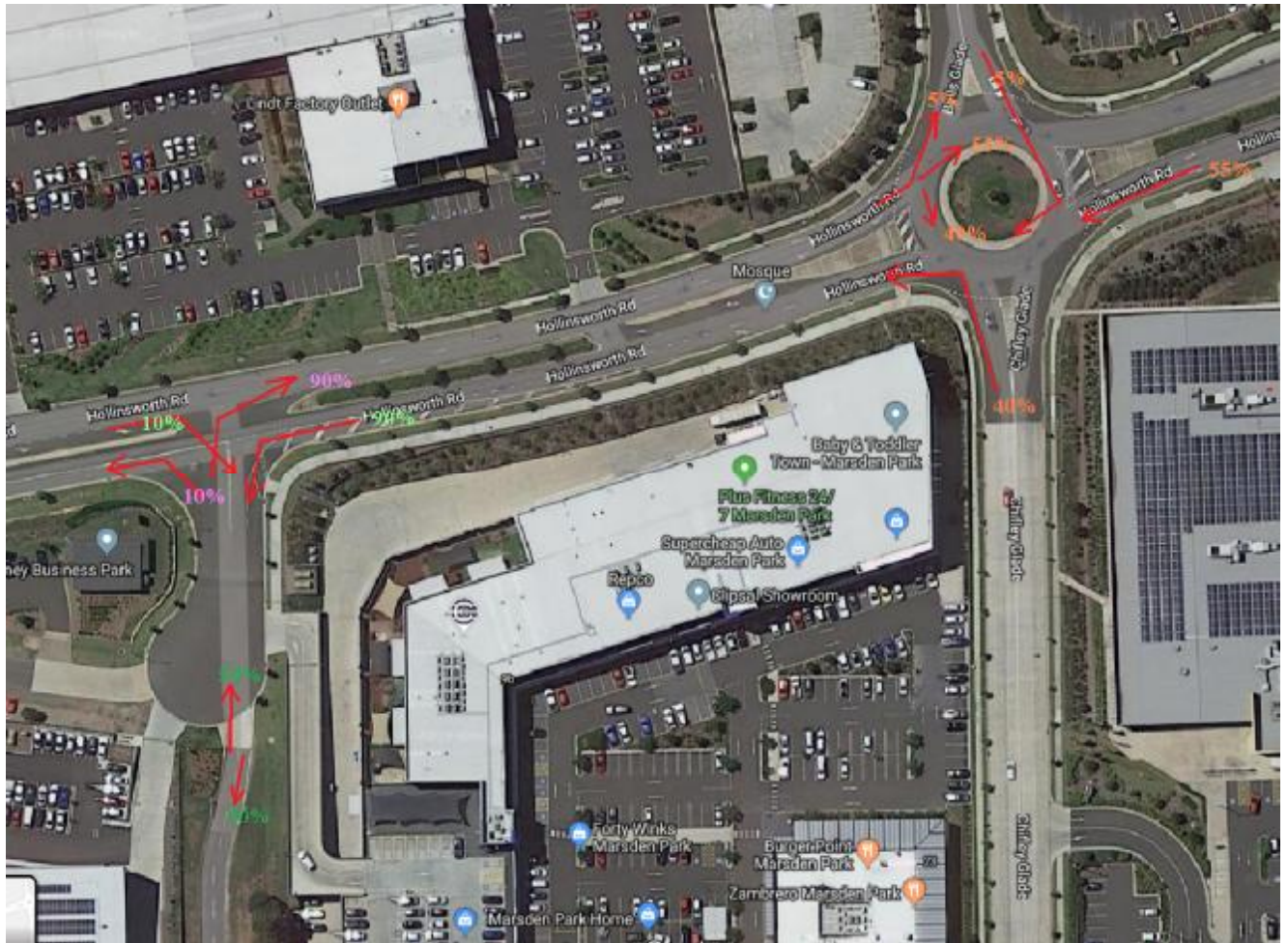
The distribution of these trips is based on the travel behaviour currently on site, generated from the current land use. Although trip distribution will occur during the implementation of the Master Plan for the next 20 years, the traffic modelling will assume that all works will happen in the immediate future.

## 6.2 Traffic Assignment

Traffic generated by the proposed master plan development activities has been distributed onto the adjacent road network. For the purpose of this assessment in order to assess the worst case scenario, it has been assumed that all traffic generated by the proposed developments will be distributed as per Figure 23. This assumption is based on current travel behaviour generated from the site.



### *Trip Distribution*



### 6.3 Existing Intersection/Road Performance

The assessment of the traffic impact will be based on intersection and road capacity performances.

The performance of the existing road network is largely dependent on the operating performance of key intersections which are critical capacity control points on the road network.

The RMS Guide to Traffic Generating Development has identified the Environmental Mid-Block Capacity of a road based on the impact of traffic, road and location aspects.

The SIDRA software package has been used to assess the existing peak hour operating performance of the intersections of Hollinsworth Road with Ahmadiyya Crescent and Hollinsworth Road with Chifley Glade / Bells Glade.

### 6.3.1 Intersection of Hollinsworth Road with Ahmadiyya Crescent

The traffic volumes for the intersection of Hollinsworth Road with Ahmadiyya Crescent were undertaken in October 2019.

Figure 24 shows the layout of Hollinsworth Road intersection with Ahmadiyya Crescent.



*Figure 24 Intersection of Hollinsworth Road with Ahmadiyya Crescent*

For the purpose of this assessment, traffic turning movement counts at the above intersection were undertaken in October 2019.

Details of the existing traffic volumes for Hollinsworth Road / Ahmadiyya Crescent were discussed under Section 4.1 of this report.

Full traffic survey data is attached in the Appendix E of this report.

The performance of the subject intersections resulting from the SIDRA analysis are presented in Table 14. Refer to Appendix B for the full SIDRA output.

*Table 14 Existing Intersection Operational Performance – Hollinsworth Road / Ahmadiyya Crescent*

| Intersection                              | Peak Period | Average Delay <sup>1</sup> (sec) | Level of Service <sup>2</sup> | Degree of Saturation <sup>3</sup> |
|-------------------------------------------|-------------|----------------------------------|-------------------------------|-----------------------------------|
| Hollinsworth Road with Ahmadiyya Crescent | AM          | 1.6                              | A                             | 0.086                             |
|                                           | PM          | 2.2                              | A                             | 0.218                             |

| Intersection            | Level of Service (AM) <sup>2</sup> | Level of Service (PM) <sup>2</sup> |
|-------------------------|------------------------------------|------------------------------------|
| Hollinsworth Road - WB  | A                                  | A                                  |
| Hollinsworth Road - EB  | A                                  | A                                  |
| Ahmadiyya Crescent - NB | A                                  | A                                  |

Notes:

1. The average delay for sign controlled intersections is selected from the movement with the highest average delay.
2. The level of service for sign controlled intersections is based on the highest average delay per vehicle for the most critical movement during peak conditions.
3. The Degree of Saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.

The results of the SIDRA analysis indicate that the intersection of Hollinsworth Road / Ahmadiyya Crescent is operating at a satisfactory level of service prior to development of the proposed site.

### 6.3.2 Intersection of Hollinsworth Road with Chifley Road / Bells Glade

Similarly the traffic volumes for the intersection of Hollinsworth Road / Chifley Glade / Bells Glade were also collected in October 2019.

Details of the existing traffic volumes for Hollinsworth Road intersection with Chifley Glade / Bells Glade were discussed under Section 4.1 of this report.

Full traffic survey data is attached in the Appendix of this report.

The performance of the subject intersections resulting from the SIDRA analysis are presented in Table 15. Refer to Appendix B for the full SIDRA output.

*Table 15 Existing Intersection Operational Performance – Hollinsworth Road / Chifley Glade / Bells Glade*

| Intersection                                         | Peak Period | Average Delay <sup>1</sup> (sec) | Level of Service <sup>2</sup> | Degree of Saturation <sup>3</sup> |
|------------------------------------------------------|-------------|----------------------------------|-------------------------------|-----------------------------------|
| Hollinsworth Road with Chifley Glade and Bells Glade | AM          | 7.0                              | A                             | 0.179                             |
|                                                      | PM          | 7.6                              | A                             | 0.397                             |

| Intersection           | Level of Service (AM) <sup>2</sup> | Level of Service (PM) <sup>2</sup> |
|------------------------|------------------------------------|------------------------------------|
| Hollinsworth Road - WB | A                                  | A                                  |
| Hollinsworth Road - EB | A                                  | A                                  |
| Chifley Glade          | A                                  | A                                  |
| Bells Glade            | A                                  | A                                  |

Notes:

1. The average delay for sign controlled intersections is selected from the movement with the highest average delay.
2. The level of service for sign controlled intersections is based on the highest average delay per vehicle for the most critical movement during peak conditions.
3. The Degree of Saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.

The results of the SIDRA analysis indicate that the intersection of Hollinsworth Road with Chifley Glade and Bells Glade are operating at a satisfactory level of service prior to development of the proposed site.

## 6.4 Environmental Mid-Block Capacity

The RMS Guide to Traffic Generating Development has identified the Environmental Mid-Block Capacity of a road based on the impact of traffic, road and location aspects. The recommended Environmental Capacity on local roads is defined in Table 16.

*Table 16 Environmental Capacity Performance on Urban Roads (Hollinsworth Road)*  
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: RMS Guide to Traffic Generating Development

A seven day traffic tube counts in October 2019 were undertaken on Hollinsworth Road near Ahmadiyya Crescent. The results indicate an Average Annual Daily Traffic (AADT) volume of 6650 vehicles/day, an 85<sup>th</sup> percentile speed of 60.6 km/h (i.e. 85% of the vehicles travelling along this section of roadway travelled at speed below 60.6 km/h) and the average vehicle speed of 52.9 km/h.

The result of the traffic data count is summarised in Table 17.



*Table 17 Existing Traffic Flow on Hollinsworth Road, Marsden Park*

| Direction | W' Day<br>(veh/day) | 7 Day<br>(veh/day) | Peak W' Day<br>Flow (Veh/hr) | Peak 7 Day Flow<br>(Veh/hr) |
|-----------|---------------------|--------------------|------------------------------|-----------------------------|
| WB        | 3806                | 3336               | 304                          | 277                         |
| EB        | 3737                | 3315               | 488                          | 419                         |
| Combined  | 7542                | 6650               | 736                          | 652                         |

The traffic flow on Hollinsworth Road, post development would be as per Table 18.

The proposed development as part of the Master Plan will generate 86 vehicle trips (two way) during peak hour respectively.

*Table 18 Existing Traffic Flow on Hollinsworth Road, Marsden Park*

| Direction | Peak W' Day<br>Flow (Veh/hr) | Peak 7 Day Flow<br>(Veh/hr) |
|-----------|------------------------------|-----------------------------|
| WB        | 347                          | 320                         |
| EB        | 531                          | 462                         |
| Combined  | 822                          | 738                         |

As such, it can be concluded that the traffic generated by the proposed development which is shown in Table 18 (Median or inner lane Divided Road)) , the maximum peak hour traffic on Hollinsworth Road are less than the maximum acceptable traffic data set out by the RMS.

Similarly a seven day traffic tube counts in October 2019 were undertaken on Ahmadiyya Crescent and the internal driveway near Ahmadiyya Crescent. The results indicate the Average Annual Daily Traffic (AADT) volume and Speed data are shown in Tables 19, 20 and 22. The proposed Average Annual Daily Traffic (AADT) volumes are also shown in Tables 21 and 23.

*Table 19 Existing Annual Daily Traffic (AADT) volume and Speed data*

| Road               | Annual<br>Daily Traffic<br>(AADT)<br>volume<br>(Veh/day) | Ave. Speed<br>(km/hr) | 85%ile. Speed<br>(km/hr) |
|--------------------|----------------------------------------------------------|-----------------------|--------------------------|
| Ahmadiyya Crescent | 1587                                                     | 26.4                  | 31.1                     |
| Internal Driveway  | 231                                                      | 26.9                  | 32.2                     |

*Table 20 Existing Traffic Flow on Ahmadiyya Crescent, Marsden Park*

| Direction | W' Day<br>(veh/day) | 7 Day<br>(veh/day) | Peak W' Day<br>Flow (Veh/hr) | Peak 7 Day Flow<br>(Veh/hr) |
|-----------|---------------------|--------------------|------------------------------|-----------------------------|
| NB        | 883                 | 801                | 114                          | 106                         |
| SB        | 866                 | 787                | 101                          | 77                          |
| Combined  | 1749                | 1587               | 150                          | 124                         |

*Table 21 Proposed Traffic Flow on Ahmadiyya Crescent, Marsden Park*

| Direction | Peak W' Day<br>Flow (Veh/hr) | Peak 7 Day Flow<br>(Veh/hr) |
|-----------|------------------------------|-----------------------------|
| NB        | 157                          | 149                         |
| SB        | 144                          | 120                         |
| Combined  | 236                          | 210                         |

*Table 22 Existing Traffic Flow on Internal Driveway, Marsden Park*

| Direction | W' Day<br>(veh/day) | 7 Day<br>(veh/day) | Peak W' Day<br>Flow (Veh/hr) | Peak 7 Day Flow<br>(Veh/hr) |
|-----------|---------------------|--------------------|------------------------------|-----------------------------|
| NB        | 87                  | 114                | 31                           | 28                          |
| SB        | 92                  | 117                | 24                           | 23                          |
| Combined  | 179                 | 231                | 45                           | 42                          |

*Table 23 Proposed Traffic Flow on Internal Driveway, Marsden Park*

| Direction | W' Day<br>(veh/day) | 7 Day<br>(veh/day) | Peak W' Day<br>Flow (Veh/hr) | Peak 7 Day Flow<br>(Veh/hr) |
|-----------|---------------------|--------------------|------------------------------|-----------------------------|
| NB        |                     |                    | 74                           | 71                          |
| SB        |                     |                    | 67                           | 66                          |
| Combined  |                     |                    | 131                          | 128                         |

The RMS Guide to Traffic Generating Development has identified the Environmental Mid-Block Capacity of a local road based on the impact of traffic, road and location aspects. The recommended Environmental Capacity on local roads is defined in Table 24.

*Table 24 Environmental Capacity Performance on Local Roads (Internal Driveway)*  
**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.

As such, it can be concluded that the traffic generated by the proposed development which is shown in Tables 21 and 23 (Local Road)) , the maximum peak hour traffic on Ahmadiyya Crescent and the Internal driveway are less than the maximum acceptable traffic data set out by the RMS.

## 6.5 Traffic Assignment & Post Development Intersection Operational Performance

The effects of additional traffic generated by the proposed land uses to the key intersections near the proposed site have been assessed. SIDRA traffic model was used to assess the operational performance of key intersections by superimposing the proposed development traffic demand on existing peak hour traffic volumes.

Traffic assignment or distribution was discussed under Section 6.5 of this report.

Traffic generated by the proposed master plan development activities were distributed onto the adjacent road network. This assumption is based on current travel behaviour generated from the site.

Tables 24 and 25 show the Traffic distribution (AM and PM) within the road network based on the traffic generation from the proposed Master Plan development.

*Table 24 Traffic Distributions (Future) - AM*

| Road/ Intersection                  | LT (Veh/Hr) | Th (Veh/Hr) | RT (Veh/Hr) |
|-------------------------------------|-------------|-------------|-------------|
| Entrance to Site - NB               | -           | 43 (50%)    | -           |
| Entrance to Site - SB               | -           | 43 (50%)    | -           |
| Hollinsworth Road/Ahmadiyya Ct - NB | 4(10%)      | -           | 39(90%)     |
| Hollinsworth Road/Ahmadiyya Ct - SB | 39(90%)     | -           | 4(10%)      |
| Hollinsworth Road RA - EB           | 2(5%)       | 24(55%)     | 17(40%)     |

|                           |         |         |       |
|---------------------------|---------|---------|-------|
| Hollinsworth Road RA - WB | -       | 24(55%) | -     |
| Chifley Glade - NB        | 18(40%) | -       | -     |
| Bells Glade - SB          | -       | -       | 3(5%) |

*Table 25 Traffic Distribution (Future) - PM*

| Road/ Intersection                  | LT (Veh/Hr) | Th (Veh/Hr) | RT (Veh/Hr) |
|-------------------------------------|-------------|-------------|-------------|
| Entrance to Site - NB               | -           | 36 (50%)    | -           |
| Entrance to Site - SB               | -           | 36 (50%)    | -           |
| Hollinsworth Road/Ahmadiyya Ct - NB | 4(10%)      | -           | 32(90%)     |
| Hollinsworth Road/Ahmadiyya Ct - SB | 32(90%)     | -           | 4(10%)      |
| Hollinsworth Road RA - EB           | 2(5%)       | 20(55%)     | 14(40%)     |
| Hollinsworth Road RA - WB           | -           | 20(55%)     | -           |
| Chifley Glade - NB                  | 15(40%)     | -           | -           |
| Bells Glade - SB                    | -           | -           | 2(5%)       |

*Intersection of Hollinsworth Road / Ahmadiyya Crescent – Future Performance*

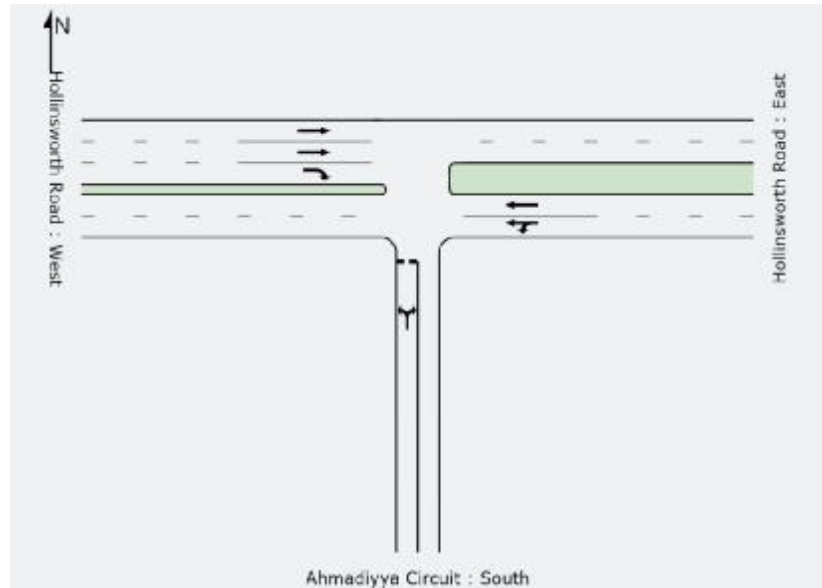
Tables 26 and 27 show the proposed Traffic distribution at AM and PM peak flows at Hollinsworth Road with Ahmadiyya Crescent based on the traffic generation from the proposed Master Plan development.

*Table 26 Proposed AM Turning Movement Count – Hollinsworth Road / Ahmadiyya Crescent*

| Road                    | LT (Veh/Hr)  | Th (Veh/Hr) | RT+UT (Veh/Hr) |
|-------------------------|--------------|-------------|----------------|
| Hollinsworth Road - WB  | 110+39 = 149 | 177         | -              |
| Hollinsworth Road - EB  | -            | 274         | 12+4=16        |
| Ahmadiyya Crescent - NB | 6+4=10       | -           | 40+39=79       |

Notes: NB = Northbound, SB = Southbound, WB Westbound, LT = Left Turn, Th = Through, RT = Right Turn, UT- U-turn, Veh = Vehicle, Hr = Hour





*Table 27 Proposed PM Turning Movement Count– Hollinsworth Road / Ahmadiyya Crescent*

| Road                    | LT (Veh/Hr) | Th (Veh/Hr) | RT +UT (Veh/Hr) |
|-------------------------|-------------|-------------|-----------------|
| Hollinsworth Road - WB  | 43+32=75    | 205         | -               |
| Hollinsworth Road - EB  | -           | 212         | 8+4=12          |
| Ahmadiyya Crescent - NB | 6+4=10      | -           | 113+32=145      |

Notes: NB = Northbound, SB = Southbound, WB Westbound, LT = Left Turn, Th = Through, RT = Right Turn, UT- U-turn, Veh = Vehicle, Hr = Hour

The criteria for evaluating the operational performance of intersections are provided by the RMS Guidelines to Traffic Generating Developments which is shown in Table 28. The criteria are based on a qualitative measure or level of service that is applied to each corresponding average vehicle delay band.

*Table 28 Operational Performance Criteria at Intersections*

| Level of Service | Average Delay (sec/veh) | Traffic Signal/Roundabout                                     | Unsignalised Intersection                       |
|------------------|-------------------------|---------------------------------------------------------------|-------------------------------------------------|
| A                | Less than 14            | Good Operation                                                | Good operation                                  |
| B                | 15 to 28                | Good with acceptable delays and spare capacity                | Acceptable delays and spare capacity            |
| C                | 29 to 42                | Satisfactory                                                  | Satisfactory but accident study required        |
| D                | 43 to 56                | Operating near capacity                                       | Near capacity and other accident study required |
| E                | 57 to 70                | At capacity; at signals incidents will cause excessive delays | At capacity and requires other control mode     |
| F                | Greater than 70         | Roundabouts require other control mode                        |                                                 |

The performance of the subject intersections during the morning and evening peak periods resulting from the SIDRA analysis are presented in Table 29. Refer to Appendix C for the full SIDRA output.

**Table 29** *Future Intersection Operational Performance (Based on full Master Plan development in year 1) – Hollinsworth Road / Ahmadiyya Crescent*

| Intersection                              | Peak Period                        | Average Delay <sup>1</sup> (sec) | Level of Service <sup>2</sup>      | Degree of Saturation <sup>3</sup> |
|-------------------------------------------|------------------------------------|----------------------------------|------------------------------------|-----------------------------------|
| Hollinsworth Road with Ahmadiyya Crescent | AM                                 | 2.9                              | A                                  | 0.109                             |
|                                           | PM                                 | 2.9                              | A                                  | 0.289                             |
| Intersection                              | Level of Service (AM) <sup>2</sup> |                                  | Level of Service (PM) <sup>2</sup> |                                   |
| Hollinsworth Road - WB                    | A                                  |                                  | A                                  |                                   |
| Hollinsworth Road - EB                    | A                                  |                                  | A                                  |                                   |
| Ahmadiyya Crescent - NB                   | A                                  |                                  | A                                  |                                   |

Notes:

1. The average delay for sign controlled intersections is selected from the movement with the highest average delay.
2. The level of service for sign controlled intersections is based on the highest average delay per vehicle for the most critical movement during peak conditions.
3. The Degree of Saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.

The results of the SIDRA analysis indicate that the intersection of Hollinsworth Road / Ahmadiyya Crescent is operating at a satisfactory level of service after proposed Master Plan development (Year 1 – full development).

#### Intersection of Hollinsworth Road / Chifley Glade / Bells Glade – Future Performance

Tables 30 and 31 show the proposed Traffic distribution at AM and PM peak flows at Hollinsworth Road / Chifley Glade / Bells Glade based on the traffic generation from the proposed Master Plan development.

**Table 30** *Proposed AM Turning Movement Count- Hollinsworth Road / Chifley Glade / Bells Glade*

| Road                   | LT (Veh/Hr) | Th (Veh/Hr) | RT+UT (Veh/Hr) |
|------------------------|-------------|-------------|----------------|
| Hollinsworth Road - WB | 142         | 155+24=179  | 126            |
| Hollinsworth Road - EB | 14+2=16     | 119+24=143  | 172+17=189     |
| Chifley Glade - NB     | 163+18=181  | 55          | 119            |
| Bells Glade - SB       | 27          | 22          | 13+3=16        |

Notes: NB = Northbound, SB = Southbound, WB Westbound, LT = Left Turn, Th = Through, RT = Right Turn, UT- U-turn, Veh = Vehicle, Hr = Hour

**Table 31 Proposed PM Turning Movement Count- Hollinsworth Road / Chifley Glade / Bells Glade**

| Road                   | LT (Veh/Hr) | Th (Veh/Hr) | RT+UT (Veh/Hr) |
|------------------------|-------------|-------------|----------------|
| Hollinsworth Road - WB | 186         | 60+20=80    | 95             |
| Hollinsworth Road - EB | 29+2=31     | 166+20=186  | 173+14=187     |
| Chifley Glade - NB     | 175+15=190  | 132         | 372            |
| Bell's Glade - SB      | 88          | 56          | 26+2=28        |

Notes: NB = Northbound, SB = Southbound, WB Westbound, LT = Left Turn, Th = Through, RT = Right Turn, UT- U-turn, Veh = Vehicle, Hr = Hour

The performance of the subject intersections resulting from the SIDRA analysis are presented in Table 32 for Hollinsworth Road / Chifley Glade / Bells Glade intersection from Master Plan Development (full development in Year 1). Refer to Appendix C for the full SIDRA output.

**Table 32 Future (Base Year) Intersection Operational Performance – Hollinsworth Road / Chifley Glade / Bells Glade from Master Plan Development**

| Intersection                                         | Peak Period | Average Delay <sup>1</sup> (sec) | Level of Service <sup>2</sup> | Degree of Saturation <sup>3</sup> |
|------------------------------------------------------|-------------|----------------------------------|-------------------------------|-----------------------------------|
| Hollinsworth Road with Chifley Glade and Bells Glade | AM          | 7.1                              | A                             | 0.192                             |
|                                                      | PM          | 7.1                              | A                             | 0.406                             |

| Intersection           | Level of Service (AM) <sup>2</sup> | Level of Service (PM) <sup>2</sup> |
|------------------------|------------------------------------|------------------------------------|
| Hollinsworth Road - WB | A                                  | A                                  |
| Hollinsworth Road - EB | A                                  | A                                  |
| Chifley Glade          | A                                  | A                                  |
| Bells Glade            | A                                  | A                                  |

Notes:

1. The average delay for sign controlled intersections is selected from the movement with the highest average delay.
2. The level of service for sign controlled intersections is based on the highest average delay per vehicle for the most critical movement during peak conditions.
3. The Degree of Saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.

The results of the SIDRA analysis indicate that the intersection of Hollinsworth Road / Chifley Glade / Bells Glade will be operating at a satisfactory level of service after proposed Master Plan development (Year 1 – full development).

## 6.6 Post Development Intersection Operational Performance after 20 Years Scenario

The effects of additional traffic generated by the proposed land uses to the key intersections near the proposed site have been assessed. SIDRA traffic model was used to assess the operational performance of key intersections by superimposing the proposed development traffic demand on existing peak hour traffic volumes.

At a growth rate of 2%, existing traffic flows were project from a base zero (0) year to 20 years. Then the traffic generated from the proposed Master Plan was added to check the performance of the road network.

The projected 20 year flows are shown in Tables 33 and 34 for Hollinsworth Road with Ahmadiyya Crescent and Tables 35 and 36 for Hollinsworth Road with Chifley Glade / Bells Glade intersections.

*Table 33 20 Year Proposed AM Turning Movement Count – Hollinsworth Road / Ahmadiyya Crescent*

| Road                    | LT (Veh/Hr)  | Th (Veh/Hr) | RT+UT (Veh/Hr) |
|-------------------------|--------------|-------------|----------------|
| Hollinsworth Road - WB  | 163+39 = 202 | 263         | -              |
| Hollinsworth Road - EB  | -            | 407         | 18+4=22        |
| Ahmadiyya Crescent - NB | 9+4=13       | -           | 59+39=98       |

*Table 34 20 Year Proposed PM Turning Movement Count– Hollinsworth Road / Ahmadiyya Crescent*

| Road                    | LT (Veh/Hr) | Th (Veh/Hr) | RT +UT (Veh/Hr) |
|-------------------------|-------------|-------------|-----------------|
| Hollinsworth Road - WB  | 64+32=96    | 305         | -               |
| Hollinsworth Road - EB  | -           | 315         | 12+4=16         |
| Ahmadiyya Crescent - NB | 9+4=13      | -           | 168+32=200      |

*Table 35 20 Year Proposed AM Turning Movement Count- Hollinsworth Road / Chifley Glade / Bells Glade*

|                        | Th (Veh/Hr) | LT (Veh/Hr) | RT+UT (Veh/Hr) |
|------------------------|-------------|-------------|----------------|
| Hollinsworth Road - WB | 211         | 230+24=254  | 187            |
| Hollinsworth Road - EB | 21+2=23     | 177+24=201  | 256+17=273     |
| Chifley Glade - NB     | 242+18=260  | 82          | 177            |
| Bells Glade - SB       | 40          | 33          | 19+3=22        |



Table 36 20 Year Proposed PM Turning Movement Count- Hollinsworth Road / Chifley Glade / Bells Glade

| Road                   | LT (Veh/Hr) | Th (Veh/Hr) | RT+UT (Veh/Hr) |
|------------------------|-------------|-------------|----------------|
| Hollinsworth Road - WB | 276         | 89+20=109   | 141            |
| Hollinsworth Road - EB | 43+2=45     | 247+20=267  | 257+14=271     |
| Chifley Glade - NB     | 260+15=275  | 196         | 553            |
| Bell's Glade - SB      | 131         | 83          | 39+2=41        |

The results of the SIDRA analysis for the 20 year traffic analysis are provided in Tables 37 and 38 for Hollinsworth Road / Ahmadiyya Crescent and Hollinsworth Road / Chifley Glade / Bells Glade intersection. Refer to Appendix D for the full SIDRA output.

Table 37 Future Intersection Operational Performance (Based on full Master Plan development in Year 20) – Hollinsworth Road / Ahmadiyya Crescent

| Intersection                              | Peak Period                        | Average Delay <sup>1</sup> (sec) | Level of Service <sup>2</sup>      | Degree of Saturation <sup>3</sup> |
|-------------------------------------------|------------------------------------|----------------------------------|------------------------------------|-----------------------------------|
| Hollinsworth Road with Ahmadiyya Crescent | AM                                 | 3.3                              | A                                  | 0.209                             |
|                                           | PM                                 | 4.6                              | A                                  | 0.560                             |
| Intersection                              | Level of Service (AM) <sup>2</sup> |                                  | Level of Service (PM) <sup>2</sup> |                                   |
| Hollinsworth Road - WB                    | A                                  |                                  | A                                  |                                   |
| Hollinsworth Road - EB                    | A                                  |                                  | A                                  |                                   |
| Ahmadiyya Crescent - NB                   | A                                  |                                  | A                                  |                                   |

Table 38 Future (Year 20) Intersection Operational Performance – Hollinsworth Road / Chifley Glade / Bells Glade from Master Plan Development

| Intersection                                         | Peak Period                        | Average Delay <sup>1</sup> (sec) | Level of Service <sup>2</sup>      | Degree of Saturation <sup>3</sup> |
|------------------------------------------------------|------------------------------------|----------------------------------|------------------------------------|-----------------------------------|
| Hollinsworth Road with Chifley Glade and Bells Glade | AM                                 | 7.7                              | A                                  | 0.304                             |
|                                                      | PM                                 | 9.2                              | A                                  | 0.646                             |
| Intersection                                         | Level of Service (AM) <sup>2</sup> |                                  | Level of Service (PM) <sup>2</sup> |                                   |
| Hollinsworth Road - WB                               | A                                  |                                  | A                                  |                                   |
| Hollinsworth Road - EB                               | A                                  |                                  | A                                  |                                   |
| Chifley Glade                                        | A                                  |                                  | A                                  |                                   |
| Bells Glade                                          | A                                  |                                  | A                                  |                                   |

Notes:

1. The average delay for sign controlled intersections is selected from the movement with the highest average delay.
2. The level of service for sign controlled intersections is based on the highest average delay per vehicle for the most critical movement during peak conditions.
3. The Degree of Saturation is defined as the ratio of the arrival flow (demand) to the capacity of each approach.

The results of the SIDRA analysis indicate that the post development operations at Year 20 of the above intersections are at a satisfactory level of service. As such, it can be concluded that the proposed development will not have an adverse impact on the operation of traffic on the road network in the vicinity of the proposed development site.

## 7 Future Road Hierarchy and Traffic Volumes

The future regional road network hierarchy and traffic volumes for major roads both internal and external to the precinct was determined as part of the ARUP study for the Marsden Park Industrial (Employment) Precinct, based on the results of the year 2036 NETANAL traffic model for the precinct which was developed by Glen Varley of Road Delay Solutions Pty Ltd in an interactive manner with the precinct masterplan road network.

These future “full development” precinct road network daily traffic volumes for the year 2036 was used to determine both the internal and external future precinct road hierarchy in the Growth Centres Commission Development Code.

As such the Transport for NSW has strategized future roadwork development as part of Councils Section 94 Contribution Plan (Now called Section 7.11) and/or has built the road network.

## 8 Future Public Transport, Walking and Cycling Access

For future bus travel, including bus feeder access movement to the rail network, there are three future significant regional bus corridors identified where the future bus passenger demand from the MPIP precinct, in combination with other demand from adjoining precincts, would warrant the development of new bus routes and services, namely

- A new route to and from the East via South Street, to the New Schofields Station and the Rouse Hill Town Centre
- A new route to and from the South East, via Richmond Road, to and from the Blacktown Town Centre and Railway Station
- A new route to and from the South, preferably on a direct future route via Daniels Road, to and from the Mount Druitt Town Centre and Railway Station

## 9 Future Heavy Vehicle Routes and Volumes

On Richmond Road, there are already a high existing proportion of heavy vehicles in the traffic flow which is at least ten percent, based on the results of classified intersection traffic counts undertaken in the year 2007 at the Garfield Road and Richmond Road intersection by Transport for NSW.

In the future with the relatively high levels of employment generating industrial and commercial development which are proposed at Marsden Park and elsewhere in the NW Growth Centre, this high proportion of heavy vehicles in the traffic flow on Richmond Road is anticipated to continue.

Also with respect to the future potential development of any road connection between the Marsden Park Industrial (Employment) Precinct and Luxford Road to the south, the potential daily heavy vehicle traffic movements which could be generated in this direction by the employment precinct would be approximately 530 truck movements daily.

Because the areas surrounding Luxford Road are primarily residential in nature, any future road connection from the Precinct to Luxford Road should be a bus only link with provision for pedestrians and cyclists.

## 10 Future Section 94 Roadworks Plan

The future precinct Section 94 Contributions Plan for road works and traffic management was prepared by the Blacktown City Council based on an agreed schedule of items. Minor roads such as local industrial roads and local residential roads are not generally included in the Section 94 Roadworks Plan. The future alignment and construction of these roads will be in accordance with the alignments to be specified in the precinct DCP (and the ILP Masterplan) but will be subject to the discretion of the individual affected landowners where these roads are not specifically required for access to future development sites.

As part of this planning proposal and Master Plan development it has been demonstrated that there are no implication on the traffic efficiencies in the network, intersections or the road infrastructure. The site has minimal pedestrian or cyclist generations.

## 11 Conclusion

It can be concluded from the Traffic, Parking and Access Assessment study for the Ahmadiyya Muslim Association, Australia that the proposed planning proposal demonstrates the strategic merit as part of the proposal for its Master Plan development based on and including, that:

- the services and infrastructure that are available to meet the demands arising from the planning proposal
- give effect to a relevant local Blacktown City Council Strategic Planning & Infrastructure policies that has been endorsed by the Department or required as part of a regional or district plan or local strategic planning statement
- the existing uses, approved uses, and likely future uses of land at 45 Hollinsworth Road as part of the proposed Master Plan development by Ahmadiyya Muslim Association will have no traffic or access impact on the existing traffic network and on the future network. Detailed traffic modelling has been undertaken to demonstrate the parking and traffic generation from the proposed master plan development on the current network, on the future network both full development at base year and also using a growth rate of 2% for the next 20 years. The results conclude:
  - The Ahmadiyya Muslim Association as part of the proposed Master Plan will built sufficient car park infrastructure. The level of proposed on-site car parking provision is considered to be adequate for the proposed use of the site.
  - The road network, including keys intersections are currently operating at good level of service and in the future will continue to operate at good level of service.
  - The external impact of the traffic generated by the proposal Master Plan is considered to be satisfactory and will remain well within the Environmental capacity of the surrounding streets, with no adverse impacts on the amenity of the area.
  - The subject site is well served by public transport services in the form of buses services.
  - That the current access off Ahmadiyya Crescent (via) Hollinsworth Road is the better and safer arrangement for the Ahmadiyya Muslim Association
- That the SP 2 Road Infrastructure zoning for the access is no longer strategically required and shall be remove from the LEP.



## Appendix A Master Plan



## Appendix B SIDRA Results (Existing Conditions)

### Hollinsworth Road / Ahmadiyya Crescent- AM

#### Existing

#### MOVEMENT SUMMARY

▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Existing AM]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Hollinsworth Road / Ahmadiyya Cr - Existing AM  
Site Category: (None)  
Giveway / Yield (Two-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| South: Ahmadiyya Cr. NB         |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 1                               | L2   | 6            | 0.0  | 0.005     | 4.7           | LOS A            | 0.0               | 0.1        | 0.09         | 0.50                | 0.09             | 46.4          |
| 3                               | R2   | 40           | 0.0  | 0.086     | 9.7           | LOS A            | 0.3               | 2.1        | 0.54         | 0.74                | 0.54             | 44.1          |
| Approach                        |      | 46           | 0.0  | 0.086     | 9.1           | LOS A            | 0.3               | 2.1        | 0.49         | 0.71                | 0.49             | 44.4          |
| East: Hollinsworth Road WB      |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 4                               | L2   | 110          | 0.0  | 0.074     | 4.6           | LOS A            | 0.0               | 0.0        | 0.00         | 0.42                | 0.00             | 47.2          |
| 5                               | T1   | 177          | 0.0  | 0.074     | 0.0           | LOS A            | 0.0               | 0.0        | 0.00         | 0.07                | 0.00             | 49.6          |
| Approach                        |      | 287          | 0.0  | 0.074     | 1.8           | NA               | 0.0               | 0.0        | 0.00         | 0.20                | 0.00             | 48.6          |
| West: Hollinsworth Road EB      |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 11                              | T1   | 274          | 0.0  | 0.070     | 0.0           | LOS A            | 0.0               | 0.0        | 0.00         | 0.00                | 0.00             | 50.0          |
| 12                              | R2   | 12           | 0.0  | 0.011     | 5.6           | LOS A            | 0.0               | 0.3        | 0.36         | 0.52                | 0.36             | 46.1          |
| Approach                        |      | 286          | 0.0  | 0.070     | 0.2           | NA               | 0.0               | 0.3        | 0.01         | 0.02                | 0.01             | 49.8          |
| All Vehicles                    |      | 619          | 0.0  | 0.086     | 1.6           | NA               | 0.3               | 2.1        | 0.04         | 0.16                | 0.04             | 48.8          |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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

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

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

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

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

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

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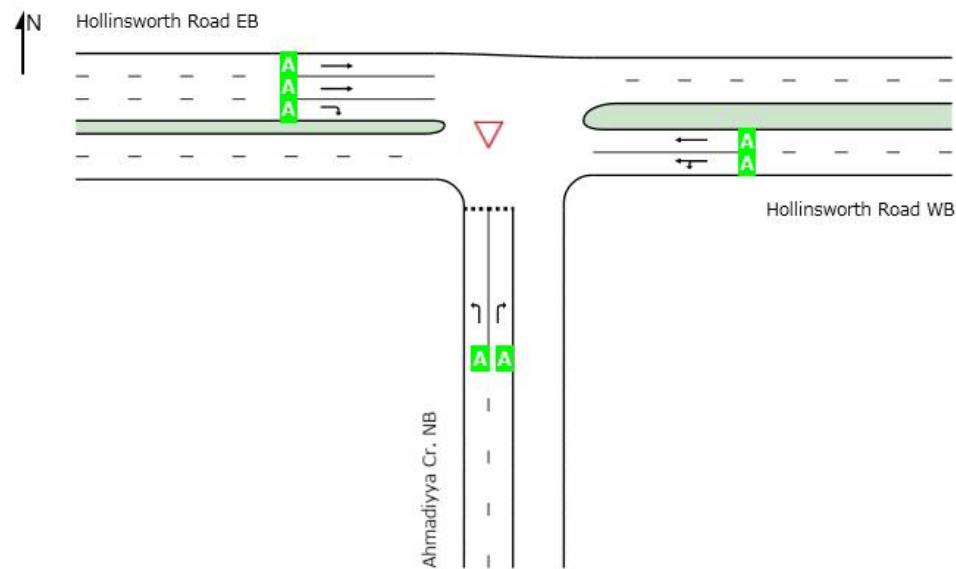
LANE LEVEL OF SERVICE

Lane Level of Service

▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Existing AM]

45 Hollinsworth Road, Marsden Park  
Planning Propsal  
Hollinsworth Road / Ahmadiyya Cr - Existing AM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

|     | Approaches |      |      | Intersection |
|-----|------------|------|------|--------------|
|     | South      | East | West |              |
| LOS | A          | NA   | NA   | NA           |



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
Lane LOS values are based on average delay per lane.  
Minor Road Approach LOS values are based on average delay for all lanes.  
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.  
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

## Hollinsworth Road / Ahmadiyya Crescent- PM

### Existing

#### MOVEMENT SUMMARY

##### ▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Existing PM]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Hollinsworth Road / Ahmadiyya Cr - Existing PM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |      |                                |         |                     |                         |                     |                                      |                        |                 |                        |                     |                          |
|---------------------------------|------|--------------------------------|---------|---------------------|-------------------------|---------------------|--------------------------------------|------------------------|-----------------|------------------------|---------------------|--------------------------|
| Mov ID                          | Turn | Demand Flows<br>Total<br>veh/h | HV<br>% | Deg.<br>Satn<br>v/c | Average<br>Delay<br>sec | Level of<br>Service | 95% Back of Queue<br>Vehicles<br>veh | Queue<br>Distance<br>m | Prop.<br>Queued | Effective<br>Stop Rate | Aver. No.<br>Cycles | Average<br>Speed<br>km/h |
| South: Ahmadiyya Cr. NB         |      |                                |         |                     |                         |                     |                                      |                        |                 |                        |                     |                          |
| 1                               | L2   | 6                              | 0.0     | 0.005               | 4.8                     | LOS A               | 0.0                                  | 0.1                    | 0.16            | 0.49                   | 0.16                | 46.2                     |
| 3                               | R2   | 113                            | 0.0     | 0.218               | 9.3                     | LOS A               | 0.8                                  | 5.8                    | 0.55            | 0.77                   | 0.55                | 44.4                     |
| Approach                        |      | 119                            | 0.0     | 0.218               | 9.0                     | LOS A               | 0.8                                  | 5.8                    | 0.53            | 0.75                   | 0.53                | 44.4                     |
| East: Hollinsworth Road WB      |      |                                |         |                     |                         |                     |                                      |                        |                 |                        |                     |                          |
| 4                               | L2   | 43                             | 0.0     | 0.063               | 4.6                     | LOS A               | 0.0                                  | 0.0                    | 0.00            | 0.19                   | 0.00                | 48.5                     |
| 5                               | T1   | 205                            | 0.0     | 0.063               | 0.0                     | LOS A               | 0.0                                  | 0.0                    | 0.00            | 0.07                   | 0.00                | 49.6                     |
| Approach                        |      | 248                            | 0.0     | 0.063               | 0.8                     | NA                  | 0.0                                  | 0.0                    | 0.00            | 0.09                   | 0.00                | 49.4                     |
| West: Hollinsworth Road EB      |      |                                |         |                     |                         |                     |                                      |                        |                 |                        |                     |                          |
| 11                              | T1   | 212                            | 0.0     | 0.054               | 0.0                     | LOS A               | 0.0                                  | 0.0                    | 0.00            | 0.00                   | 0.00                | 50.0                     |
| 12                              | R2   | 8                              | 0.0     | 0.007               | 5.4                     | LOS A               | 0.0                                  | 0.2                    | 0.33            | 0.50                   | 0.33                | 46.2                     |
| Approach                        |      | 220                            | 0.0     | 0.054               | 0.2                     | NA                  | 0.0                                  | 0.2                    | 0.01            | 0.02                   | 0.01                | 49.8                     |
| All Vehicles                    |      | 587                            | 0.0     | 0.218               | 2.2                     | NA                  | 0.8                                  | 5.8                    | 0.11            | 0.20                   | 0.11                | 48.5                     |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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

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

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

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

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

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

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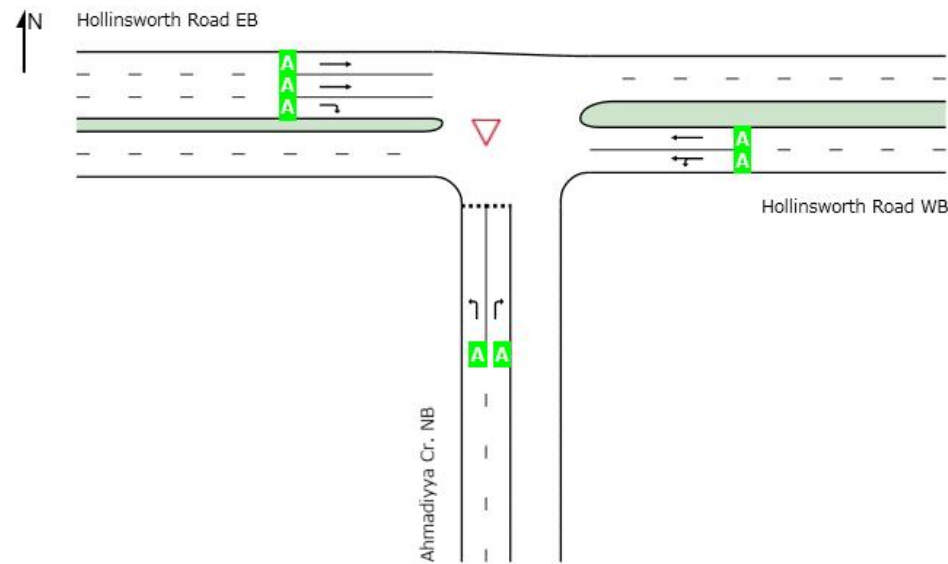
LANE LEVEL OF SERVICE

Lane Level of Service

▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Existing PM]

45 Hollinsworth Road, Marsden Park  
Planning Propsal  
Hollinsworth Road / Ahmadiyya Cr - Existing PM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

|     | Approaches |      |      | Intersection |
|-----|------------|------|------|--------------|
|     | South      | East | West |              |
| LOS | A          | NA   | NA   | NA           |



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
Lane LOS values are based on average delay per lane.  
Minor Road Approach LOS values are based on average delay for all lanes.  
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.  
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

## Hollinsworth Road / Chifley Glade / Bells Glade- AM

### Existing

#### MOVEMENT SUMMARY

 **Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Existing AM]**

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Site Category: (None)  
Roundabout

| Movement Performance - Vehicles |      |                                |         |                  |                         |                     |                                      |               |                 |                        |                     |                          |
|---------------------------------|------|--------------------------------|---------|------------------|-------------------------|---------------------|--------------------------------------|---------------|-----------------|------------------------|---------------------|--------------------------|
| Mov ID                          | Turn | Demand Flows<br>Total<br>veh/h | HV<br>% | Deg. Satn<br>v/c | Average<br>Delay<br>sec | Level of<br>Service | 95% Back of Queue<br>Vehicles<br>veh | Distance<br>m | Prop.<br>Queued | Effective<br>Stop Rate | Aver. No.<br>Cycles | Average<br>Speed<br>km/h |
| South: Chifley Glade : South    |      |                                |         |                  |                         |                     |                                      |               |                 |                        |                     |                          |
| 1                               | L2   | 163                            | 0.0     | 0.149            | 5.8                     | LOS A               | 0.6                                  | 4.5           | 0.39            | 0.60                   | 0.39                | 53.0                     |
| 2                               | T1   | 55                             | 0.0     | 0.152            | 5.7                     | LOS A               | 0.7                                  | 4.7           | 0.38            | 0.65                   | 0.38                | 52.7                     |
| 3                               | R2   | 119                            | 0.0     | 0.152            | 9.3                     | LOS A               | 0.7                                  | 4.7           | 0.38            | 0.65                   | 0.38                | 52.4                     |
| Approach                        |      | 337                            | 0.0     | 0.152            | 7.0                     | LOS A               | 0.7                                  | 4.7           | 0.38            | 0.63                   | 0.38                | 52.7                     |
| East: Hollinsworth Road: East   |      |                                |         |                  |                         |                     |                                      |               |                 |                        |                     |                          |
| 4                               | L2   | 142                            | 0.0     | 0.179            | 5.6                     | LOS A               | 0.9                                  | 6.0           | 0.35            | 0.55                   | 0.35                | 53.1                     |
| 5                               | T1   | 155                            | 0.0     | 0.179            | 5.5                     | LOS A               | 0.9                                  | 6.0           | 0.35            | 0.59                   | 0.35                | 53.7                     |
| 6                               | R2   | 126                            | 0.0     | 0.179            | 9.2                     | LOS A               | 0.9                                  | 6.0           | 0.35            | 0.62                   | 0.35                | 52.7                     |
| Approach                        |      | 423                            | 0.0     | 0.179            | 6.6                     | LOS A               | 0.9                                  | 6.0           | 0.35            | 0.58                   | 0.35                | 53.2                     |
| North: Bells Glade: North       |      |                                |         |                  |                         |                     |                                      |               |                 |                        |                     |                          |
| 7                               | L2   | 27                             | 0.0     | 0.061            | 5.6                     | LOS A               | 0.2                                  | 1.2           | 0.30            | 0.60                   | 0.30                | 52.8                     |
| 8                               | T1   | 22                             | 0.0     | 0.061            | 5.5                     | LOS A               | 0.2                                  | 1.2           | 0.30            | 0.60                   | 0.30                | 54.1                     |
| 9                               | R2   | 13                             | 0.0     | 0.061            | 9.2                     | LOS A               | 0.2                                  | 1.2           | 0.30            | 0.60                   | 0.30                | 53.8                     |
| Approach                        |      | 62                             | 0.0     | 0.061            | 6.3                     | LOS A               | 0.2                                  | 1.2           | 0.30            | 0.60                   | 0.30                | 53.5                     |
| West: Hollinsworth Road : West  |      |                                |         |                  |                         |                     |                                      |               |                 |                        |                     |                          |
| 10                              | L2   | 14                             | 0.0     | 0.126            | 5.9                     | LOS A               | 0.5                                  | 3.5           | 0.37            | 0.56                   | 0.37                | 52.9                     |
| 11                              | T1   | 119                            | 0.0     | 0.126            | 5.7                     | LOS A               | 0.5                                  | 3.5           | 0.37            | 0.56                   | 0.37                | 54.2                     |
| 12                              | R2   | 172                            | 0.0     | 0.150            | 9.3                     | LOS A               | 0.6                                  | 4.3           | 0.37            | 0.68                   | 0.37                | 51.6                     |
| Approach                        |      | 305                            | 0.0     | 0.150            | 7.8                     | LOS A               | 0.6                                  | 4.3           | 0.37            | 0.63                   | 0.37                | 52.7                     |
| All Vehicles                    |      | 1127                           | 0.0     | 0.179            | 7.0                     | LOS A               | 0.9                                  | 6.0           | 0.36            | 0.61                   | 0.36                | 52.9                     |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

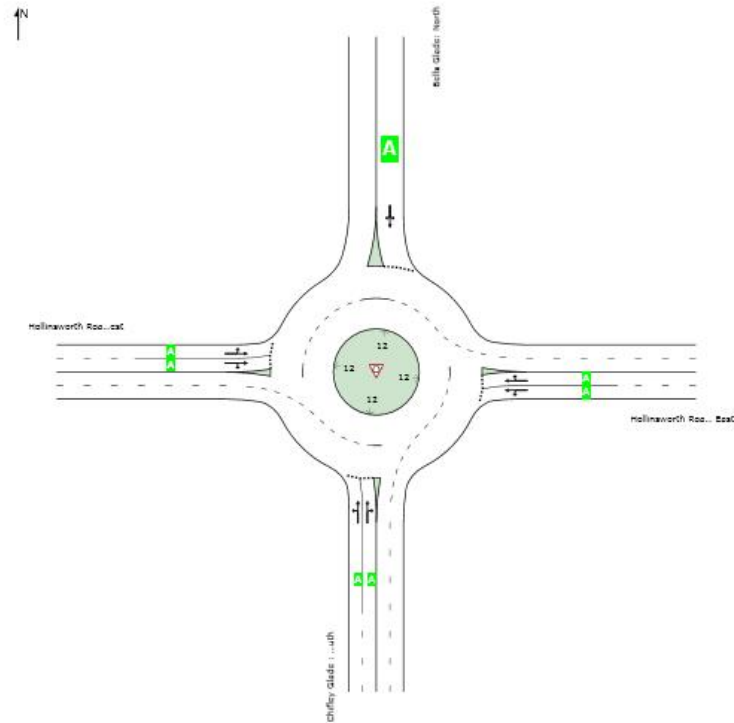
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Level of Service

Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Existing AM]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Site Category: (None)  
Roundabout

|     | Approaches |      |       |      | Intersection |
|-----|------------|------|-------|------|--------------|
|     | South      | East | North | West |              |
| LOS | A          | A    | A     | A    | A            |



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
Roundabout LOS Method: SIDRA Roundabout LOS.  
Lane LOS values are based on average delay per lane.  
Intersection and Approach LOS values are based on average delay for all lanes.  
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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## LANE LEVEL OF SERVICE

### Lane Level of Service

 **Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Existing AM]**

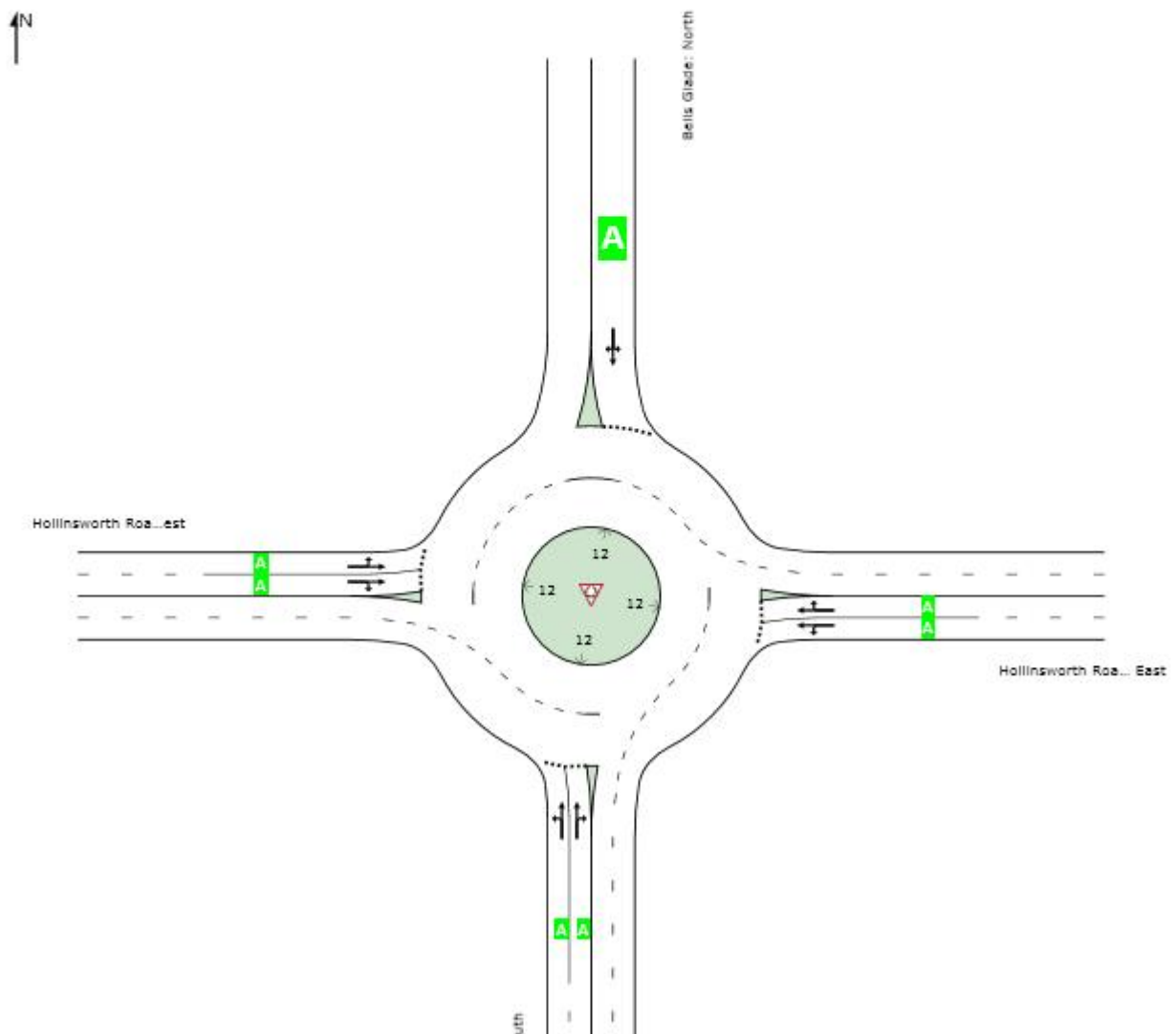
45 Hollinsworth Road, Marsden Park

Planning Proposal

Site Category: (None)

Roundabout

|     | Approaches |      |       |      | Intersection |
|-----|------------|------|-------|------|--------------|
|     | South      | East | North | West |              |
| LOS | A          | A    | A     | A    | A            |





## Hollinsworth Road / Chifley Glade / Bells Glade- PM

### Existing

#### LANE SUMMARY

 **Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Existing PM]**

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Site Category: (None)  
Roundabout

| Lane Use and Performance       |                          |                  |               |                     |                    |                         |                     |                          |                    |                |                     |                   |                      |
|--------------------------------|--------------------------|------------------|---------------|---------------------|--------------------|-------------------------|---------------------|--------------------------|--------------------|----------------|---------------------|-------------------|----------------------|
|                                | Demand<br>Total<br>veh/h | Flows<br>HV<br>% | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Average<br>Delay<br>sec | Level of<br>Service | 95% Back of Queue<br>Veh | Queue<br>Dist<br>m | Lane<br>Config | Lane<br>Length<br>m | Cap.<br>Adj.<br>% | Prob.<br>Block.<br>% |
| South: Chifley Glade : South   |                          |                  |               |                     |                    |                         |                     |                          |                    |                |                     |                   |                      |
| Lane 1                         | 175                      | 0.0              | 868           | 0.202               | 51 <sup>5</sup>    | 6.0                     | LOS A               | 0.9                      | 6.5                | Full           | 500                 | 0.0               | 0.0                  |
| Lane 2 <sup>d</sup>            | 504                      | 0.0              | 1269          | 0.397               | 100                | 8.2                     | LOS A               | 2.4                      | 16.6               | Full           | 500                 | 0.0               | 0.0                  |
| Approach                       | 679                      | 0.0              |               | 0.397               |                    | 7.7                     | LOS A               | 2.4                      | 16.6               |                |                     |                   |                      |
| East: Hollinsworth Road: East  |                          |                  |               |                     |                    |                         |                     |                          |                    |                |                     |                   |                      |
| Lane 1 <sup>d</sup>            | 186                      | 0.0              | 1149          | 0.162               | 100                | 5.8                     | LOS A               | 0.8                      | 5.5                | Full           | 500                 | 0.0               | 0.0                  |
| Lane 2                         | 155                      | 0.0              | 1079          | 0.144               | 89 <sup>5</sup>    | 8.0                     | LOS A               | 0.7                      | 4.7                | Full           | 500                 | 0.0               | 0.0                  |
| Approach                       | 341                      | 0.0              |               | 0.162               |                    | 6.8                     | LOS A               | 0.8                      | 5.5                |                |                     |                   |                      |
| North: Bells Glade: North      |                          |                  |               |                     |                    |                         |                     |                          |                    |                |                     |                   |                      |
| Lane 1 <sup>d</sup>            | 170                      | 0.0              | 872           | 0.195               | 100                | 7.2                     | LOS A               | 0.7                      | 4.8                | Full           | 500                 | 0.0               | 0.0                  |
| Approach                       | 170                      | 0.0              |               | 0.195               |                    | 7.2                     | LOS A               | 0.7                      | 4.8                |                |                     |                   |                      |
| West: Hollinsworth Road : West |                          |                  |               |                     |                    |                         |                     |                          |                    |                |                     |                   |                      |
| Lane 1 <sup>d</sup>            | 191                      | 0.0              | 956           | 0.200               | 100                | 6.8                     | LOS A               | 1.0                      | 6.7                | Full           | 500                 | 0.0               | 0.0                  |
| Lane 2                         | 177                      | 0.0              | 886           | 0.200               | 100                | 10.6                    | LOS B               | 0.9                      | 6.5                | Full           | 500                 | 0.0               | 0.0                  |
| Approach                       | 368                      | 0.0              |               | 0.200               |                    | 8.6                     | LOS A               | 1.0                      | 6.7                |                |                     |                   |                      |
| Intersection                   | 1558                     | 0.0              |               | 0.397               |                    | 7.6                     | LOS A               | 2.4                      | 16.6               |                |                     |                   |                      |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

<sup>5</sup> Lane under-utilisation found by the program

<sup>d</sup> Dominant lane on roundabout approach

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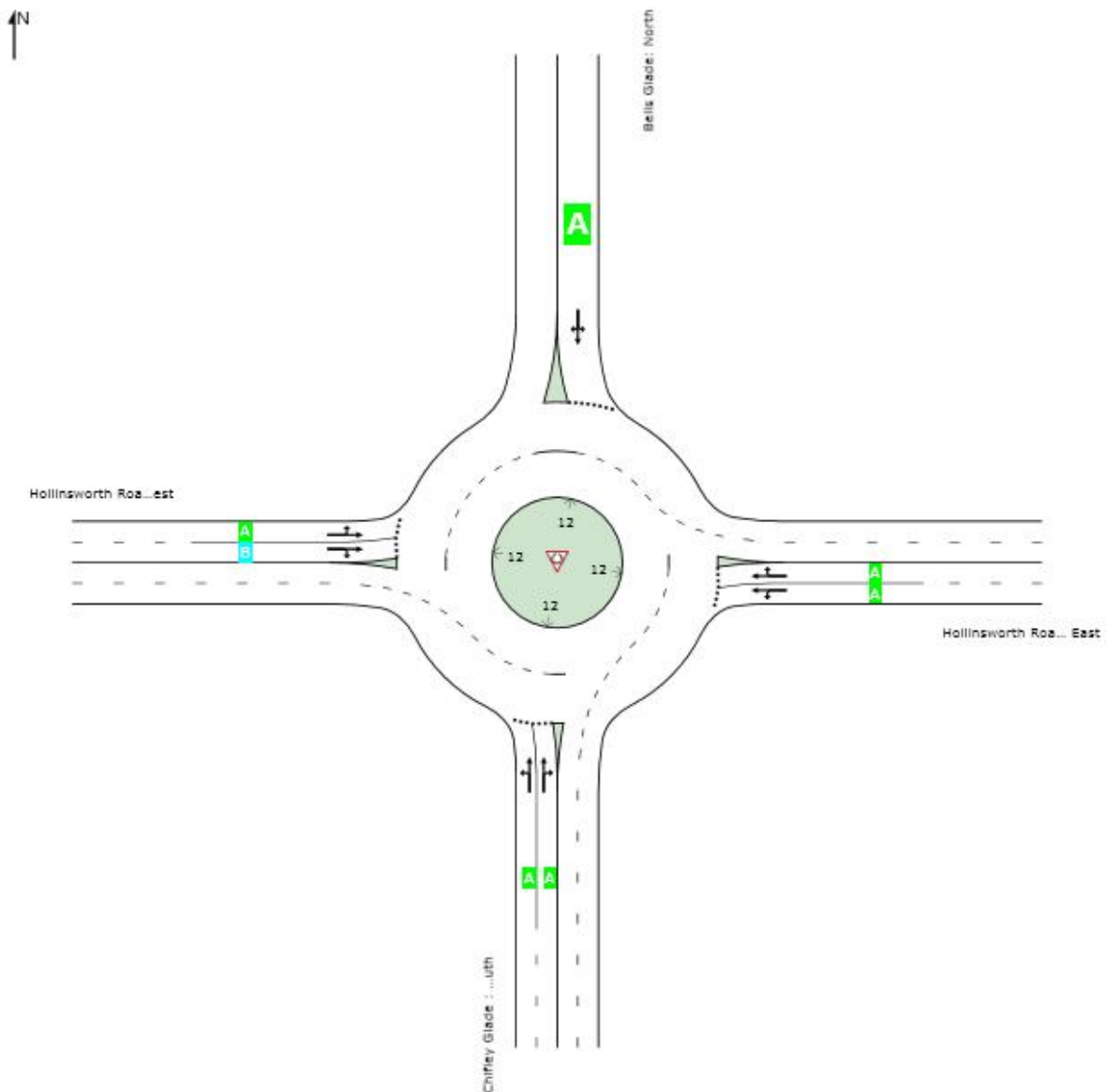
Project: E:\Multipro\Job124 45 Hollinsworth Road, Marsden Park\Planning Proposal\SIDRA\31102019\45 Hollinsworth Road, Marsden Park Planning Proposal Existing

Conditions Hollinsworth Road Chifley Glade Bells Glade.sip8

**Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Existing PM]**

45 Hollinsworth Road, Marsden Park  
 Planning Proposal  
 Site Category: (None)  
 Roundabout

|     | Approaches |      |       |      | Intersection |
|-----|------------|------|-------|------|--------------|
|     | South      | East | North | West |              |
| LOS | A          | A    | A     | A    | A            |



## Appendix C SIDRA Results (Future Conditions)

### Hollinsworth Road / Ahmadiyya Crescent- Future AM

#### Future

### MOVEMENT SUMMARY

#### ▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Proposed Future AM]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Hollinsworth Road / Ahmadiyya Cr - Proposed Future AM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |      |                                |         |                     |                         |                     |                                      |                        |                 |                        |                     |                          |
|---------------------------------|------|--------------------------------|---------|---------------------|-------------------------|---------------------|--------------------------------------|------------------------|-----------------|------------------------|---------------------|--------------------------|
| Mov ID                          | Turn | Demand Flows<br>Total<br>veh/h | HV<br>% | Deg.<br>Satn<br>v/c | Average<br>Delay<br>sec | Level of<br>Service | 95% Back of Queue<br>Vehicles<br>veh | Queue<br>Distance<br>m | Prop.<br>Queued | Effective<br>Stop Rate | Aver. No.<br>Cycles | Average<br>Speed<br>km/h |
| South: Ahmadiyya Cr. NB         |      |                                |         |                     |                         |                     |                                      |                        |                 |                        |                     |                          |
| 1                               | L2   | 10                             | 0.0     | 0.004               | 7.7                     | LOS A               | 0.0                                  | 0.2                    | 0.15            | 0.89                   | 0.15                | 45.0                     |
| 3                               | R2   | 79                             | 0.0     | 0.109               | 15.0                    | LOS C               | 0.7                                  | 5.1                    | 0.61            | 1.00                   | 0.61                | 43.3                     |
| Approach                        |      | 89                             | 0.0     | 0.109               | 14.2                    | LOS B               | 0.7                                  | 5.1                    | 0.56            | 0.99                   | 0.56                | 43.5                     |
| East: Hollinsworth Road WB      |      |                                |         |                     |                         |                     |                                      |                        |                 |                        |                     |                          |
| 4                               | L2   | 149                            | 0.0     | 0.055               | 4.6                     | LOS A               | 0.0                                  | 0.0                    | 0.00            | 0.37                   | 0.00                | 47.9                     |
| 5                               | T1   | 177                            | 0.0     | 0.055               | 0.0                     | LOS A               | 0.0                                  | 0.0                    | 0.00            | 0.14                   | 0.00                | 49.3                     |
| Approach                        |      | 326                            | 0.0     | 0.055               | 2.1                     | NA                  | 0.0                                  | 0.0                    | 0.00            | 0.25                   | 0.00                | 48.7                     |
| West: Hollinsworth Road EB      |      |                                |         |                     |                         |                     |                                      |                        |                 |                        |                     |                          |
| 11                              | T1   | 274                            | 0.0     | 0.053               | 0.0                     | LOS A               | 0.0                                  | 0.0                    | 0.00            | 0.00                   | 0.00                | 50.0                     |
| 12                              | R2   | 16                             | 0.0     | 0.008               | 5.8                     | LOS A               | 0.1                                  | 0.4                    | 0.38            | 0.52                   | 0.38                | 46.1                     |
| Approach                        |      | 290                            | 0.0     | 0.053               | 0.3                     | NA                  | 0.1                                  | 0.4                    | 0.02            | 0.03                   | 0.02                | 49.8                     |
| All Vehicles                    |      | 705                            | 0.0     | 0.109               | 2.9                     | NA                  | 0.7                                  | 5.1                    | 0.08            | 0.25                   | 0.08                | 48.4                     |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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

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

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

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

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

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

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Project: E:\Multipro\Job124 45 Hollinsworth Road, Marsden Park\Planning Proposal\SIDRA\31102019\45 Hollinsworth Road, Marsden Park Planning Proposal Existing Conditions.sip8

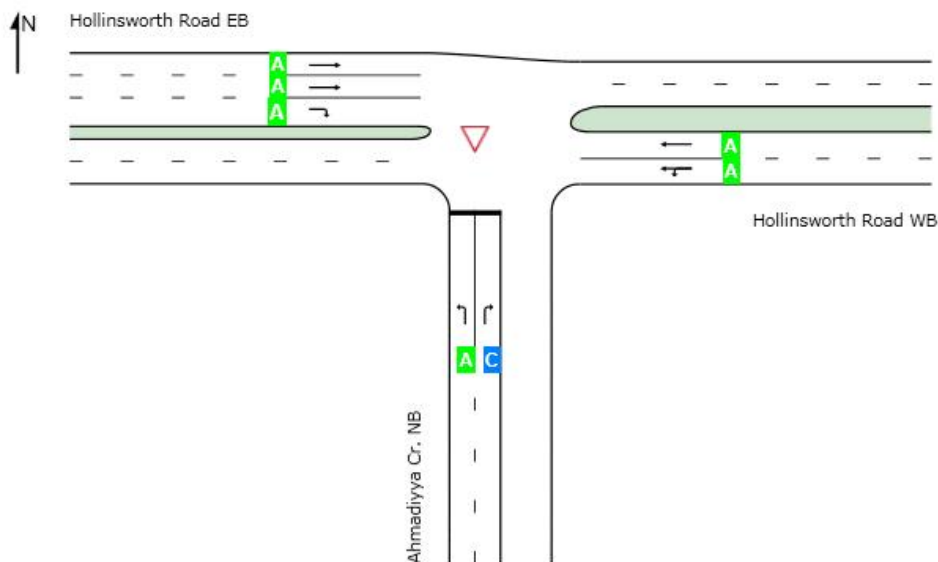
## LANE LEVEL OF SERVICE

### Lane Level of Service

▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Proposed Future AM]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Hollinsworth Road / Ahmadiyya Cr - Proposed Future AM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

|     | Approaches |      |      | Intersection |
|-----|------------|------|------|--------------|
|     | South      | East | West |              |
| LOS | B          | NA   | NA   | NA           |



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

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

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

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

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## Hollinsworth Road / Ahmadiyya Crescent- Future PM

### Proposed

#### MOVEMENT SUMMARY

▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Proposed Future PM ]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Hollinsworth Road / Ahmadiyya Cr - Future PM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |          |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|----------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | Distance | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | veh               | m        |              |                     |                  | km/h          |
| South: Ahmadiyya Cr. NB         |      |              |      |           |               |                  |                   |          |              |                     |                  |               |
| 1                               | L2   | 10           | 0.0  | 0.008     | 4.8           | LOS A            | 0.0               | 0.2      | 0.14         | 0.50                | 0.14             | 46.3          |
| 3                               | R2   | 145          | 0.0  | 0.289     | 10.2          | LOS B            | 1.2               | 8.7      | 0.58         | 0.82                | 0.65             | 43.8          |
| Approach                        |      | 155          | 0.0  | 0.289     | 9.9           | LOS A            | 1.2               | 8.7      | 0.55         | 0.80                | 0.62             | 44.0          |
| East: Hollinsworth Road WB      |      |              |      |           |               |                  |                   |          |              |                     |                  |               |
| 4                               | L2   | 75           | 0.0  | 0.072     | 4.6           | LOS A            | 0.0               | 0.0      | 0.00         | 0.29                | 0.00             | 47.9          |
| 5                               | T1   | 205          | 0.0  | 0.072     | 0.0           | LOS A            | 0.0               | 0.0      | 0.00         | 0.09                | 0.00             | 49.5          |
| Approach                        |      | 280          | 0.0  | 0.072     | 1.2           | NA               | 0.0               | 0.0      | 0.00         | 0.14                | 0.00             | 49.0          |
| West: Hollinsworth Road EB      |      |              |      |           |               |                  |                   |          |              |                     |                  |               |
| 11                              | T1   | 212          | 0.0  | 0.054     | 0.0           | LOS A            | 0.0               | 0.0      | 0.00         | 0.00                | 0.00             | 50.0          |
| 12                              | R2   | 12           | 0.0  | 0.011     | 5.6           | LOS A            | 0.0               | 0.3      | 0.35         | 0.52                | 0.35             | 46.1          |
| Approach                        |      | 224          | 0.0  | 0.054     | 0.3           | NA               | 0.0               | 0.3      | 0.02         | 0.03                | 0.02             | 49.8          |
| All Vehicles                    |      | 659          | 0.0  | 0.289     | 2.9           | NA               | 1.2               | 8.7      | 0.14         | 0.26                | 0.15             | 48.0          |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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

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

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

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

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

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

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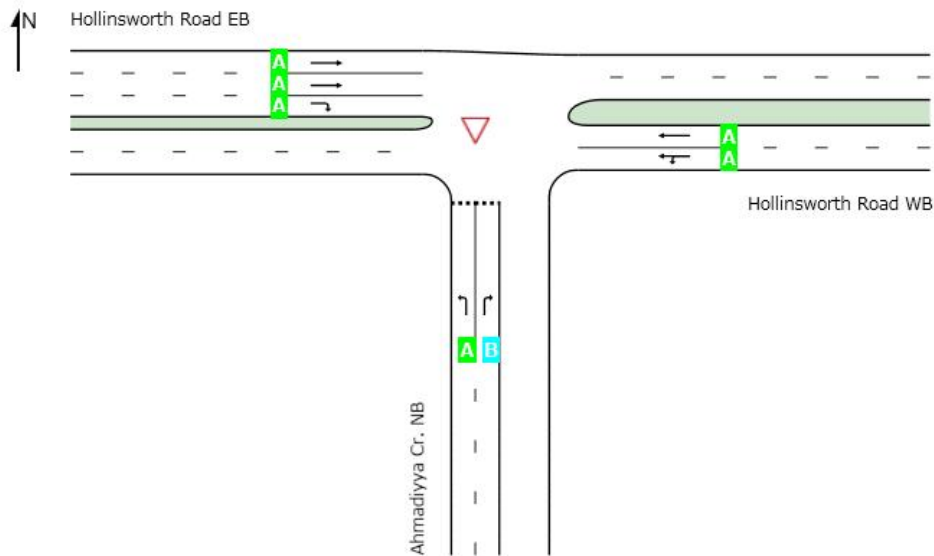
## LANE LEVEL OF SERVICE

### Lane Level of Service

#### ▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Proposed Future PM ]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Hollinsworth Road / Ahmadiyya Cr - Future PM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

|     | Approaches |      |      | Intersection |
|-----|------------|------|------|--------------|
|     | South      | East | West |              |
| LOS | A          | NA   | NA   | NA           |



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

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

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

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

## Hollinsworth Road / Chifley Glade / Bells Glade- AM

### Future Proposal

#### MOVEMENT SUMMARY

 **Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Proposed AM ]**

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Site Category: (None)  
Roundabout

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Chifley Glade : South    |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 181                | 0.0        | 0.161         | 5.8               | LOS A            | 0.7                            | 4.9        | 0.40         | 0.61                | 0.40             | 53.0               |
| 2                               | T1   | 55                 | 0.0        | 0.161         | 5.8               | LOS A            | 0.7                            | 4.9        | 0.41         | 0.67                | 0.41             | 52.6               |
| 3                               | R2   | 119                | 0.0        | 0.161         | 9.5               | LOS A            | 0.7                            | 4.9        | 0.41         | 0.67                | 0.41             | 52.3               |
| Approach                        |      | 355                | 0.0        | 0.161         | 7.1               | LOS A            | 0.7                            | 4.9        | 0.40         | 0.64                | 0.40             | 52.7               |
| East: Hollinsworth Road: East   |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 4                               | L2   | 142                | 0.0        | 0.192         | 5.7               | LOS A            | 0.9                            | 6.5        | 0.37         | 0.56                | 0.37             | 53.0               |
| 5                               | T1   | 179                | 0.0        | 0.192         | 5.6               | LOS A            | 0.9                            | 6.5        | 0.37         | 0.59                | 0.37             | 53.6               |
| 6                               | R2   | 126                | 0.0        | 0.192         | 9.3               | LOS A            | 0.9                            | 6.5        | 0.37         | 0.62                | 0.37             | 52.7               |
| Approach                        |      | 447                | 0.0        | 0.192         | 6.7               | LOS A            | 0.9                            | 6.5        | 0.37         | 0.59                | 0.37             | 53.2               |
| North: Bells Glade: North       |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 7                               | L2   | 27                 | 0.0        | 0.065         | 5.7               | LOS A            | 0.2                            | 1.3        | 0.32         | 0.62                | 0.32             | 52.6               |
| 8                               | T1   | 22                 | 0.0        | 0.065         | 5.6               | LOS A            | 0.2                            | 1.3        | 0.32         | 0.62                | 0.32             | 54.0               |
| 9                               | R2   | 16                 | 0.0        | 0.065         | 9.3               | LOS A            | 0.2                            | 1.3        | 0.32         | 0.62                | 0.32             | 53.6               |
| Approach                        |      | 65                 | 0.0        | 0.065         | 6.5               | LOS A            | 0.2                            | 1.3        | 0.32         | 0.62                | 0.32             | 53.3               |
| West: Hollinsworth Road : West  |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 16                 | 0.0        | 0.148         | 5.8               | LOS A            | 0.6                            | 4.3        | 0.38         | 0.56                | 0.38             | 52.9               |
| 11                              | T1   | 143                | 0.0        | 0.148         | 5.7               | LOS A            | 0.6                            | 4.3        | 0.38         | 0.56                | 0.38             | 54.2               |
| 12                              | R2   | 189                | 0.0        | 0.165         | 9.3               | LOS A            | 0.7                            | 4.8        | 0.38         | 0.69                | 0.38             | 51.6               |
| Approach                        |      | 348                | 0.0        | 0.165         | 7.7               | LOS A            | 0.7                            | 4.8        | 0.38         | 0.63                | 0.38             | 52.7               |
| All Vehicles                    |      | 1215               | 0.0        | 0.192         | 7.1               | LOS A            | 0.9                            | 6.5        | 0.38         | 0.62                | 0.38             | 52.9               |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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Existing Conditions Hollinsworth Road Chifley Glade Bells Glade.sip8

## LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Proposed AM ]**

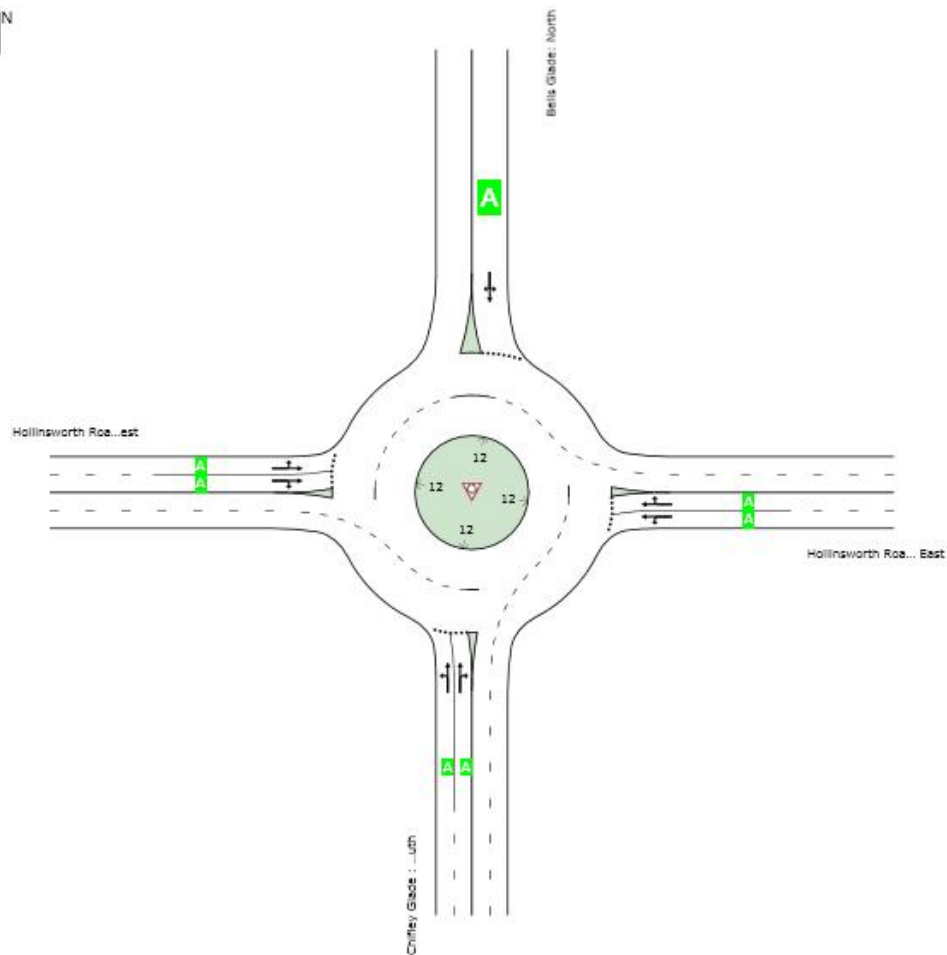
45 Hollinsworth Road, Marsden Park

Planning Proposal

Site Category: (None)

Roundabout

|     | Approaches |      |       |      | Intersection |
|-----|------------|------|-------|------|--------------|
|     | South      | East | North | West |              |
| LOS | A          | A    | A     | A    | A            |





## Hollinsworth Road / Chifley Glade / Bells Glade- PM

### Future Proposal

## LANE SUMMARY

### **Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Proposed PM]**

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Site Category: (None)  
Roundabout

| Lane Use and Performance       |              |     |       |       |                 |         |          |                   |      |        |        |      |        |
|--------------------------------|--------------|-----|-------|-------|-----------------|---------|----------|-------------------|------|--------|--------|------|--------|
|                                | Demand Flows |     |       | Deg.  | Lane            | Average | Level of | 95% Back of Queue |      | Lane   | Lane   | Cap. | Prob.  |
|                                | Total        | HV  | Cap.  | Satn  | Util.           | Delay   | Service  | Veh               | Dist | Config | Length | Adj. | Block. |
|                                | veh/h        | %   | veh/h | v/c   | %               | sec     |          |                   | m    |        | m      | %    | %      |
| South: Chifley Glade : South   |              |     |       |       |                 |         |          |                   |      |        |        |      |        |
| Lane 1                         | 190          | 0.0 | 880   | 0.216 | 53 <sup>5</sup> | 6.1     | LOS A    | 1.0               | 7.1  | Full   | 500    | 0.0  | 0.0    |
| Lane 2 <sup>d</sup>            | 504          | 0.0 | 1240  | 0.406 | 100             | 8.4     | LOS A    | 2.5               | 17.2 | Full   | 500    | 0.0  | 0.0    |
| Approach                       | 694          | 0.0 |       | 0.406 |                 | 7.7     | LOS A    | 2.5               | 17.2 |        |        |      |        |
| East: Hollinsworth Road: East  |              |     |       |       |                 |         |          |                   |      |        |        |      |        |
| Lane 1 <sup>d</sup>            | 186          | 0.0 | 1134  | 0.164 | 100             | 5.8     | LOS A    | 0.8               | 5.6  | Full   | 500    | 0.0  | 0.0    |
| Lane 2                         | 175          | 0.0 | 1091  | 0.160 | 98 <sup>5</sup> | 7.8     | LOS A    | 0.8               | 5.4  | Full   | 500    | 0.0  | 0.0    |
| Approach                       | 361          | 0.0 |       | 0.164 |                 | 6.8     | LOS A    | 0.8               | 5.6  |        |        |      |        |
| North: Bells Glade: North      |              |     |       |       |                 |         |          |                   |      |        |        |      |        |
| Lane 1 <sup>d</sup>            | 172          | 0.0 | 852   | 0.202 | 100             | 7.3     | LOS A    | 0.7               | 5.1  | Full   | 500    | 0.0  | 0.0    |
| Approach                       | 172          | 0.0 |       | 0.202 |                 | 7.3     | LOS A    | 0.7               | 5.1  |        |        |      |        |
| West: Hollinsworth Road : West |              |     |       |       |                 |         |          |                   |      |        |        |      |        |
| Lane 1 <sup>d</sup>            | 210          | 0.0 | 948   | 0.221 | 100             | 6.8     | LOS A    | 1.1               | 7.5  | Full   | 500    | 0.0  | 0.0    |
| Lane 2                         | 194          | 0.0 | 878   | 0.221 | 100             | 10.5    | LOS B    | 1.1               | 7.4  | Full   | 500    | 0.0  | 0.0    |
| Approach                       | 404          | 0.0 |       | 0.221 |                 | 8.6     | LOS A    | 1.1               | 7.5  |        |        |      |        |
| Intersection                   | 1631         | 0.0 |       | 0.406 |                 | 7.7     | LOS A    | 2.5               | 17.2 |        |        |      |        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

<sup>5</sup> Lane under-utilisation found by the program

<sup>d</sup> Dominant lane on roundabout approach

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Existing Conditions Hollinsworth Road Chifley Glade Bells Glade.sip8

## LANE LEVEL OF SERVICE

### Lane Level of Service

 **Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Proposed PM ]**

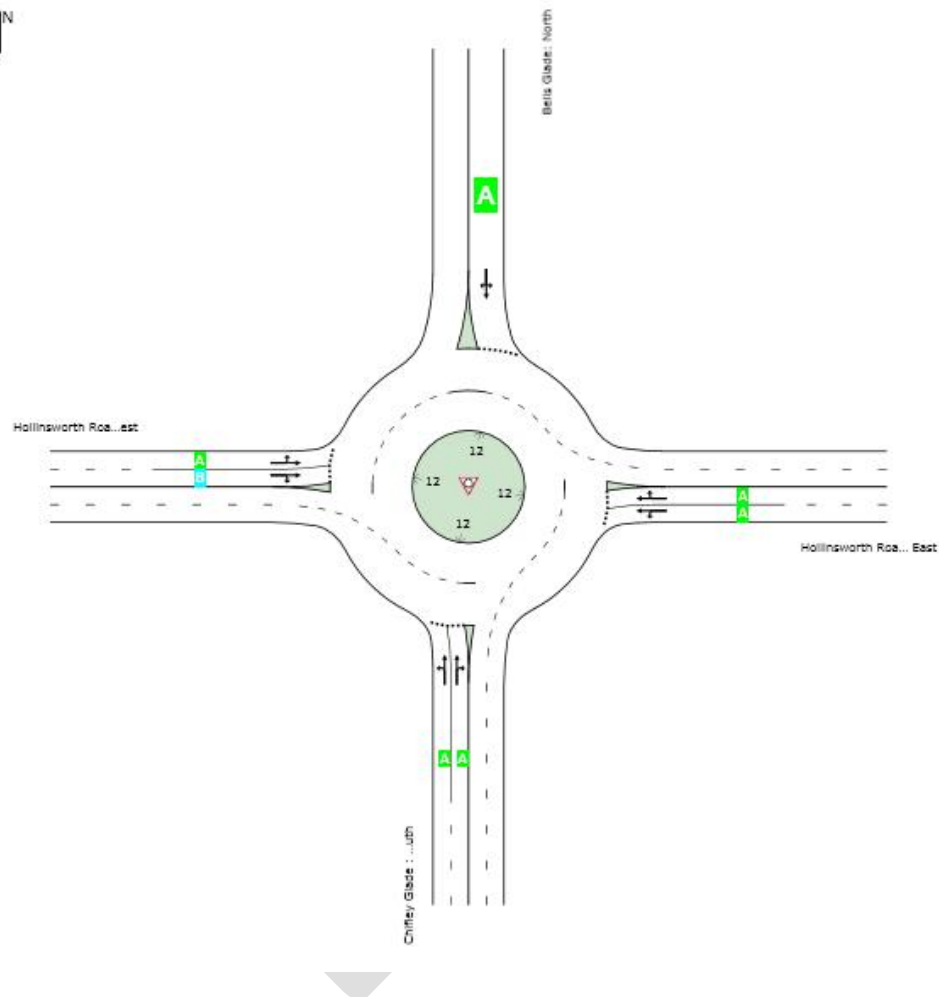
45 Hollinsworth Road, Marsden Park

Planning Proposal

Site Category: (None)

Roundabout

|     | Approaches |      |       |      | Intersection |
|-----|------------|------|-------|------|--------------|
|     | South      | East | North | West |              |
| LOS | A          | A    | A     | A    | A            |



## Appendix D SIDRA Results (20 Year Future Conditions)

### Hollinsworth Road / Ahmadiyya Crescent- 20 Years AM

#### Future

#### MOVEMENT SUMMARY

▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Proposed 20 Yrs Future AM]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Hollinsworth Road / Ahmadiyya Cr - Proposed Future AM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |      |                          |      |               |                   |                  |                                |                  |              |                     |                  |                    |
|---------------------------------|------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Ahmadiyya Cr. NB         |      |                          |      |               |                   |                  |                                |                  |              |                     |                  |                    |
| 1                               | L2   | 13                       | 0.0  | 0.006         | 7.9               | LOS A            | 0.0                            | 0.3              | 0.20         | 0.87                | 0.20             | 45.0               |
| 3                               | R2   | 98                       | 0.0  | 0.209         | 22.3              | LOS C            | 1.4                            | 10.0             | 0.80         | 1.02                | 0.86             | 40.6               |
| Approach                        |      | 111                      | 0.0  | 0.209         | 20.6              | LOS C            | 1.4                            | 10.0             | 0.73         | 1.00                | 0.78             | 41.0               |
| East: Hollinsworth Road WB      |      |                          |      |               |                   |                  |                                |                  |              |                     |                  |                    |
| 4                               | L2   | 202                      | 0.0  | 0.078         | 4.6               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.36                | 0.00             | 48.0               |
| 5                               | T1   | 263                      | 0.0  | 0.078         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.14                | 0.00             | 49.3               |
| Approach                        |      | 465                      | 0.0  | 0.078         | 2.0               | NA               | 0.0                            | 0.0              | 0.00         | 0.23                | 0.00             | 48.7               |
| West: Hollinsworth Road EB      |      |                          |      |               |                   |                  |                                |                  |              |                     |                  |                    |
| 11                              | T1   | 407                      | 0.0  | 0.079         | 0.0               | LOS A            | 0.0                            | 0.0              | 0.00         | 0.00                | 0.00             | 50.0               |
| 12                              | R2   | 22                       | 0.0  | 0.012         | 6.6               | LOS A            | 0.1                            | 0.6              | 0.47         | 0.58                | 0.47             | 45.8               |
| Approach                        |      | 429                      | 0.0  | 0.079         | 0.3               | NA               | 0.1                            | 0.6              | 0.02         | 0.03                | 0.02             | 49.8               |
| All Vehicles                    |      | 1005                     | 0.0  | 0.209         | 3.3               | NA               | 1.4                            | 10.0             | 0.09         | 0.23                | 0.10             | 48.2               |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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

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

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

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

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

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

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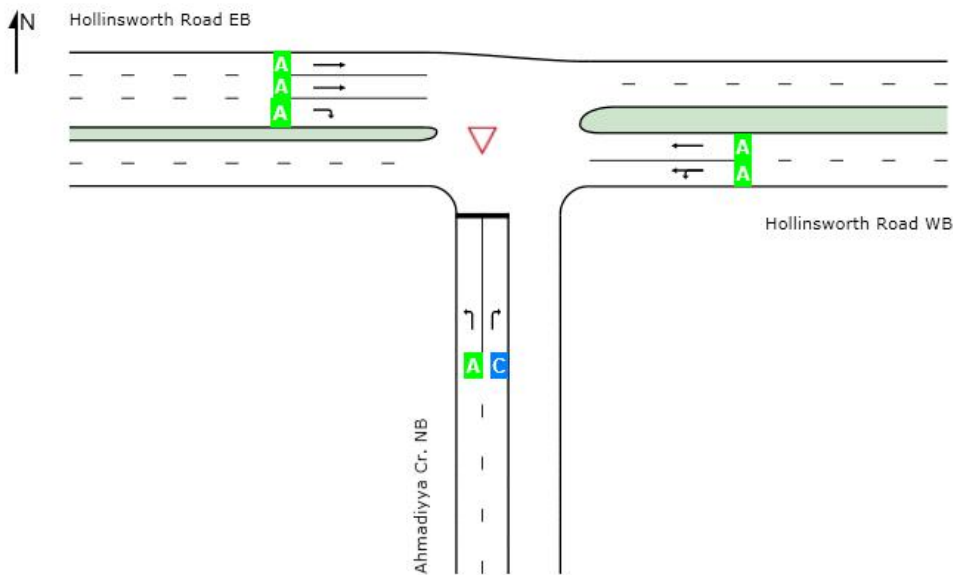
LANE LEVEL OF SERVICE

Lane Level of Service

▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Proposed 20 Yrs Future AM]

45 Hollinsworth Road, Marsden Park  
Planning Propsal  
Hollinsworth Road / Ahmadiyya Cr - Proposed Future AM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

|     | Approaches |      |      | Intersection |
|-----|------------|------|------|--------------|
|     | South      | East | West |              |
| LOS | C          | NA   | NA   | NA           |



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
Lane LOS values are based on average delay per lane.  
Minor Road Approach LOS values are based on average delay for all lanes.  
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.  
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.



## Hollinsworth Road / Ahmadiyya Crescent- 20 Years Future PM

### Proposed

#### MOVEMENT SUMMARY

▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Proposed 20 Yrs Future PM ]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Hollinsworth Road / Ahmadiyya Cr - Future PM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

| Movement Performance - Vehicles |      |                                |         |                     |                         |                     |                                      |               |                 |                        |                     |                          |
|---------------------------------|------|--------------------------------|---------|---------------------|-------------------------|---------------------|--------------------------------------|---------------|-----------------|------------------------|---------------------|--------------------------|
| Mov ID                          | Turn | Demand Flows<br>Total<br>veh/h | HV<br>% | Deg.<br>Satn<br>v/c | Average<br>Delay<br>sec | Level of<br>Service | 95% Back of Queue<br>Vehicles<br>veh | Distance<br>m | Prop.<br>Queued | Effective<br>Stop Rate | Aver. No.<br>Cycles | Average<br>Speed<br>km/h |
| South: Ahmadiyya Cr. NB         |      |                                |         |                     |                         |                     |                                      |               |                 |                        |                     |                          |
| 1                               | L2   | 13                             | 0.0     | 0.011               | 4.9                     | LOS A               | 0.0                                  | 0.3           | 0.19            | 0.50                   | 0.19                | 46.2                     |
| 3                               | R2   | 200                            | 0.0     | 0.560               | 18.7                    | LOS C               | 3.1                                  | 22.0          | 0.79            | 1.07                   | 1.31                | 39.8                     |
| Approach                        |      | 213                            | 0.0     | 0.560               | 17.9                    | LOS C               | 3.1                                  | 22.0          | 0.75            | 1.03                   | 1.24                | 40.2                     |
| East: Hollinsworth Road WB      |      |                                |         |                     |                         |                     |                                      |               |                 |                        |                     |                          |
| 4                               | L2   | 96                             | 0.0     | 0.103               | 4.6                     | LOS A               | 0.0                                  | 0.0           | 0.00            | 0.26                   | 0.00                | 48.1                     |
| 5                               | T1   | 305                            | 0.0     | 0.103               | 0.0                     | LOS A               | 0.0                                  | 0.0           | 0.00            | 0.09                   | 0.00                | 49.5                     |
| Approach                        |      | 401                            | 0.0     | 0.103               | 1.1                     | NA                  | 0.0                                  | 0.0           | 0.00            | 0.13                   | 0.00                | 49.1                     |
| West: Hollinsworth Road EB      |      |                                |         |                     |                         |                     |                                      |               |                 |                        |                     |                          |
| 11                              | T1   | 315                            | 0.0     | 0.080               | 0.0                     | LOS A               | 0.0                                  | 0.0           | 0.00            | 0.00                   | 0.00                | 50.0                     |
| 12                              | R2   | 16                             | 0.0     | 0.017               | 6.2                     | LOS A               | 0.1                                  | 0.4           | 0.43            | 0.56                   | 0.43                | 45.9                     |
| Approach                        |      | 331                            | 0.0     | 0.080               | 0.3                     | NA                  | 0.1                                  | 0.4           | 0.02            | 0.03                   | 0.02                | 49.8                     |
| All Vehicles                    |      | 945                            | 0.0     | 0.560               | 4.6                     | NA                  | 3.1                                  | 22.0          | 0.18            | 0.30                   | 0.29                | 47.0                     |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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

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

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

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

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

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

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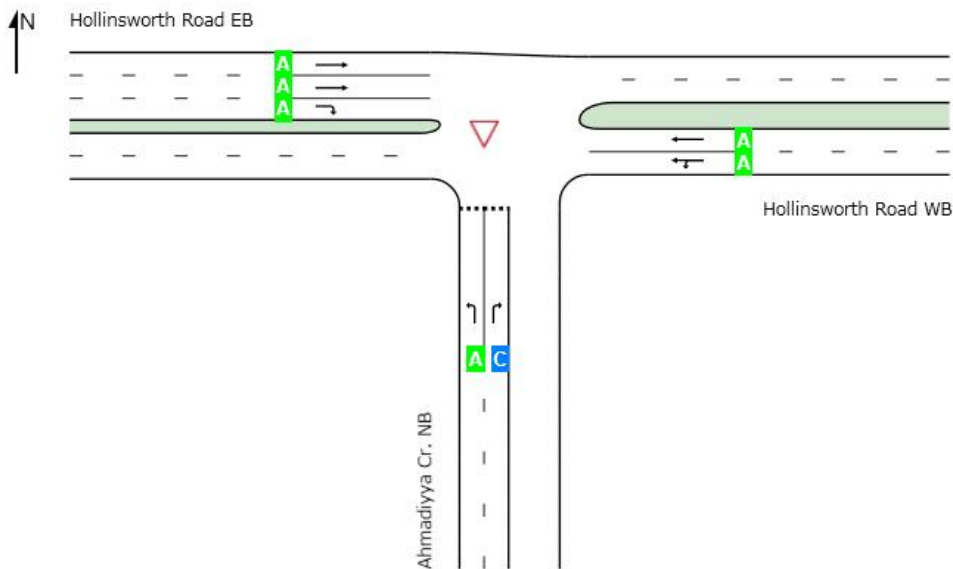
LANE LEVEL OF SERVICE

Lane Level of Service

▽ Site: 101 [Hollinsworth Road / Ahmadiyya Cr - Proposed 20 Yrs Future PM ]

45 Hollinsworth Road, Marsden Park  
Planning Propsal  
Hollinsworth Road / Ahmadiyya Cr - Future PM  
Site Category: (None)  
Giveaway / Yield (Two-Way)

|     | Approaches |      |      | Intersection |
|-----|------------|------|------|--------------|
|     | South      | East | West |              |
| LOS | C          | NA   | NA   | NA           |



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
Lane LOS values are based on average delay per lane.  
Minor Road Approach LOS values are based on average delay for all lanes.  
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.  
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

## Hollinsworth Road / Chifley Glade / Bells Glade- 20 Year AM

### Future 20 Year Proposal

#### MOVEMENT SUMMARY

Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Proposed 20 Yrs Future AM ]

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Site Category: (None)  
Roundabout

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                                      |                        |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|------------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Queue<br>Vehicles<br>veh | Queue<br>Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| South: Chifley Glade : South    |      |                       |               |                  |                      |                  |                                      |                        |              |                     |                  |                       |
| 1                               | L2   | 260                   | 0.0           | 0.253            | 6.4                  | LOS A            | 1.2                                  | 8.5                    | 0.51         | 0.69                | 0.51             | 52.6                  |
| 2                               | T1   | 82                    | 0.0           | 0.264            | 6.4                  | LOS A            | 1.3                                  | 8.9                    | 0.52         | 0.73                | 0.52             | 52.3                  |
| 3                               | R2   | 177                   | 0.0           | 0.264            | 10.1                 | LOS B            | 1.3                                  | 8.9                    | 0.52         | 0.73                | 0.52             | 52.0                  |
| Approach                        |      | 519                   | 0.0           | 0.264            | 7.7                  | LOS A            | 1.3                                  | 8.9                    | 0.52         | 0.71                | 0.52             | 52.4                  |
| East: Hollinsworth Road: East   |      |                       |               |                  |                      |                  |                                      |                        |              |                     |                  |                       |
| 4                               | L2   | 211                   | 0.0           | 0.304            | 6.3                  | LOS A            | 1.7                                  | 11.8                   | 0.49         | 0.63                | 0.49             | 52.6                  |
| 5                               | T1   | 254                   | 0.0           | 0.304            | 6.2                  | LOS A            | 1.7                                  | 11.8                   | 0.50         | 0.66                | 0.50             | 53.2                  |
| 6                               | R2   | 187                   | 0.0           | 0.304            | 9.9                  | LOS A            | 1.7                                  | 11.7                   | 0.50         | 0.68                | 0.50             | 52.3                  |
| Approach                        |      | 652                   | 0.0           | 0.304            | 7.3                  | LOS A            | 1.7                                  | 11.8                   | 0.50         | 0.66                | 0.50             | 52.7                  |
| North: Bells Glade: North       |      |                       |               |                  |                      |                  |                                      |                        |              |                     |                  |                       |
| 7                               | L2   | 40                    | 0.0           | 0.106            | 6.2                  | LOS A            | 0.3                                  | 2.4                    | 0.42         | 0.68                | 0.42             | 52.3                  |
| 8                               | T1   | 33                    | 0.0           | 0.106            | 6.1                  | LOS A            | 0.3                                  | 2.4                    | 0.42         | 0.68                | 0.42             | 53.6                  |
| 9                               | R2   | 22                    | 0.0           | 0.106            | 9.8                  | LOS A            | 0.3                                  | 2.4                    | 0.42         | 0.68                | 0.42             | 53.3                  |
| Approach                        |      | 95                    | 0.0           | 0.106            | 7.0                  | LOS A            | 0.3                                  | 2.4                    | 0.42         | 0.68                | 0.42             | 53.0                  |
| West: Hollinsworth Road : West  |      |                       |               |                  |                      |                  |                                      |                        |              |                     |                  |                       |
| 10                              | L2   | 23                    | 0.0           | 0.232            | 6.5                  | LOS A            | 1.0                                  | 7.1                    | 0.48         | 0.63                | 0.48             | 52.5                  |
| 11                              | T1   | 201                   | 0.0           | 0.232            | 6.3                  | LOS A            | 1.0                                  | 7.1                    | 0.48         | 0.63                | 0.48             | 53.8                  |
| 12                              | R2   | 273                   | 0.0           | 0.259            | 9.8                  | LOS A            | 1.2                                  | 8.2                    | 0.48         | 0.75                | 0.48             | 51.3                  |
| Approach                        |      | 497                   | 0.0           | 0.259            | 8.3                  | LOS A            | 1.2                                  | 8.2                    | 0.48         | 0.70                | 0.48             | 52.3                  |
| All Vehicles                    |      | 1763                  | 0.0           | 0.304            | 7.7                  | LOS A            | 1.7                                  | 11.8                   | 0.49         | 0.68                | 0.49             | 52.5                  |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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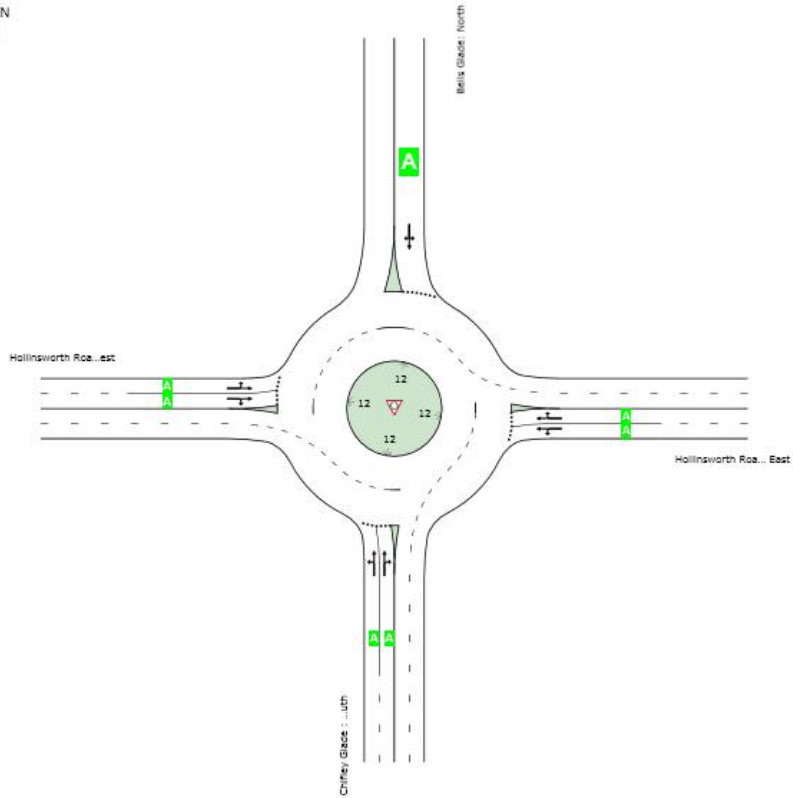
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**Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Proposed 20 Yrs Future AM ]**

45 Hollinsworth Road, Marsden Park  
 Planning Proposal  
 Site Category: (None)  
 Roundabout

|     | Approaches |      |       |      | Intersection |
|-----|------------|------|-------|------|--------------|
|     | South      | East | North | West |              |
| LOS | A          | A    | A     | A    | A            |



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.

## Hollinsworth Road / Chifley Glade / Bells Glade- 20 Year PM

### Future 20 Year Proposal

#### MOVEMENT SUMMARY

 **Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Proposed 20 Yrs PM]**

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Site Category: (None)  
Roundabout

| Movement Performance - Vehicles |      |                                |                  |                  |                         |                     |                                      |               |              |                        |                     |                          |
|---------------------------------|------|--------------------------------|------------------|------------------|-------------------------|---------------------|--------------------------------------|---------------|--------------|------------------------|---------------------|--------------------------|
| Mov ID                          | Turn | Demand Flows<br>Total<br>veh/h | Flows<br>HV<br>% | Deg. Satn<br>v/c | Average<br>Delay<br>sec | Level of<br>Service | 95% Back of Queue<br>Vehicles<br>veh | Distance<br>m | Prop. Queued | Effective<br>Stop Rate | Aver. No.<br>Cycles | Average<br>Speed<br>km/h |
| South: Chifley Glade : South    |      |                                |                  |                  |                         |                     |                                      |               |              |                        |                     |                          |
| 1                               | L2   | 275                            | 0.0              | 0.343            | 7.0                     | LOS A               | 1.8                                  | 12.8          | 0.53         | 0.68                   | 0.53                | 52.6                     |
| 2                               | T1   | 196                            | 0.0              | 0.646            | 7.2                     | LOS A               | 5.9                                  | 41.0          | 0.67         | 0.75                   | 0.71                | 51.6                     |
| 3                               | R2   | 553                            | 0.0              | 0.646            | 10.8                    | LOS B               | 5.9                                  | 41.0          | 0.67         | 0.75                   | 0.71                | 51.3                     |
| Approach                        |      | 1024                           | 0.0              | 0.646            | 9.1                     | LOS A               | 5.9                                  | 41.0          | 0.63         | 0.73                   | 0.66                | 51.7                     |
| East: Hollinsworth Road: East   |      |                                |                  |                  |                         |                     |                                      |               |              |                        |                     |                          |
| 4                               | L2   | 276                            | 0.0              | 0.269            | 6.5                     | LOS A               | 1.5                                  | 10.6          | 0.54         | 0.67                   | 0.54                | 52.6                     |
| 5                               | T1   | 109                            | 0.0              | 0.259            | 6.6                     | LOS A               | 1.4                                  | 9.9           | 0.54         | 0.71                   | 0.54                | 52.4                     |
| 6                               | R2   | 141                            | 0.0              | 0.259            | 10.2                    | LOS B               | 1.4                                  | 9.9           | 0.54         | 0.71                   | 0.54                | 52.1                     |
| Approach                        |      | 526                            | 0.0              | 0.269            | 7.5                     | LOS A               | 1.5                                  | 10.6          | 0.54         | 0.69                   | 0.54                | 52.4                     |
| North: Bells Glade: North       |      |                                |                  |                  |                         |                     |                                      |               |              |                        |                     |                          |
| 7                               | L2   | 131                            | 0.0              | 0.382            | 9.0                     | LOS A               | 1.9                                  | 13.0          | 0.70         | 0.88                   | 0.76                | 50.8                     |
| 8                               | T1   | 83                             | 0.0              | 0.382            | 8.9                     | LOS A               | 1.9                                  | 13.0          | 0.70         | 0.88                   | 0.76                | 52.0                     |
| 9                               | R2   | 41                             | 0.0              | 0.382            | 12.6                    | LOS B               | 1.9                                  | 13.0          | 0.70         | 0.88                   | 0.76                | 51.7                     |
| Approach                        |      | 255                            | 0.0              | 0.382            | 9.6                     | LOS A               | 1.9                                  | 13.0          | 0.70         | 0.88                   | 0.76                | 51.3                     |
| West: Hollinsworth Road : West  |      |                                |                  |                  |                         |                     |                                      |               |              |                        |                     |                          |
| 10                              | L2   | 45                             | 0.0              | 0.423            | 8.9                     | LOS A               | 2.7                                  | 18.9          | 0.79         | 0.90                   | 0.86                | 51.2                     |
| 11                              | T1   | 267                            | 0.0              | 0.423            | 8.8                     | LOS A               | 2.7                                  | 18.9          | 0.79         | 0.90                   | 0.86                | 52.4                     |
| 12                              | R2   | 271                            | 0.0              | 0.423            | 13.1                    | LOS B               | 2.6                                  | 18.2          | 0.79         | 0.96                   | 0.87                | 49.4                     |
| Approach                        |      | 583                            | 0.0              | 0.423            | 10.8                    | LOS B               | 2.7                                  | 18.9          | 0.79         | 0.93                   | 0.86                | 50.9                     |
| All Vehicles                    |      | 2388                           | 0.0              | 0.646            | 9.2                     | LOS A               | 5.9                                  | 41.0          | 0.66         | 0.79                   | 0.70                | 51.6                     |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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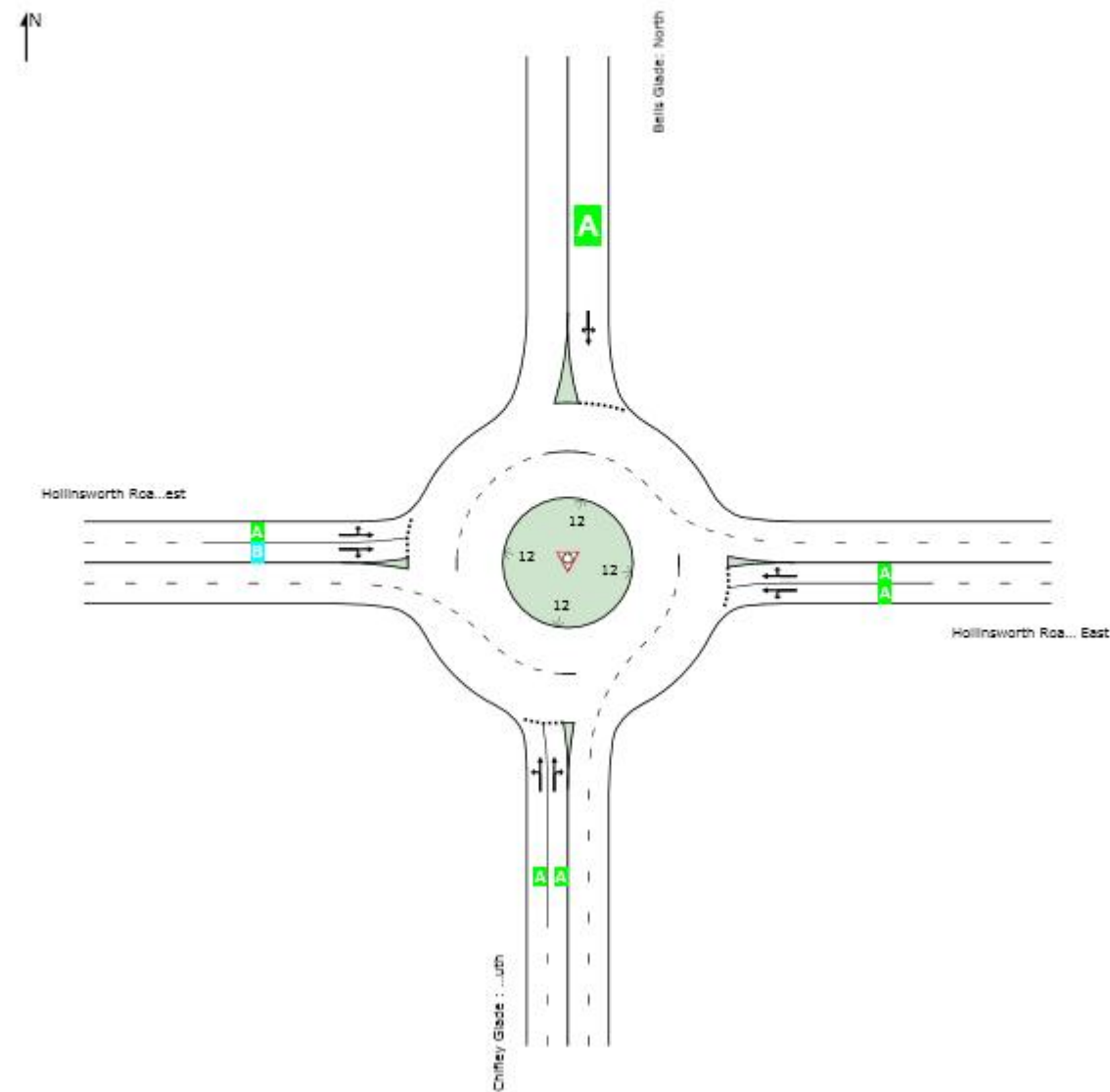
# LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 101 [Hollinsworth Road, Chifley Glade, Bells Glade Proposed 20 Yrs PM]**

45 Hollinsworth Road, Marsden Park  
Planning Proposal  
Site Category: (None)  
Roundabout

|     | Approaches |      |       |      | Intersection |
|-----|------------|------|-------|------|--------------|
|     | South      | East | North | West |              |
| LOS | A          | A    | A     | B    | A            |



## Appendix E Traffic Survey Data

Hollinsworth Road, near Ahmadiyya Crescent, Marsden Park

Job No

N5370 Marsden Park

Client

Multipro Consultants

Site

Hollinsworth Rd

Location

Marsden Park

Site No

1

Start Date

23-Oct-19

Description

Volume Summary

Direction

Combined

Menu

MATRIX

Traffic and Transport Data

| Hour Starting | Day of Week |        |        |        |        |        |        | W'Day Ave | 7 Day Ave |
|---------------|-------------|--------|--------|--------|--------|--------|--------|-----------|-----------|
|               | Mon         | Tue    | Wed    | Thu    | Fri    | Sat    | Sun    |           |           |
|               | 28-Oct      | 29-Oct | 23-Oct | 24-Oct | 25-Oct | 26-Oct | 27-Oct |           |           |
| AM Peak       | 546         | 579    | 602    | 623    | 587    | 385    | 370    |           |           |
| PM Peak       | 715         | 716    | 704    | 756    | 791    | 553    | 453    | 7542      | 6650      |
| 0:00          | 14          | 24     | 19     | 24     | 23     | 29     | 14     | 21        | 21        |
| 1:00          | 25          | 33     | 32     | 36     | 31     | 18     | 18     | 31        | 28        |
| 2:00          | 15          | 28     | 27     | 29     | 18     | 31     | 11     | 23        | 23        |
| 3:00          | 41          | 48     | 58     | 37     | 35     | 29     | 5      | 44        | 36        |
| 4:00          | 46          | 61     | 83     | 66     | 59     | 38     | 15     | 63        | 53        |
| 5:00          | 415         | 461    | 469    | 459    | 472    | 124    | 77     | 455       | 354       |
| 6:00          | 332         | 340    | 353    | 355    | 338    | 104    | 43     | 344       | 266       |
| 7:00          | 465         | 484    | 464    | 487    | 431    | 129    | 86     | 466       | 364       |
| 8:00          | 546         | 579    | 602    | 623    | 587    | 210    | 126    | 587       | 468       |
| 9:00          | 390         | 400    | 399    | 432    | 441    | 265    | 194    | 412       | 360       |
| 10:00         | 394         | 426    | 355    | 403    | 398    | 374    | 363    | 395       | 388       |
| 11:00         | 415         | 405    | 400    | 404    | 398    | 385    | 370    | 404       | 397       |
| 12:00         | 430         | 476    | 430    | 453    | 537    | 553    | 448    | 465       | 475       |
| 13:00         | 505         | 538    | 498    | 471    | 646    | 441    | 407    | 532       | 501       |
| 14:00         | 715         | 716    | 704    | 756    | 791    | 430    | 453    | 736       | 652       |
| 15:00         | 496         | 465    | 502    | 485    | 460    | 354    | 300    | 482       | 437       |
| 16:00         | 519         | 549    | 520    | 550    | 525    | 275    | 329    | 533       | 467       |
| 17:00         | 506         | 537    | 539    | 561    | 514    | 270    | 253    | 531       | 454       |
| 18:00         | 337         | 300    | 313    | 348    | 342    | 225    | 155    | 328       | 289       |
| 19:00         | 212         | 208    | 221    | 256    | 197    | 179    | 143    | 219       | 202       |
| 20:00         | 139         | 135    | 165    | 190    | 183    | 81     | 87     | 162       | 140       |
| 21:00         | 93          | 108    | 92     | 118    | 119    | 132    | 79     | 106       | 106       |
| 22:00         | 132         | 132    | 142    | 117    | 152    | 75     | 48     | 135       | 114       |
| 23:00         | 55          | 66     | 66     | 62     | 84     | 44     | 20     | 67        | 57        |
| Total         | 7237        | 7519   | 7453   | 7722   | 7781   | 4795   | 4044   | 7542      | 6650      |

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 7-19 | 5718 | 5875 | 5726 | 5973 | 6070 | 3911 | 3484 | 5872 | 5251 |
| 6-22 | 6494 | 6666 | 6557 | 6892 | 6907 | 4407 | 3836 | 6703 | 5966 |
| 6-24 | 6681 | 6864 | 6765 | 7071 | 7143 | 4526 | 3904 | 6905 | 6136 |
| 0-24 | 7237 | 7519 | 7453 | 7722 | 7781 | 4795 | 4044 | 7542 | 6650 |



Job No N5370 Marsden Park  
 Client Multipro Consultants  
 Site Hollinsworth Rd  
 Location Marsden Park  
 Site No 1  
 Start Date 23-Oct-19  
 Description Volume Summary  
 Direction EB

Menu



| Hour<br>Starting | Day of Week   |               |               |               |               |               |               | W'Day<br>Ave | 7 Day<br>Ave |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|
|                  | Mon<br>28-Oct | Tue<br>29-Oct | Wed<br>23-Oct | Thu<br>24-Oct | Fri<br>25-Oct | Sat<br>26-Oct | Sun<br>27-Oct |              |              |
| AM Peak          | 267           | 315           | 302           | 322           | 316           | 189           | 185           |              |              |
| PM Peak          | 475           | 474           | 466           | 497           | 530           | 258           | 252           | 3737         | 3315         |
| 0:00             | 7             | 16            | 10            | 15            | 12            | 20            | 4             | 12           | 12           |
| 1:00             | 9             | 16            | 21            | 20            | 17            | 6             | 7             | 17           | 14           |
| 2:00             | 7             | 12            | 5             | 7             | 5             | 17            | 6             | 7            | 8            |
| 3:00             | 11            | 11            | 21            | 14            | 12            | 12            | 1             | 14           | 12           |
| 4:00             | 14            | 19            | 19            | 18            | 10            | 12            | 6             | 16           | 14           |
| 5:00             | 63            | 73            | 84            | 71            | 79            | 32            | 28            | 74           | 61           |
| 6:00             | 123           | 109           | 113           | 121           | 112           | 36            | 17            | 116          | 90           |
| 7:00             | 217           | 223           | 208           | 244           | 199           | 65            | 45            | 218          | 172          |
| 8:00             | 267           | 315           | 302           | 322           | 316           | 131           | 80            | 304          | 248          |
| 9:00             | 173           | 170           | 179           | 217           | 211           | 142           | 110           | 190          | 172          |
| 10:00            | 215           | 224           | 170           | 206           | 217           | 189           | 185           | 206          | 201          |
| 11:00            | 211           | 197           | 202           | 200           | 203           | 184           | 179           | 203          | 197          |
| 12:00            | 221           | 250           | 221           | 231           | 241           | 258           | 190           | 233          | 230          |
| 13:00            | 201           | 217           | 225           | 193           | 300           | 211           | 223           | 227          | 224          |
| 14:00            | 475           | 474           | 466           | 497           | 530           | 239           | 252           | 488          | 419          |
| 15:00            | 259           | 256           | 293           | 268           | 260           | 207           | 136           | 267          | 240          |
| 16:00            | 282           | 311           | 301           | 301           | 277           | 162           | 160           | 294          | 256          |
| 17:00            | 294           | 284           | 278           | 292           | 253           | 148           | 135           | 280          | 241          |
| 18:00            | 154           | 150           | 155           | 173           | 174           | 94            | 66            | 161          | 138          |
| 19:00            | 109           | 99            | 107           | 124           | 91            | 88            | 70            | 106          | 98           |
| 20:00            | 64            | 66            | 79            | 101           | 90            | 42            | 44            | 80           | 69           |
| 21:00            | 53            | 56            | 44            | 65            | 70            | 92            | 49            | 58           | 61           |
| 22:00            | 108           | 107           | 121           | 90            | 120           | 57            | 41            | 109          | 92           |
| 23:00            | 47            | 55            | 57            | 51            | 68            | 27            | 14            | 56           | 46           |
| Total            | 3584          | 3710          | 3681          | 3841          | 3867          | 2471          | 2048          | 3737         | 3315         |

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 7-19 | 2969 | 3071 | 3000 | 3144 | 3181 | 2030 | 1761 | 3073 | 2737 |
| 6-22 | 3318 | 3401 | 3343 | 3555 | 3544 | 2288 | 1941 | 3432 | 3056 |
| 6-24 | 3473 | 3563 | 3521 | 3696 | 3732 | 2372 | 1996 | 3597 | 3193 |
| 0-24 | 3584 | 3710 | 3681 | 3841 | 3867 | 2471 | 2048 | 3737 | 3315 |



**Job No** N5370 Marsden Park  
**Client** Multipro Consultants  
**Site** Hollinsworth Rd  
**Location** Marsden Park  
**Site No** 1  
**Start Date** 23-Oct-19  
**Description** Volume Summary  
**Direction** WB

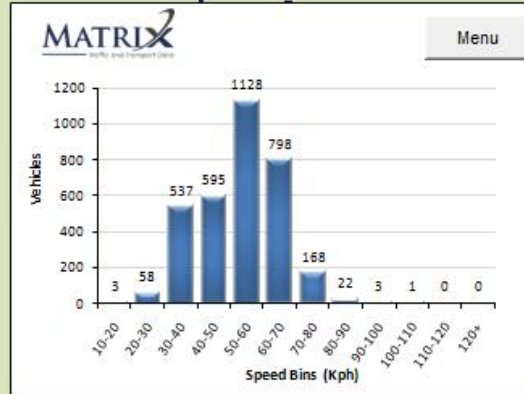
Menu



| Hour<br>Starting | Day of Week   |               |               |               |               |               |               | W'Day<br>Ave | 7 Day<br>Ave |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|
|                  | Mon<br>28-Oct | Tue<br>29-Oct | Wed<br>23-Oct | Thu<br>24-Oct | Fri<br>25-Oct | Sat<br>26-Oct | Sun<br>27-Oct |              |              |
| AM Peak          | 352           | 388           | 385           | 388           | 393           | 201           | 191           |              |              |
| PM Peak          | 304           | 321           | 273           | 278           | 346           | 295           | 258           | 3806         | 3336         |
| 0:00             | 7             | 8             | 9             | 9             | 11            | 9             | 10            | 9            | 9            |
| 1:00             | 16            | 17            | 11            | 16            | 14            | 12            | 11            | 15           | 14           |
| 2:00             | 8             | 16            | 22            | 22            | 13            | 14            | 5             | 16           | 14           |
| 3:00             | 30            | 37            | 37            | 23            | 23            | 17            | 4             | 30           | 24           |
| 4:00             | 32            | 42            | 64            | 48            | 49            | 26            | 9             | 47           | 39           |
| 5:00             | 352           | 388           | 385           | 388           | 393           | 92            | 49            | 381          | 292          |
| 6:00             | 209           | 231           | 240           | 234           | 226           | 68            | 26            | 228          | 176          |
| 7:00             | 248           | 261           | 256           | 243           | 232           | 64            | 41            | 248          | 192          |
| 8:00             | 279           | 264           | 300           | 301           | 271           | 79            | 46            | 283          | 220          |
| 9:00             | 217           | 230           | 220           | 215           | 230           | 123           | 84            | 222          | 188          |
| 10:00            | 179           | 202           | 185           | 197           | 181           | 185           | 178           | 189          | 187          |
| 11:00            | 204           | 208           | 198           | 204           | 195           | 201           | 191           | 202          | 200          |
| 12:00            | 209           | 226           | 209           | 222           | 296           | 295           | 258           | 232          | 245          |
| 13:00            | 304           | 321           | 273           | 278           | 346           | 230           | 184           | 304          | 277          |
| 14:00            | 240           | 242           | 238           | 259           | 261           | 191           | 201           | 248          | 233          |
| 15:00            | 237           | 209           | 209           | 217           | 200           | 147           | 164           | 214          | 198          |
| 16:00            | 237           | 238           | 219           | 249           | 248           | 113           | 169           | 238          | 210          |
| 17:00            | 212           | 253           | 261           | 269           | 261           | 122           | 118           | 251          | 214          |
| 18:00            | 183           | 150           | 158           | 175           | 168           | 131           | 89            | 167          | 151          |
| 19:00            | 103           | 109           | 114           | 132           | 106           | 91            | 73            | 113          | 104          |
| 20:00            | 75            | 69            | 86            | 89            | 93            | 39            | 43            | 82           | 71           |
| 21:00            | 40            | 52            | 48            | 53            | 49            | 40            | 30            | 48           | 45           |
| 22:00            | 24            | 25            | 21            | 27            | 32            | 18            | 7             | 26           | 22           |
| 23:00            | 8             | 11            | 9             | 11            | 16            | 17            | 6             | 11           | 11           |
| Total            | 3653          | 3809          | 3772          | 3881          | 3914          | 2324          | 1996          | 3806         | 3336         |

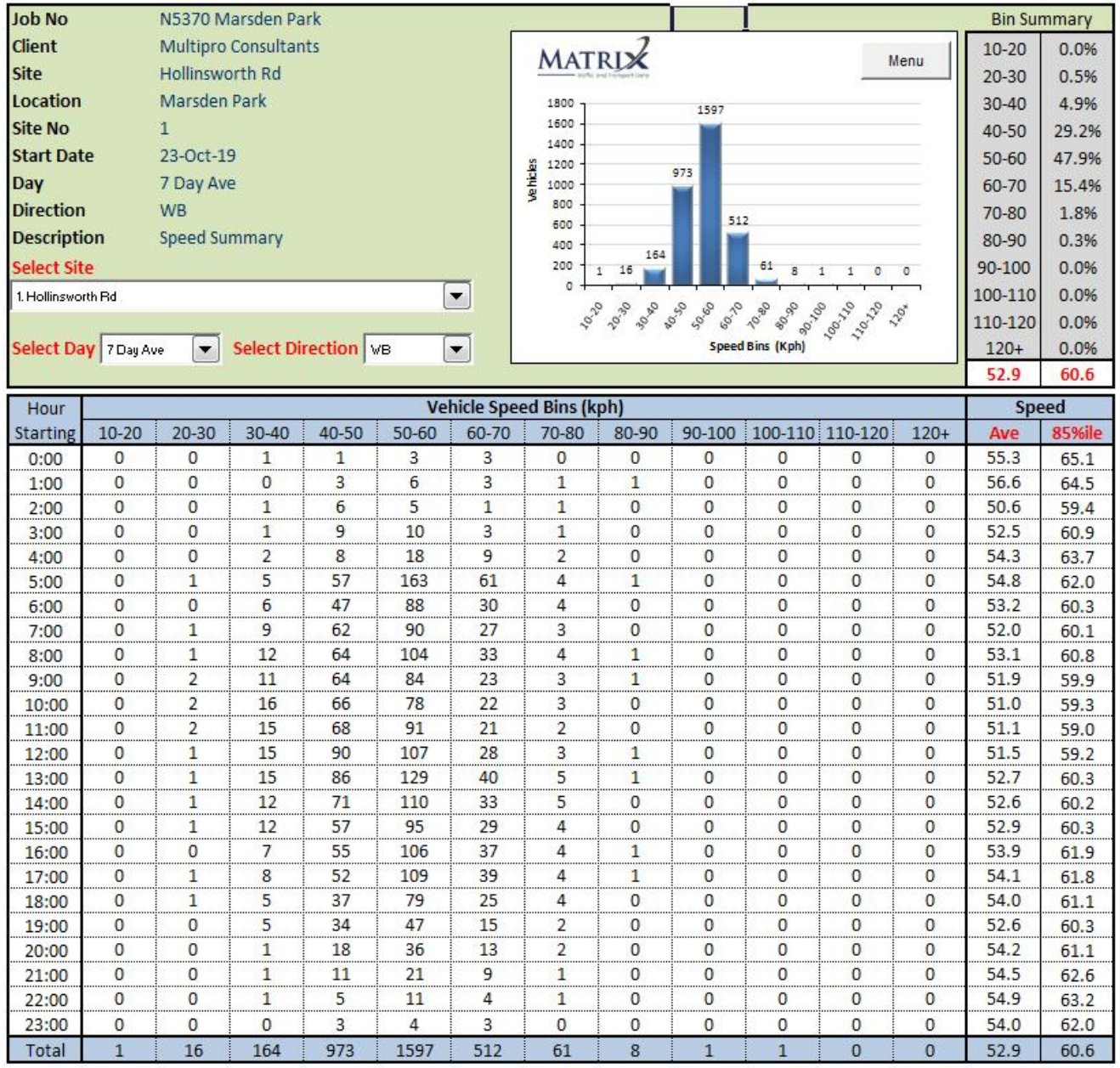
|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 7-19 | 2749 | 2804 | 2726 | 2829 | 2889 | 1881 | 1723 | 2799 | 2514 |
| 6-22 | 3176 | 3265 | 3214 | 3337 | 3363 | 2119 | 1895 | 3271 | 2910 |
| 6-24 | 3208 | 3301 | 3244 | 3375 | 3411 | 2154 | 1908 | 3308 | 2943 |
| 0-24 | 3653 | 3809 | 3772 | 3881 | 3914 | 2324 | 1996 | 3806 | 3336 |

|                         |                      |                    |             |
|-------------------------|----------------------|--------------------|-------------|
| <b>Job No</b>           | N5370 Marsden Park   | <b>Bin Summary</b> |             |
| <b>Client</b>           | Multipro Consultants | 10-20              | 0.1%        |
| <b>Site</b>             | Hollinsworth Rd      | 20-30              | 1.7%        |
| <b>Location</b>         | Marsden Park         | 30-40              | 16.2%       |
| <b>Site No</b>          | 1                    | 40-50              | 17.9%       |
| <b>Start Date</b>       | 23-Oct-19            | 50-60              | 34.0%       |
| <b>Day</b>              | 7 Day Ave            | 60-70              | 24.1%       |
| <b>Direction</b>        | EB                   | 70-80              | 5.1%        |
| <b>Description</b>      | Speed Summary        | 80-90              | 0.7%        |
| <b>Select Site</b>      | 1. Hollinsworth Rd   | 90-100             | 0.1%        |
| <b>Select Day</b>       | 7 Day Ave            | 100-110            | 0.0%        |
| <b>Select Direction</b> | EB                   | 110-120            | 0.0%        |
|                         |                      | 120+               | 0.0%        |
|                         |                      | <b>53.2</b>        | <b>64.5</b> |



| Hour     | Vehicle Speed Bins (kph) |       |       |       |       |       |       |       |        |         |         |      | Speed |        |
|----------|--------------------------|-------|-------|-------|-------|-------|-------|-------|--------|---------|---------|------|-------|--------|
| Starting | 10-20                    | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 | 100-110 | 110-120 | 120+ | Ave   | 85%ile |
| 0:00     | 0                        | 0     | 3     | 2     | 3     | 4     | 1     | 0     | 0      | 0       | 0       | 0    | 53.6  | 65.8   |
| 1:00     | 0                        | 0     | 6     | 2     | 3     | 2     | 0     | 0     | 0      | 0       | 0       | 0    | 49.0  | 57.9   |
| 2:00     | 0                        | 0     | 1     | 1     | 4     | 3     | 1     | 0     | 0      | 0       | 0       | 0    | 56.5  | 65.4   |
| 3:00     | 0                        | 0     | 1     | 2     | 4     | 4     | 1     | 0     | 0      | 0       | 0       | 0    | 54.9  | 65.3   |
| 4:00     | 0                        | 0     | 1     | 1     | 5     | 5     | 1     | 0     | 0      | 0       | 0       | 0    | 56.9  | 67.7   |
| 5:00     | 0                        | 1     | 6     | 7     | 24    | 17    | 5     | 1     | 0      | 0       | 0       | 0    | 55.4  | 65.9   |
| 6:00     | 0                        | 0     | 6     | 14    | 29    | 28    | 10    | 2     | 0      | 0       | 0       | 0    | 59.3  | 70.1   |
| 7:00     | 0                        | 1     | 13    | 22    | 58    | 59    | 16    | 2     | 0      | 0       | 0       | 0    | 57.9  | 68.0   |
| 8:00     | 0                        | 2     | 21    | 40    | 91    | 77    | 15    | 2     | 0      | 0       | 0       | 0    | 56.2  | 66.1   |
| 9:00     | 0                        | 3     | 25    | 29    | 66    | 41    | 7     | 1     | 0      | 0       | 0       | 0    | 53.7  | 64.1   |
| 10:00    | 0                        | 4     | 21    | 34    | 84    | 47    | 9     | 1     | 0      | 0       | 0       | 0    | 54.0  | 63.7   |
| 11:00    | 0                        | 3     | 29    | 36    | 72    | 47    | 7     | 1     | 0      | 0       | 0       | 0    | 52.9  | 63.9   |
| 12:00    | 1                        | 7     | 34    | 43    | 85    | 49    | 10    | 1     | 0      | 0       | 0       | 0    | 52.2  | 63.5   |
| 13:00    | 0                        | 4     | 43    | 38    | 78    | 49    | 9     | 2     | 0      | 0       | 0       | 0    | 52.2  | 64.1   |
| 14:00    | 1                        | 9     | 83    | 100   | 138   | 74    | 13    | 1     | 0      | 0       | 0       | 0    | 50.4  | 62.4   |
| 15:00    | 0                        | 5     | 48    | 47    | 76    | 54    | 9     | 1     | 0      | 0       | 0       | 0    | 51.8  | 63.9   |
| 16:00    | 0                        | 4     | 50    | 52    | 83    | 54    | 11    | 2     | 0      | 0       | 0       | 0    | 51.5  | 63.2   |
| 17:00    | 0                        | 3     | 50    | 42    | 72    | 59    | 14    | 1     | 0      | 0       | 0       | 0    | 52.6  | 65.2   |
| 18:00    | 0                        | 2     | 21    | 22    | 47    | 34    | 10    | 1     | 0      | 0       | 0       | 0    | 54.4  | 66.1   |
| 19:00    | 0                        | 2     | 14    | 17    | 35    | 25    | 4     | 1     | 0      | 0       | 0       | 0    | 53.6  | 64.4   |
| 20:00    | 0                        | 1     | 15    | 11    | 23    | 16    | 3     | 1     | 0      | 0       | 0       | 0    | 52.2  | 64.2   |
| 21:00    | 0                        | 4     | 17    | 9     | 18    | 11    | 3     | 0     | 0      | 0       | 0       | 0    | 49.7  | 62.8   |
| 22:00    | 0                        | 1     | 9     | 12    | 25    | 35    | 9     | 2     | 0      | 0       | 0       | 0    | 58.1  | 68.2   |
| 23:00    | 0                        | 2     | 18    | 12    | 6     | 5     | 2     | 0     | 0      | 0       | 0       | 0    | 45.8  | 60.1   |
| Total    | 3                        | 58    | 537   | 595   | 1128  | 798   | 168   | 22    | 3      | 1       | 0       | 0    | 53.2  | 64.5   |





Ahmadiyya Crescent near Hollinsworth Road, Marsden Park (bet. Cul-De-Sac & Hollinsworth Road)

Job No

N5370 Marsden Park

Client

Multipro Consultants

Site

Ahmadiyya Crescent (before Cul-de-sac)

Location

Marsden Park

Site No

2

Start Date

23-Oct-19

Description

Volume Summary

Direction

Combined

Menu

MATRIX

Traffic and Transport Data

| Hour     | Day of Week |        |        |        |        |        |        | W'Day | 7 Day |
|----------|-------------|--------|--------|--------|--------|--------|--------|-------|-------|
|          | Mon         | Tue    | Wed    | Thu    | Fri    | Sat    | Sun    |       |       |
|          | 28-Oct      | 29-Oct | 23-Oct | 24-Oct | 25-Oct | 26-Oct | 27-Oct |       |       |
| Starting |             |        |        |        |        |        |        | Ave   | Ave   |
| AM Peak  | 133         | 128    | 168    | 161    | 152    | 118    | 121    |       |       |
| PM Peak  | 156         | 165    | 162    | 180    | 233    | 176    | 172    | 1749  | 1587  |
| 0:00     | 4           | 8      | 5      | 5      | 3      | 9      | 0      | 5     | 5     |
| 1:00     | 1           | 11     | 14     | 13     | 12     | 4      | 2      | 10    | 8     |
| 2:00     | 2           | 1      | 0      | 2      | 0      | 3      | 1      | 1     | 1     |
| 3:00     | 13          | 13     | 16     | 14     | 18     | 13     | 0      | 15    | 12    |
| 4:00     | 11          | 15     | 17     | 20     | 13     | 15     | 2      | 15    | 13    |
| 5:00     | 73          | 93     | 82     | 85     | 80     | 19     | 19     | 83    | 64    |
| 6:00     | 59          | 62     | 58     | 58     | 60     | 11     | 5      | 59    | 45    |
| 7:00     | 111         | 128    | 138    | 112    | 115    | 17     | 8      | 121   | 90    |
| 8:00     | 133         | 126    | 168    | 161    | 152    | 33     | 17     | 148   | 113   |
| 9:00     | 85          | 87     | 100    | 95     | 110    | 73     | 40     | 95    | 84    |
| 10:00    | 52          | 74     | 99     | 72     | 74     | 94     | 121    | 74    | 84    |
| 11:00    | 66          | 89     | 81     | 72     | 61     | 118    | 103    | 74    | 84    |
| 12:00    | 83          | 85     | 103    | 100    | 181    | 176    | 132    | 110   | 123   |
| 13:00    | 92          | 77     | 82     | 93     | 233    | 136    | 96     | 115   | 116   |
| 14:00    | 156         | 165    | 162    | 180    | 219    | 131    | 172    | 176   | 169   |
| 15:00    | 110         | 100    | 117    | 116    | 93     | 105    | 73     | 107   | 102   |
| 16:00    | 129         | 155    | 119    | 138    | 150    | 96     | 64     | 138   | 122   |
| 17:00    | 156         | 146    | 160    | 154    | 136    | 63     | 55     | 150   | 124   |
| 18:00    | 65          | 69     | 67     | 74     | 77     | 53     | 27     | 70    | 62    |
| 19:00    | 45          | 50     | 45     | 56     | 39     | 35     | 41     | 47    | 44    |
| 20:00    | 39          | 35     | 55     | 40     | 64     | 23     | 27     | 47    | 40    |
| 21:00    | 32          | 12     | 21     | 22     | 53     | 54     | 37     | 28    | 33    |
| 22:00    | 17          | 16     | 16     | 13     | 28     | 6      | 15     | 18    | 16    |
| 23:00    | 37          | 38     | 33     | 41     | 55     | 10     | 11     | 41    | 32    |
| Total    | 1571        | 1655   | 1758   | 1736   | 2026   | 1297   | 1068   | 1749  | 1587  |

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 7-19 | 1238 | 1301 | 1396 | 1367 | 1601 | 1095 | 908  | 1381 | 1272 |
| 6-22 | 1413 | 1460 | 1575 | 1543 | 1817 | 1218 | 1018 | 1562 | 1435 |
| 6-24 | 1467 | 1514 | 1624 | 1597 | 1900 | 1234 | 1044 | 1620 | 1483 |
| 0-24 | 1571 | 1655 | 1758 | 1736 | 2026 | 1297 | 1068 | 1749 | 1587 |



**Job No** N5370 Marsden Park  
**Client** Multipro Consultants  
**Site** Ahmadiyya Crescent (before Cul-de-sac)  
**Location** Marsden Park  
**Site No** 2  
**Start Date** 23-Oct-19  
**Description** Volume Summary  
**Direction** NB


Menu



| Hour<br>Starting | Day of Week |        |        |        |        |        |        | W'Day<br>Ave | 7 Day<br>Ave |
|------------------|-------------|--------|--------|--------|--------|--------|--------|--------------|--------------|
|                  | Mon         | Tue    | Wed    | Thu    | Fri    | Sat    | Sun    |              |              |
|                  | 28-Oct      | 29-Oct | 23-Oct | 24-Oct | 25-Oct | 26-Oct | 27-Oct |              |              |
| AM Peak          | 40          | 47     | 54     | 50     | 55     | 50     | 39     |              |              |
| PM Peak          | 113         | 106    | 111    | 114    | 144    | 86     | 102    | 883          | 801          |
| 0:00             | 2           | 7      | 3      | 4      | 2      | 7      | 0      | 4            | 4            |
| 1:00             | 1           | 10     | 13     | 13     | 11     | 2      | 1      | 10           | 7            |
| 2:00             | 1           | 1      | 0      | 1      | 0      | 3      | 1      | 1            | 1            |
| 3:00             | 3           | 2      | 3      | 2      | 4      | 4      | 0      | 3            | 3            |
| 4:00             | 0           | 1      | 3      | 4      | 1      | 3      | 0      | 2            | 2            |
| 5:00             | 9           | 18     | 13     | 10     | 12     | 8      | 10     | 12           | 11           |
| 6:00             | 14          | 16     | 17     | 15     | 18     | 1      | 1      | 16           | 12           |
| 7:00             | 31          | 41     | 43     | 36     | 32     | 4      | 3      | 37           | 27           |
| 8:00             | 40          | 37     | 54     | 50     | 55     | 12     | 5      | 47           | 36           |
| 9:00             | 34          | 35     | 44     | 43     | 48     | 28     | 13     | 41           | 35           |
| 10:00            | 23          | 34     | 44     | 25     | 37     | 34     | 36     | 33           | 33           |
| 11:00            | 31          | 47     | 46     | 34     | 32     | 50     | 39     | 38           | 40           |
| 12:00            | 44          | 46     | 53     | 54     | 54     | 86     | 57     | 50           | 56           |
| 13:00            | 42          | 32     | 40     | 45     | 134    | 64     | 55     | 59           | 59           |
| 14:00            | 102         | 98     | 110    | 114    | 144    | 69     | 102    | 114          | 106          |
| 15:00            | 63          | 60     | 72     | 75     | 60     | 72     | 38     | 66           | 63           |
| 16:00            | 84          | 106    | 82     | 88     | 95     | 69     | 32     | 91           | 79           |
| 17:00            | 113         | 98     | 111    | 103    | 91     | 41     | 41     | 103          | 85           |
| 18:00            | 39          | 47     | 45     | 48     | 31     | 16     | 10     | 42           | 34           |
| 19:00            | 19          | 25     | 23     | 34     | 16     | 15     | 15     | 23           | 21           |
| 20:00            | 21          | 14     | 26     | 18     | 34     | 12     | 18     | 23           | 20           |
| 21:00            | 24          | 5      | 12     | 15     | 34     | 48     | 31     | 18           | 24           |
| 22:00            | 9           | 11     | 12     | 9      | 22     | 2      | 15     | 13           | 11           |
| 23:00            | 37          | 37     | 33     | 40     | 51     | 8      | 9      | 40           | 31           |
| Total            | 786         | 828    | 902    | 880    | 1018   | 658    | 532    | 883          | 801          |

|      |     |     |     |     |      |     |     |     |     |
|------|-----|-----|-----|-----|------|-----|-----|-----|-----|
| 7-19 | 646 | 681 | 744 | 715 | 813  | 545 | 431 | 720 | 654 |
| 6-22 | 724 | 741 | 822 | 797 | 915  | 621 | 496 | 800 | 731 |
| 6-24 | 770 | 789 | 867 | 846 | 988  | 631 | 520 | 852 | 773 |
| 0-24 | 786 | 828 | 902 | 880 | 1018 | 658 | 532 | 883 | 801 |


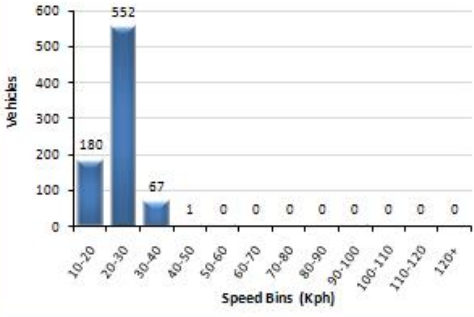
|             |                                        |                                                                                                     |
|-------------|----------------------------------------|-----------------------------------------------------------------------------------------------------|
| Job No      | N5370 Marsden Park                     | <div>Menu</div>  |
| Client      | Multipro Consultants                   |                                                                                                     |
| Site        | Ahmadiyya Crescent (before Cul-de-sac) |                                                                                                     |
| Location    | Marsden Park                           |                                                                                                     |
| Site No     | 2                                      |                                                                                                     |
| Start Date  | 23-Oct-19                              |                                                                                                     |
| Description | Volume Summary                         |                                                                                                     |
| Direction   | SB                                     |                                                                                                     |

| Hour     | Day of Week |        |        |        |        |        |        | W'Day | 7 Day |
|----------|-------------|--------|--------|--------|--------|--------|--------|-------|-------|
|          | Mon         | Tue    | Wed    | Thu    | Fri    | Sat    | Sun    |       |       |
| Starting | 28-Oct      | 29-Oct | 23-Oct | 24-Oct | 25-Oct | 26-Oct | 27-Oct | Ave   | Ave   |
| AM Peak  | 93          | 89     | 114    | 111    | 97     | 68     | 85     |       |       |
| PM Peak  | 54          | 67     | 52     | 66     | 127    | 90     | 75     | 866   | 787   |
| 0:00     | 2           | 1      | 2      | 1      | 1      | 2      | 0      | 1     | 1     |
| 1:00     | 0           | 1      | 1      | 0      | 1      | 2      | 1      | 1     | 1     |
| 2:00     | 1           | 0      | 0      | 1      | 0      | 0      | 0      | 0     | 0     |
| 3:00     | 10          | 11     | 13     | 12     | 14     | 9      | 0      | 12    | 10    |
| 4:00     | 11          | 14     | 14     | 16     | 12     | 12     | 2      | 13    | 12    |
| 5:00     | 64          | 75     | 69     | 75     | 68     | 11     | 9      | 70    | 53    |
| 6:00     | 45          | 46     | 41     | 43     | 42     | 10     | 4      | 43    | 33    |
| 7:00     | 80          | 87     | 95     | 76     | 83     | 13     | 5      | 84    | 63    |
| 8:00     | 93          | 89     | 114    | 111    | 97     | 21     | 12     | 101   | 77    |
| 9:00     | 51          | 52     | 56     | 52     | 62     | 45     | 27     | 55    | 49    |
| 10:00    | 29          | 40     | 55     | 47     | 37     | 60     | 85     | 42    | 50    |
| 11:00    | 35          | 42     | 35     | 38     | 29     | 68     | 64     | 36    | 44    |
| 12:00    | 39          | 39     | 50     | 46     | 127    | 90     | 75     | 60    | 67    |
| 13:00    | 50          | 45     | 42     | 48     | 99     | 72     | 41     | 57    | 57    |
| 14:00    | 54          | 67     | 52     | 66     | 75     | 62     | 70     | 63    | 64    |
| 15:00    | 47          | 40     | 45     | 41     | 33     | 33     | 35     | 41    | 39    |
| 16:00    | 45          | 49     | 37     | 50     | 55     | 27     | 32     | 47    | 42    |
| 17:00    | 43          | 48     | 49     | 51     | 45     | 22     | 14     | 47    | 39    |
| 18:00    | 26          | 22     | 22     | 26     | 46     | 37     | 17     | 28    | 28    |
| 19:00    | 26          | 25     | 22     | 22     | 23     | 20     | 26     | 24    | 23    |
| 20:00    | 18          | 21     | 29     | 22     | 30     | 11     | 9      | 24    | 20    |
| 21:00    | 8           | 7      | 9      | 7      | 19     | 6      | 6      | 10    | 9     |
| 22:00    | 8           | 5      | 4      | 4      | 6      | 4      | 0      | 5     | 4     |
| 23:00    | 0           | 1      | 0      | 1      | 4      | 2      | 2      | 1     | 1     |
| Total    | 785         | 827    | 856    | 856    | 1008   | 639    | 536    | 866   | 787   |

|      |     |     |     |     |      |     |     |     |     |
|------|-----|-----|-----|-----|------|-----|-----|-----|-----|
| 7-19 | 592 | 620 | 652 | 652 | 788  | 550 | 477 | 661 | 619 |
| 6-22 | 689 | 719 | 753 | 746 | 902  | 597 | 522 | 762 | 704 |
| 6-24 | 697 | 725 | 757 | 751 | 912  | 603 | 524 | 768 | 710 |
| 0-24 | 785 | 827 | 856 | 856 | 1008 | 639 | 536 | 866 | 787 |



[illegible]

|                         |                                           |                                                                                                                                                                                      |             |                    |       |
|-------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|-------|
| <b>Job No</b>           | N5370 Marsden Park                        |  <div>Menu</div>  |             | <b>Bin Summary</b> |       |
| <b>Client</b>           | Multipro Consultants                      |                                                                                                                                                                                      |             | 10-20              | 22.5% |
| <b>Site</b>             | Ahmadiyya Crescent (before Cul-de-sac)    | 20-30                                                                                                                                                                                | 69.0%       |                    |       |
| <b>Location</b>         | Marsden Park                              | 30-40                                                                                                                                                                                | 8.4%        |                    |       |
| <b>Site No</b>          | 2                                         | 40-50                                                                                                                                                                                | 0.1%        |                    |       |
| <b>Start Date</b>       | 23-Oct-19                                 | 50-60                                                                                                                                                                                | 0.1%        |                    |       |
| <b>Day</b>              | 7 Day Ave                                 | 60-70                                                                                                                                                                                | 0.0%        |                    |       |
| <b>Direction</b>        | NB                                        | 70-80                                                                                                                                                                                | 0.0%        |                    |       |
| <b>Description</b>      | Speed Summary                             | 80-90                                                                                                                                                                                | 0.0%        |                    |       |
| <b>Select Site</b>      | 2. Ahmadiyya Crescent (before Cul-de-sac) | 90-100                                                                                                                                                                               | 0.0%        |                    |       |
| <b>Select Day</b>       | 7 Day Ave                                 | 100-110                                                                                                                                                                              | 0.0%        |                    |       |
| <b>Select Direction</b> | NB                                        | 110-120                                                                                                                                                                              | 0.0%        |                    |       |
|                         |                                           | 120+                                                                                                                                                                                 | 0.0%        |                    |       |
|                         |                                           | <b>23.4</b>                                                                                                                                                                          | <b>27.7</b> |                    |       |

| Hour  | Vehicle Speed Bins (kph) |       |       |       |       |       |       |       |        |         |         |      | Speed |        |
|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------|--------|---------|---------|------|-------|--------|
|       | 10-20                    | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 | 100-110 | 110-120 | 120+ | Ave   | 85%ile |
| 0:00  | 0                        | 3     | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 25.1  | 0      |
| 1:00  | 0                        | 6     | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 24.9  | 29.5   |
| 2:00  | 0                        | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 22.1  | 0      |
| 3:00  | 0                        | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 24.3  | 0      |
| 4:00  | 1                        | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 26.3  | 0      |
| 5:00  | 1                        | 9     | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 25.2  | 27.9   |
| 6:00  | 4                        | 7     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 22.4  | 25.3   |
| 7:00  | 7                        | 19    | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 21.4  | 26.0   |
| 8:00  | 11                       | 25    | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 21.8  | 25.9   |
| 9:00  | 11                       | 23    | 2     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 21.9  | 25.3   |
| 10:00 | 8                        | 23    | 2     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 22.6  | 25.9   |
| 11:00 | 9                        | 26    | 4     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.4  | 27.9   |
| 12:00 | 14                       | 37    | 5     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.9  | 28.4   |
| 13:00 | 16                       | 40    | 3     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 22.8  | 26.8   |
| 14:00 | 22                       | 76    | 8     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.5  | 27.9   |
| 15:00 | 16                       | 41    | 6     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.2  | 28.2   |
| 16:00 | 15                       | 56    | 8     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.7  | 28.1   |
| 17:00 | 16                       | 62    | 8     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.7  | 27.9   |
| 18:00 | 9                        | 23    | 2     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.2  | 27.2   |
| 19:00 | 3                        | 16    | 2     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 24.6  | 29.7   |
| 20:00 | 3                        | 14    | 4     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 24.6  | 29.5   |
| 21:00 | 9                        | 13    | 2     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.6  | 27.4   |
| 22:00 | 3                        | 8     | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.6  | 29.7   |
| 23:00 | 2                        | 22    | 6     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 26.0  | 30.8   |
| Total | 180                      | 552   | 67    | 1     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 23.4  | 27.7   |



Ahmadiyya Crescent - Internal driveway into Place of Worship (45 Hollinsworth Road)

|             |                                        |                                                                                                     |
|-------------|----------------------------------------|-----------------------------------------------------------------------------------------------------|
| Job No      | N5370 Marsden Park                     | <div>Menu</div>  |
| Client      | Multipro Consultants                   |                                                                                                     |
| Site        | Ahmadiyya Crescent (Internal Driveway) |                                                                                                     |
| Location    | Marsden Park                           |                                                                                                     |
| Site No     | 3                                      |                                                                                                     |
| Start Date  | 23-Oct-19                              |                                                                                                     |
| Description | Volume Summary                         |                                                                                                     |
| Direction   | Combined                               |                                                                                                     |

| Hour<br>Starting | Day of Week   |               |               |               |               |               |               | W'Day<br>Ave | 7 Day<br>Ave |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|
|                  | Mon<br>28-Oct | Tue<br>29-Oct | Wed<br>23-Oct | Thu<br>24-Oct | Fri<br>25-Oct | Sat<br>26-Oct | Sun<br>27-Oct |              |              |
| AM Peak          | 6             | 8             | 13            | 7             | 6             | 25            | 52            |              |              |
| PM Peak          | 23            | 27            | 20            | 21            | 173           | 45            | 58            | 179          | 231          |
| 0:00             | 1             | 6             | 0             | 0             | 1             | 1             | 0             | 2            | 1            |
| 1:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 2:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 3:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 4:00             | 0             | 2             | 1             | 0             | 1             | 2             | 2             | 1            | 1            |
| 5:00             | 4             | 8             | 10            | 4             | 6             | 14            | 18            | 6            | 9            |
| 6:00             | 0             | 1             | 1             | 1             | 0             | 1             | 1             | 1            | 1            |
| 7:00             | 1             | 0             | 9             | 2             | 0             | 0             | 0             | 2            | 2            |
| 8:00             | 0             | 0             | 0             | 0             | 2             | 2             | 1             | 0            | 1            |
| 9:00             | 2             | 2             | 5             | 2             | 2             | 23            | 7             | 3            | 6            |
| 10:00            | 1             | 5             | 13            | 3             | 2             | 20            | 52            | 5            | 14           |
| 11:00            | 6             | 7             | 3             | 7             | 4             | 25            | 34            | 5            | 12           |
| 12:00            | 10            | 7             | 10            | 8             | 98            | 40            | 25            | 27           | 28           |
| 13:00            | 10            | 6             | 16            | 21            | 173           | 43            | 26            | 45           | 42           |
| 14:00            | 5             | 3             | 2             | 10            | 35            | 45            | 58            | 11           | 23           |
| 15:00            | 2             | 1             | 1             | 8             | 5             | 40            | 11            | 3            | 10           |
| 16:00            | 6             | 4             | 4             | 5             | 4             | 34            | 28            | 5            | 12           |
| 17:00            | 5             | 2             | 3             | 2             | 3             | 6             | 18            | 3            | 6            |
| 18:00            | 2             | 6             | 3             | 4             | 12            | 6             | 16            | 5            | 7            |
| 19:00            | 23            | 27            | 16            | 19            | 23            | 14            | 30            | 22           | 22           |
| 20:00            | 9             | 13            | 20            | 15            | 21            | 8             | 14            | 16           | 14           |
| 21:00            | 22            | 6             | 6             | 4             | 17            | 2             | 32            | 11           | 13           |
| 22:00            | 6             | 0             | 8             | 3             | 9             | 0             | 9             | 5            | 5            |
| 23:00            | 1             | 0             | 0             | 1             | 7             | 3             | 8             | 2            | 3            |
| Total            | 116           | 106           | 131           | 119           | 425           | 329           | 390           | 179          | 231          |

|      |     |     |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 7-19 | 50  | 43  | 69  | 72  | 340 | 284 | 276 | 115 | 162 |
| 6-22 | 104 | 90  | 112 | 111 | 401 | 309 | 353 | 164 | 211 |
| 6-24 | 111 | 90  | 120 | 115 | 417 | 312 | 370 | 171 | 219 |
| 0-24 | 116 | 106 | 131 | 119 | 425 | 329 | 390 | 179 | 231 |

|             |                                        |      |
|-------------|----------------------------------------|------|
| Job No      | N5370 Marsden Park                     | Menu |
| Client      | Multipro Consultants                   |      |
| Site        | Ahmadiyya Crescent (Internal Driveway) |      |
| Location    | Marsden Park                           |      |
| Site No     | 3                                      |      |
| Start Date  | 23-Oct-19                              |      |
| Description | Volume Summary                         |      |
| Direction   | NB                                     |      |



| Hour<br>Starting | Day of Week   |               |               |               |               |               |               | W'Day<br>Ave | 7 Day<br>Ave |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|
|                  | Mon<br>28-Oct | Tue<br>29-Oct | Wed<br>23-Oct | Thu<br>24-Oct | Fri<br>25-Oct | Sat<br>26-Oct | Sun<br>27-Oct |              |              |
| AM Peak          | 2             | 6             | 6             | 2             | 4             | 8             | 13            |              |              |
| PM Peak          | 19            | 7             | 13            | 11            | 117           | 30            | 44            | 87           | 114          |
| 0:00             | 1             | 6             | 0             | 0             | 1             | 1             | 0             | 2            | 1            |
| 1:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 2:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 3:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 4:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 5:00             | 2             | 5             | 5             | 2             | 4             | 8             | 10            | 4            | 5            |
| 6:00             | 0             | 1             | 1             | 0             | 0             | 0             | 0             | 0            | 0            |
| 7:00             | 0             | 0             | 3             | 1             | 0             | 0             | 0             | 1            | 1            |
| 8:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 9:00             | 1             | 0             | 2             | 0             | 0             | 3             | 1             | 1            | 1            |
| 10:00            | 1             | 1             | 6             | 0             | 1             | 3             | 9             | 2            | 3            |
| 11:00            | 1             | 4             | 1             | 2             | 2             | 4             | 13            | 2            | 4            |
| 12:00            | 3             | 2             | 3             | 1             | 4             | 18            | 7             | 3            | 5            |
| 13:00            | 8             | 5             | 13            | 11            | 117           | 22            | 19            | 31           | 28           |
| 14:00            | 2             | 2             | 0             | 10            | 32            | 27            | 44            | 9            | 17           |
| 15:00            | 1             | 0             | 0             | 6             | 4             | 30            | 4             | 2            | 6            |
| 16:00            | 3             | 2             | 2             | 2             | 2             | 27            | 6             | 2            | 6            |
| 17:00            | 2             | 1             | 2             | 1             | 1             | 5             | 11            | 1            | 3            |
| 18:00            | 0             | 3             | 1             | 0             | 2             | 4             | 2             | 1            | 2            |
| 19:00            | 3             | 7             | 6             | 7             | 10            | 6             | 12            | 7            | 7            |
| 20:00            | 5             | 2             | 9             | 9             | 6             | 5             | 10            | 6            | 7            |
| 21:00            | 19            | 4             | 4             | 4             | 8             | 1             | 30            | 8            | 10           |
| 22:00            | 3             | 0             | 8             | 3             | 9             | 0             | 9             | 5            | 5            |
| 23:00            | 1             | 0             | 0             | 0             | 7             | 2             | 7             | 2            | 2            |
| Total            | 56            | 45            | 66            | 59            | 210           | 166           | 194           | 87           | 114          |

|      |    |    |    |    |     |     |     |    |     |
|------|----|----|----|----|-----|-----|-----|----|-----|
| 7-19 | 22 | 20 | 33 | 34 | 165 | 143 | 116 | 55 | 76  |
| 6-22 | 49 | 34 | 53 | 54 | 189 | 155 | 168 | 76 | 100 |
| 6-24 | 53 | 34 | 61 | 57 | 205 | 157 | 184 | 82 | 107 |
| 0-24 | 56 | 45 | 66 | 59 | 210 | 166 | 194 | 87 | 114 |




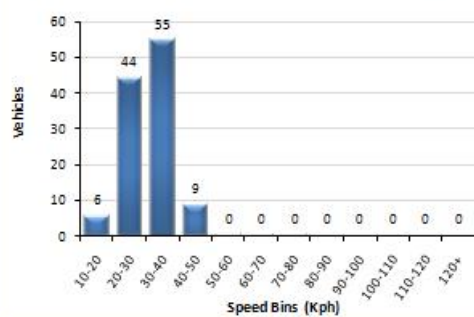
**Job No** N5370 Marsden Park  
**Client** Multipro Consultants  
**Site** Ahmadiyya Crescent (Internal Driveway)  
**Location** Marsden Park  
**Site No** 3  
**Start Date** 23-Oct-19  
**Description** Volume Summary  
**Direction** SB

Menu



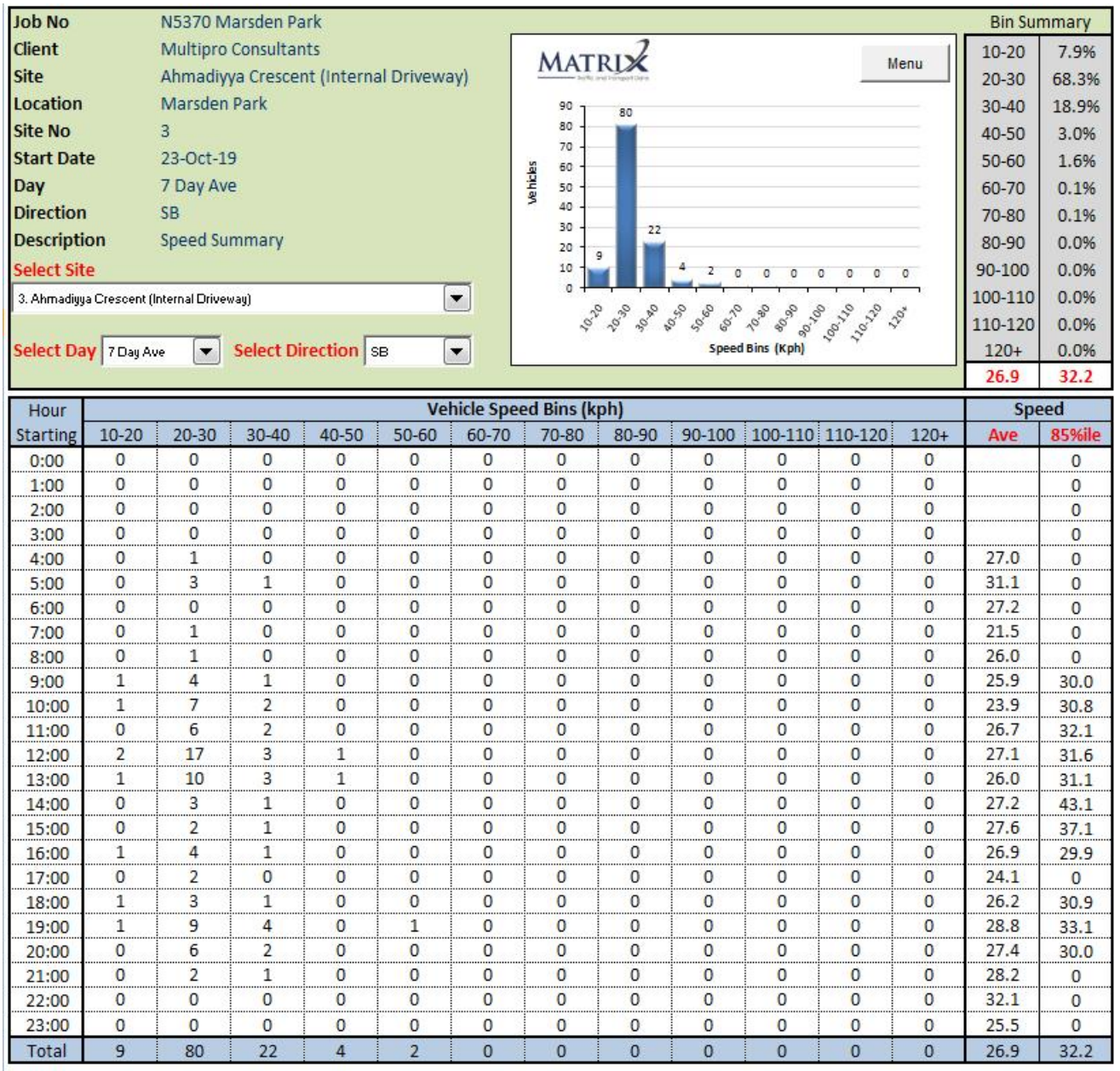
| Hour<br>Starting | Day of Week   |               |               |               |               |               |               | W'Day<br>Ave | 7 Day<br>Ave |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|
|                  | Mon<br>28-Oct | Tue<br>29-Oct | Wed<br>23-Oct | Thu<br>24-Oct | Fri<br>25-Oct | Sat<br>26-Oct | Sun<br>27-Oct |              |              |
| AM Peak          | 5             | 4             | 7             | 5             | 2             | 21            | 43            |              |              |
| PM Peak          | 20            | 20            | 11            | 12            | 94            | 22            | 22            | 92           | 117          |
| 0:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 1:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 2:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 3:00             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0            | 0            |
| 4:00             | 0             | 2             | 1             | 0             | 1             | 2             | 2             | 1            | 1            |
| 5:00             | 2             | 3             | 5             | 2             | 2             | 6             | 8             | 3            | 4            |
| 6:00             | 0             | 0             | 0             | 1             | 0             | 1             | 1             | 0            | 0            |
| 7:00             | 1             | 0             | 6             | 1             | 0             | 0             | 0             | 2            | 1            |
| 8:00             | 0             | 0             | 0             | 0             | 2             | 2             | 1             | 0            | 1            |
| 9:00             | 1             | 2             | 3             | 2             | 2             | 20            | 6             | 2            | 5            |
| 10:00            | 0             | 4             | 7             | 3             | 1             | 17            | 43            | 3            | 11           |
| 11:00            | 5             | 3             | 2             | 5             | 2             | 21            | 21            | 3            | 8            |
| 12:00            | 7             | 5             | 7             | 7             | 94            | 22            | 18            | 24           | 23           |
| 13:00            | 2             | 1             | 3             | 10            | 56            | 21            | 7             | 14           | 14           |
| 14:00            | 3             | 1             | 2             | 0             | 3             | 18            | 14            | 2            | 6            |
| 15:00            | 1             | 1             | 1             | 2             | 1             | 10            | 7             | 1            | 3            |
| 16:00            | 3             | 2             | 2             | 3             | 2             | 7             | 22            | 2            | 6            |
| 17:00            | 3             | 1             | 1             | 1             | 2             | 1             | 7             | 2            | 2            |
| 18:00            | 2             | 3             | 2             | 4             | 10            | 2             | 14            | 4            | 5            |
| 19:00            | 20            | 20            | 10            | 12            | 13            | 8             | 18            | 15           | 14           |
| 20:00            | 4             | 11            | 11            | 6             | 15            | 3             | 4             | 9            | 8            |
| 21:00            | 3             | 2             | 2             | 0             | 9             | 1             | 2             | 3            | 3            |
| 22:00            | 3             | 0             | 0             | 0             | 0             | 0             | 0             | 1            | 0            |
| 23:00            | 0             | 0             | 0             | 1             | 0             | 1             | 1             | 0            | 0            |
| Total            | 60            | 61            | 65            | 60            | 215           | 163           | 196           | 92           | 117          |

|      |    |    |    |    |     |     |     |    |     |
|------|----|----|----|----|-----|-----|-----|----|-----|
| 7-19 | 28 | 23 | 36 | 38 | 175 | 141 | 160 | 60 | 86  |
| 6-22 | 55 | 56 | 59 | 57 | 212 | 154 | 185 | 88 | 111 |
| 6-24 | 58 | 56 | 59 | 58 | 212 | 155 | 186 | 89 | 112 |
| 0-24 | 60 | 61 | 65 | 60 | 215 | 163 | 196 | 92 | 117 |

|                         |                                           |                                                                                                                                                                                 |                    |       |
|-------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------|
| <b>Job No</b>           | N5370 Marsden Park                        | <br><br>Menu | <b>Bin Summary</b> |       |
| <b>Client</b>           | Multipro Consultants                      |                                                                                                                                                                                 | 10-20              | 4.9%  |
| <b>Site</b>             | Ahmadiyya Crescent (Internal Driveway)    |                                                                                                                                                                                 | 20-30              | 38.8% |
| <b>Location</b>         | Marsden Park                              |                                                                                                                                                                                 | 30-40              | 48.2% |
| <b>Site No</b>          | 3                                         |                                                                                                                                                                                 | 40-50              | 7.5%  |
| <b>Start Date</b>       | 23-Oct-19                                 |                                                                                                                                                                                 | 50-60              | 0.3%  |
| <b>Day</b>              | 7 Day Ave                                 |                                                                                                                                                                                 | 60-70              | 0.1%  |
| <b>Direction</b>        | NB                                        |                                                                                                                                                                                 | 70-80              | 0.1%  |
| <b>Description</b>      | Speed Summary                             | 80-90                                                                                                                                                                           | 0.0%               |       |
| <b>Select Site</b>      | 3. Ahmadiyya Crescent (Internal Driveway) | 90-100                                                                                                                                                                          | 0.0%               |       |
| <b>Select Day</b>       | 7 Day Ave                                 | 100-110                                                                                                                                                                         | 0.0%               |       |
| <b>Select Direction</b> | NB                                        | 110-120                                                                                                                                                                         | 0.0%               |       |
|                         |                                           | 120+                                                                                                                                                                            | 0.0%               |       |
|                         |                                           | <b>31.6</b>                                                                                                                                                                     | <b>37.2</b>        |       |

| Hour  | Vehicle Speed Bins (kph) |       |       |       |       |       |       |       |        |         |         |      | Speed |        |
|-------|--------------------------|-------|-------|-------|-------|-------|-------|-------|--------|---------|---------|------|-------|--------|
|       | 10-20                    | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 | 100-110 | 110-120 | 120+ | Ave   | 85%ile |
| 0:00  | 0                        | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 34.2  | 0      |
| 1:00  | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    |       | 0      |
| 2:00  | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    |       | 0      |
| 3:00  | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    |       | 0      |
| 4:00  | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    |       | 0      |
| 5:00  | 0                        | 3     | 2     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 30.8  | 30.4   |
| 6:00  | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 20.1  | 0      |
| 7:00  | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 18.9  | 0      |
| 8:00  | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    |       | 0      |
| 9:00  | 0                        | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 31.5  | 0      |
| 10:00 | 0                        | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 31.1  | 0      |
| 11:00 | 0                        | 2     | 2     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 31.9  | 39.2   |
| 12:00 | 0                        | 1     | 3     | 1     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 33.3  | 38.7   |
| 13:00 | 3                        | 15    | 9     | 1     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 30.8  | 36.3   |
| 14:00 | 1                        | 7     | 8     | 1     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 30.3  | 37.4   |
| 15:00 | 0                        | 3     | 3     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 30.6  | 35.4   |
| 16:00 | 0                        | 2     | 4     | 1     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 33.1  | 38.4   |
| 17:00 | 0                        | 1     | 2     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 32.5  | 40.4   |
| 18:00 | 0                        | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 33.8  | 0      |
| 19:00 | 0                        | 2     | 4     | 1     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 32.9  | 39.9   |
| 20:00 | 0                        | 2     | 4     | 1     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 33.3  | 37.8   |
| 21:00 | 0                        | 3     | 6     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 32.2  | 38.1   |
| 22:00 | 0                        | 1     | 3     | 1     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 33.5  | 0      |
| 23:00 | 0                        | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 32.7  | 0      |
| Total | 6                        | 44    | 55    | 9     | 0     | 0     | 0     | 0     | 0      | 0       | 0       | 0    | 31.6  | 37.2   |





# Intersection of Hollinsworth Road with Ahmadiyya Crescent, Marsden Park

Job No. : N5370  
 Client : Multipro Consultants  
 Suburb : Marsden Park  
 Location : 2. Hollinsworth Rd / Ahmadiyya Cr

Day/Date : Wed, 23rd October 2019

Weather : Fine

Description : Classified Intersection Count

: Peak Hour Summary



| Approach    |                | Ahmadiyya Cr |         |       | Hollinsworth Rd |         |       | Hollinsworth Rd |         |       | Grand Total |
|-------------|----------------|--------------|---------|-------|-----------------|---------|-------|-----------------|---------|-------|-------------|
| Time Period |                | Lights       | Heavies | Total | Lights          | Heavies | Total | Lights          | Heavies | Total |             |
| AM          | 7:45 to 8:45   | 45           | 1       | 46    | 243             | 44      | 287   | 239             | 47      | 286   | 619         |
| PM          | 16:30 to 17:30 | 119          | 0       | 119   | 231             | 17      | 248   | 200             | 20      | 220   | 587         |

| Approach    |                | Ahmadiyya Cr |         |       | Hollinsworth Rd |         |       | Hollinsworth Rd |         |       | Grand Total |
|-------------|----------------|--------------|---------|-------|-----------------|---------|-------|-----------------|---------|-------|-------------|
| Time Period |                | Lights       | Heavies | Total | Lights          | Heavies | Total | Lights          | Heavies | Total |             |
|             | 7:00 to 8:00   | 38           | 0       | 38    | 197             | 54      | 251   | 151             | 32      | 183   | 472         |
|             | 7:15 to 8:15   | 43           | 0       | 43    | 209             | 51      | 260   | 184             | 33      | 217   | 520         |
|             | 7:30 to 8:30   | 44           | 0       | 44    | 226             | 44      | 270   | 220             | 43      | 263   | 577         |
|             | 7:45 to 8:45   | 45           | 1       | 46    | 243             | 44      | 287   | 239             | 47      | 286   | 619         |
|             | 8:00 to 9:00   | 42           | 1       | 43    | 252             | 46      | 298   | 227             | 50      | 277   | 618         |
| AM Totals   |                | 80           | 1       | 81    | 449             | 100     | 549   | 378             | 82      | 460   | 1,090       |
|             | 16:00 to 17:00 | 81           | 0       | 81    | 201             | 20      | 221   | 204             | 25      | 229   | 531         |
|             | 16:15 to 17:15 | 100          | 0       | 100   | 219             | 20      | 239   | 206             | 24      | 230   | 569         |
|             | 16:30 to 17:30 | 119          | 0       | 119   | 231             | 17      | 248   | 200             | 20      | 220   | 587         |
|             | 16:45 to 17:45 | 118          | 0       | 118   | 235             | 14      | 249   | 175             | 24      | 199   | 566         |
|             | 17:00 to 18:00 | 111          | 0       | 111   | 242             | 17      | 259   | 165             | 22      | 187   | 557         |
| PM Totals   |                | 192          | 0       | 192   | 443             | 37      | 480   | 369             | 47      | 416   | 1,088       |





Marsden Park IC - Traffic Flows

Search By Time and Classification

Day: Jan

Start Time: 1:45

End Time: 4h

Classification: All

Volume Excerpting

0%

0% - original sum of data  
(e.g. input 10 for volume increase 20% or -30 for volume decrease 30%)



Turning Movements

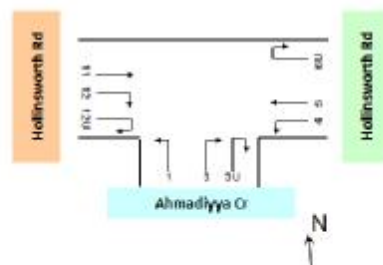
Flow Diagram



Job No. : NS370  
 Client : Multipro Consultants  
 Suburb : Marsden Park  
 Location : 2. Hollinsworth Rd / Ahmadiyya Cr.

Day/Date : Wed, 23rd October 2019  
 Weather : Fine  
 Description : Classified Intersection Count  
 : 15 mins Data

Class 1 : Lights  
 Class 2 : Heavies



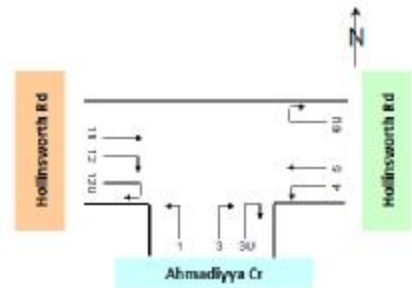
| Approach       | Ahmadiyya Cr               |         |       |                             |         |       |                          |         |       |                            |         |       | Hollinsworth Rd          |         |       |                          |         |       |        |         |       |        |         |       |
|----------------|----------------------------|---------|-------|-----------------------------|---------|-------|--------------------------|---------|-------|----------------------------|---------|-------|--------------------------|---------|-------|--------------------------|---------|-------|--------|---------|-------|--------|---------|-------|
|                | Direction 1<br>(Left Turn) |         |       | Direction 3<br>(Right Turn) |         |       | Direction 3U<br>(U Turn) |         |       | Direction 4<br>(Left Turn) |         |       | Direction 5<br>(Through) |         |       | Direction 6U<br>(U Turn) |         |       |        |         |       |        |         |       |
|                | Lg/Lts                     | Heavies | Total | Lg/Lts                      | Heavies | Total | Lg/Lts                   | Heavies | Total | Lg/Lts                     | Heavies | Total | Lg/Lts                   | Heavies | Total | Lg/Lts                   | Heavies | Total | Lg/Lts | Heavies | Total | Lg/Lts | Heavies | Total |
| Time Period    |                            |         |       |                             |         |       |                          |         |       |                            |         |       |                          |         |       |                          |         |       |        |         |       |        |         |       |
| 7:00 to 7:15   | 1                          | 0       | 1     | 9                           | 0       | 9     | 0                        | 0       | 0     | 12                         | 0       | 12    | 27                       | 14      | 41    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 7:15 to 7:30   | 0                          | 0       | 0     | 9                           | 0       | 9     | 0                        | 0       | 0     | 26                         | 3       | 29    | 24                       | 13      | 37    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 7:30 to 7:45   | 3                          | 0       | 3     | 7                           | 0       | 7     | 0                        | 0       | 0     | 15                         | 0       | 15    | 30                       | 11      | 41    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 7:45 to 8:00   | 0                          | 0       | 0     | 9                           | 0       | 9     | 0                        | 0       | 0     | 28                         | 1       | 29    | 35                       | 12      | 47    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 8:00 to 8:15   | 1                          | 0       | 1     | 14                          | 0       | 14    | 0                        | 0       | 0     | 21                         | 0       | 21    | 30                       | 11      | 41    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 8:15 to 8:30   | 3                          | 0       | 3     | 7                           | 0       | 7     | 0                        | 0       | 0     | 35                         | 0       | 35    | 31                       | 9       | 40    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 8:30 to 8:45   | 1                          | 1       | 2     | 10                          | 0       | 10    | 0                        | 0       | 0     | 22                         | 2       | 24    | 40                       | 3       | 43    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 8:45 to 9:00   | 1                          | 0       | 1     | 5                           | 0       | 5     | 0                        | 0       | 0     | 20                         | 0       | 20    | 52                       | 15      | 67    | 1                        | 0       | 1     | 0      | 0       | 0     | 0      | 0       | 0     |
| AM Totals      | 10                         | 1       | 11    | 70                          | 0       | 70    | 0                        | 0       | 0     | 179                        | 6       | 185   | 269                      | 54      | 323   | 1                        | 0       | 1     | 0      | 0       | 0     | 0      | 0       | 0     |
| 9:00 to 9:15   | 2                          | 0       | 2     | 13                          | 0       | 13    | 0                        | 0       | 0     | 9                          | 0       | 9     | 32                       | 4       | 36    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 9:15 to 9:30   | 2                          | 0       | 2     | 18                          | 0       | 18    | 0                        | 0       | 0     | 9                          | 0       | 9     | 39                       | 7       | 45    | 2                        | 0       | 2     | 0      | 0       | 0     | 0      | 0       | 0     |
| 9:30 to 9:45   | 0                          | 0       | 0     | 28                          | 0       | 28    | 0                        | 0       | 0     | 11                         | 0       | 11    | 47                       | 6       | 53    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 9:45 to 10:00  | 2                          | 0       | 2     | 15                          | 0       | 15    | 0                        | 0       | 0     | 5                          | 0       | 5     | 48                       | 3       | 51    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 10:00 to 10:15 | 1                          | 0       | 1     | 33                          | 0       | 33    | 0                        | 0       | 0     | 15                         | 0       | 15    | 44                       | 4       | 48    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 10:15 to 10:30 | 3                          | 0       | 3     | 36                          | 0       | 36    | 0                        | 0       | 0     | 12                         | 0       | 12    | 49                       | 4       | 53    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 10:30 to 10:45 | 3                          | 0       | 3     | 21                          | 0       | 21    | 0                        | 0       | 0     | 6                          | 0       | 6     | 56                       | 3       | 59    | 0                        | 0       | 0     | 0      | 0       | 0     | 0      | 0       | 0     |
| 10:45 to 11:00 | 2                          | 0       | 2     | 12                          | 0       | 12    | 0                        | 0       | 0     | 7                          | 0       | 7     | 52                       | 6       | 58    | 1                        | 0       | 1     | 0      | 0       | 0     | 0      | 0       | 0     |
| PM Totals      | 15                         | 0       | 15    | 177                         | 0       | 177   | 0                        | 0       | 0     | 74                         | 0       | 74    | 366                      | 37      | 403   | 3                        | 0       | 3     | 0      | 0       | 0     | 0      | 0       | 0     |

| Approach       | Hollinsworth Rd           |         |       |                              |         |       |                           |         |       |        |         |       |
|----------------|---------------------------|---------|-------|------------------------------|---------|-------|---------------------------|---------|-------|--------|---------|-------|
|                | Direction L1<br>(Through) |         |       | Direction L2<br>(Right Turn) |         |       | Direction L2U<br>(U Turn) |         |       |        |         |       |
|                | Lights                    | Heavies | Total | Lights                       | Heavies | Total | Lights                    | Heavies | Total | Lights | Heavies | Total |
| Time Period    |                           |         |       |                              |         |       |                           |         |       |        |         |       |
| 7:00 to 7:15   | 14                        | 1       | 15    | 0                            | 0       | 0     | 1                         | 1       | 2     | 0      | 0       | 0     |
| 7:15 to 7:30   | 14                        | 1       | 15    | 0                            | 0       | 0     | 1                         | 1       | 2     | 0      | 0       | 0     |
| 7:30 to 7:45   | 26                        | 6       | 32    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 7:45 to 8:00   | 12                        | 6       | 18    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 8:00 to 8:15   | 20                        | 2       | 22    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 8:15 to 8:30   | 11                        | 2       | 13    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 8:30 to 8:45   | 11                        | 1       | 12    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 8:45 to 9:00   | 15                        | 1       | 16    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| AM Totals      | 106                       | 12      | 118   | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 9:00 to 9:15   | 20                        | 2       | 22    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 9:15 to 9:30   | 14                        | 1       | 15    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 9:30 to 9:45   | 14                        | 1       | 15    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 9:45 to 10:00  | 26                        | 6       | 32    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 10:00 to 10:15 | 12                        | 6       | 18    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 10:15 to 10:30 | 20                        | 2       | 22    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 10:30 to 10:45 | 11                        | 2       | 13    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| 10:45 to 11:00 | 11                        | 1       | 12    | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |
| PM Totals      | 157                       | 17      | 174   | 0                            | 0       | 0     | 0                         | 0       | 0     | 0      | 0       | 0     |

Job No. : NS370  
 Client : Multipro Consultants  
 Suburb : Marsden Park  
 Location : 2. Hollinsworth Rd / Ahmadiyya Cr



Day/Date : Wed, 23rd October 2019  
 Weather : Fine  
 Description : Classified Intersection Count  
 : Hourly Summary



| Approach       | Ahmadiyya Cr               |       |       |                             |       |       |                          |       |       | Hollinsworth Rd            |       |       |                          |       |       |                          |       |       |
|----------------|----------------------------|-------|-------|-----------------------------|-------|-------|--------------------------|-------|-------|----------------------------|-------|-------|--------------------------|-------|-------|--------------------------|-------|-------|
| Direction      | Direction 1<br>(Left Turn) |       |       | Direction 3<br>(Right Turn) |       |       | Direction 3U<br>(U Turn) |       |       | Direction 4<br>(Left Turn) |       |       | Direction 5<br>(Through) |       |       | Direction 6U<br>(U Turn) |       |       |
| Time Period    | Lights                     | Heavy | Total | Lights                      | Heavy | Total | Lights                   | Heavy | Total | Lights                     | Heavy | Total | Lights                   | Heavy | Total | Lights                   | Heavy | Total |
| 7:00 to 8:00   | 4                          | 0     | 4     | 34                          | 0     | 34    | 0                        | 0     | 0     | 81                         | 4     | 85    | 78                       | 50    | 128   | 0                        | 0     | 0     |
| 7:15 to 8:15   | 4                          | 0     | 4     | 39                          | 0     | 39    | 0                        | 0     | 0     | 90                         | 4     | 94    | 113                      | 47    | 160   | 0                        | 0     | 0     |
| 7:30 to 8:30   | 7                          | 0     | 7     | 37                          | 0     | 37    | 0                        | 0     | 0     | 100                        | 1     | 101   | 126                      | 43    | 169   | 0                        | 0     | 0     |
| 7:45 to 8:45   | 5                          | 1     | 6     | 40                          | 0     | 40    | 0                        | 0     | 0     | 107                        | 3     | 110   | 136                      | 41    | 177   | 0                        | 0     | 0     |
| 8:00 to 9:00   | 6                          | 1     | 7     | 36                          | 0     | 36    | 0                        | 0     | 0     | 98                         | 2     | 100   | 153                      | 44    | 197   | 1                        | 0     | 1     |
| AM Totals      | 10                         | 1     | 11    | 70                          | 0     | 70    | 0                        | 0     | 0     | 179                        | 6     | 185   | 269                      | 94    | 363   | 1                        | 0     | 1     |
| 9:00 to 10:00  | 6                          | 0     | 6     | 75                          | 0     | 75    | 0                        | 0     | 0     | 34                         | 0     | 34    | 95                       | 20    | 115   | 2                        | 0     | 2     |
| 10:15 to 11:15 | 5                          | 0     | 5     | 95                          | 0     | 95    | 0                        | 0     | 0     | 40                         | 0     | 40    | 177                      | 20    | 197   | 2                        | 0     | 2     |
| 11:30 to 12:30 | 6                          | 0     | 6     | 113                         | 0     | 113   | 0                        | 0     | 0     | 43                         | 0     | 43    | 189                      | 17    | 206   | 0                        | 0     | 0     |
| 12:45 to 1:45  | 5                          | 0     | 5     | 105                         | 0     | 105   | 0                        | 0     | 0     | 36                         | 0     | 36    | 157                      | 14    | 171   | 0                        | 0     | 0     |
| 1:00 to 2:00   | 9                          | 0     | 9     | 102                         | 0     | 102   | 0                        | 0     | 0     | 40                         | 0     | 40    | 201                      | 17    | 218   | 1                        | 0     | 1     |
| PM Totals      | 15                         | 0     | 15    | 177                         | 0     | 177   | 0                        | 0     | 0     | 74                         | 0     | 74    | 366                      | 37    | 403   | 3                        | 0     | 3     |

| Approach       | Hollinsworth Rd           |       |       |                              |       |       |                          |       |       |
|----------------|---------------------------|-------|-------|------------------------------|-------|-------|--------------------------|-------|-------|
| Direction      | Direction 1L<br>(Through) |       |       | Direction 1R<br>(Right Turn) |       |       | Direction 1U<br>(U Turn) |       |       |
| Time Period    | Lights                    | Heavy | Total | Lights                       | Heavy | Total | Lights                   | Heavy | Total |
| 7:00 to 8:00   | 42                        | 0     | 42    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| 7:15 to 8:15   | 43                        | 0     | 43    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| 7:30 to 8:30   | 43                        | 0     | 43    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| 7:45 to 8:45   | 43                        | 0     | 43    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| 8:00 to 9:00   | 43                        | 0     | 43    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| AM Totals      | 171                       | 0     | 171   | 0                            | 0     | 0     | 0                        | 0     | 0     |
| 9:00 to 10:00  | 43                        | 0     | 43    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| 10:15 to 11:15 | 43                        | 0     | 43    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| 11:30 to 12:30 | 43                        | 0     | 43    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| 12:45 to 1:45  | 43                        | 0     | 43    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| 1:00 to 2:00   | 43                        | 0     | 43    | 0                            | 0     | 0     | 0                        | 0     | 0     |
| PM Totals      | 171                       | 0     | 171   | 0                            | 0     | 0     | 0                        | 0     | 0     |

# Marsden Park IC - Traffic Flows

Search by Time and Classification

Day

Mon

Start Time

8:30

End Time

9:30

Classification

2-Way



Volume Forecasting

• 0 = Original Survey Data
   
 (+/- input 20 for volume increase or 20 for volume decrease 20%)

Turning Movements

Flow diagram

1 Site No.





Intersection of Hollinsworth Road with Chifley Glade / Bells Glade, Marsden Park

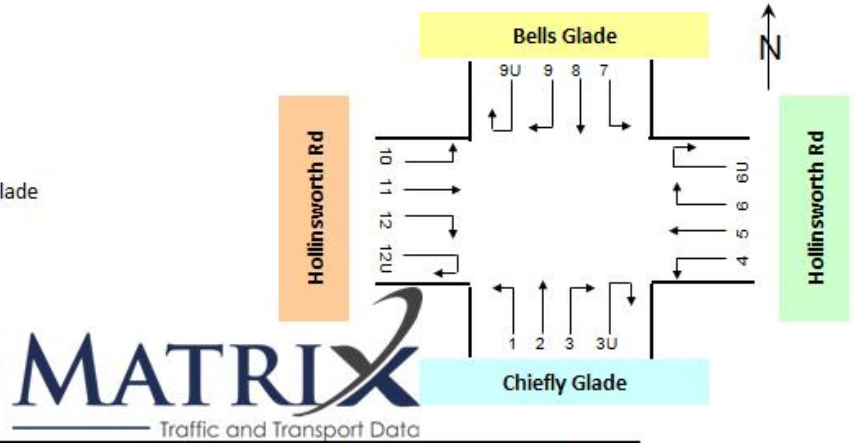
Job No. : N5370  
 Client : Multipro Consultants  
 Suburb : Marsden Park  
 Location : 1. Hollinsworth Rd / Chifley Glade

Day/Date : Wed, 23rd October 2019

Weather : Fine

Description : Classified Intersection Count

Peak Hour Summary



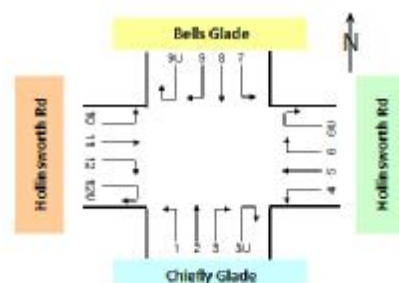
| Approach    |                | Chifley Glade |         |       | Hollinsworth Rd |         |       | Bells Glade |         |       | Hollinsworth Rd |         |       | Grand Total |
|-------------|----------------|---------------|---------|-------|-----------------|---------|-------|-------------|---------|-------|-----------------|---------|-------|-------------|
| Time Period |                | Lights        | Heavies | Total | Lights          | Heavies | Total | Lights      | Heavies | Total | Lights          | Heavies | Total |             |
| M           | 8:00 to 9:00   | 306           | 31      | 337   | 382             | 41      | 423   | 51          | 11      | 62    | 255             | 50      | 305   | 1,127       |
| M           | 16:30 to 17:30 | 667           | 12      | 679   | 325             | 16      | 341   | 165         | 5       | 170   | 348             | 20      | 368   | 1,558       |

| Approach       |  | Chifley Glade |         |       | Hollinsworth Rd |         |       | Bells Glade |         |       | Hollinsworth Rd |         |       | Grand Total |
|----------------|--|---------------|---------|-------|-----------------|---------|-------|-------------|---------|-------|-----------------|---------|-------|-------------|
| Time Period    |  | Lights        | Heavies | Total | Lights          | Heavies | Total | Lights      | Heavies | Total | Lights          | Heavies | Total |             |
| 7:00 to 8:00   |  | 224           | 32      | 256   | 240             | 46      | 286   | 14          | 9       | 23    | 176             | 32      | 208   | 773         |
| 7:15 to 8:15   |  | 236           | 28      | 264   | 276             | 45      | 321   | 17          | 4       | 21    | 208             | 31      | 239   | 845         |
| 7:30 to 8:30   |  | 244           | 31      | 275   | 314             | 36      | 350   | 21          | 7       | 28    | 242             | 43      | 285   | 938         |
| 7:45 to 8:45   |  | 278           | 33      | 311   | 357             | 38      | 395   | 34          | 10      | 44    | 267             | 46      | 313   | 1,063       |
| 8:00 to 9:00   |  | 306           | 31      | 337   | 382             | 41      | 423   | 51          | 11      | 62    | 255             | 50      | 305   | 1,127       |
| AM Totals      |  | 530           | 63      | 593   | 622             | 87      | 709   | 65          | 20      | 85    | 431             | 82      | 513   | 1,900       |
| 16:00 to 17:00 |  | 587           | 17      | 604   | 364             | 19      | 383   | 174         | 6       | 180   | 314             | 24      | 338   | 1,505       |
| 16:15 to 17:15 |  | 632           | 14      | 646   | 351             | 16      | 367   | 178         | 4       | 182   | 336             | 24      | 360   | 1,555       |
| 16:30 to 17:30 |  | 667           | 12      | 679   | 325             | 16      | 341   | 165         | 5       | 170   | 348             | 20      | 368   | 1,558       |
| 16:45 to 17:45 |  | 677           | 7       | 684   | 326             | 15      | 341   | 164         | 3       | 167   | 319             | 25      | 344   | 1,536       |
| 17:00 to 18:00 |  | 690           | 7       | 697   | 326             | 19      | 345   | 150         | 4       | 154   | 297             | 23      | 320   | 1,516       |
| PM Totals      |  | 1,277         | 24      | 1,301 | 690             | 38      | 728   | 324         | 10      | 334   | 611             | 47      | 658   | 3,021       |

| Approach  |               | Belle Glade                |        |       |                          |        |       |                             |        |       |                             |        |       | Halliwayworth Rd            |        |       |                           |        |       |                              |        |       |                              |        |       |
|-----------|---------------|----------------------------|--------|-------|--------------------------|--------|-------|-----------------------------|--------|-------|-----------------------------|--------|-------|-----------------------------|--------|-------|---------------------------|--------|-------|------------------------------|--------|-------|------------------------------|--------|-------|
| Direction | Time Period   | Direction 7<br>(left turn) |        |       | Direction 8<br>(through) |        |       | Direction 9<br>(right turn) |        |       | Direction 10<br>(left turn) |        |       | Direction 10<br>(left turn) |        |       | Direction 11<br>(through) |        |       | Direction 12<br>(right turn) |        |       | Direction 12U<br>(left turn) |        |       |
|           |               | Light                      | Leaves | Total | Light                    | Leaves | Total | Light                       | Leaves | Total | Light                       | Leaves | Total | Light                       | Leaves | Total | Light                     | Leaves | Total | Light                        | Leaves | Total | Light                        | Leaves | Total |
|           | 7:00 A 7:15   | 1                          | 0      | 1     | 1                        | 1      | 2     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                           | 0      | 1     | 2                         | 0      | 2     | 1                            | 0      | 1     | 1                            | 0      | 1     |
|           | 7:15 V 7:30   | 1                          | 1      | 2     | 1                        | 1      | 2     | 1                           | 1      | 2     | 1                           | 1      | 2     | 1                           | 1      | 2     | 1                         | 1      | 2     | 1                            | 1      | 2     | 1                            | 1      | 2     |
|           | 7:30 V 7:45   | 0                          | 0      | 0     | 1                        | 0      | 1     | 1                           | 1      | 2     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                         | 2      | 1     | 1                            | 2      | 1     | 0                            | 1      | 1     |
|           | 7:45 X 8:00   | 1                          | 1      | 2     | 2                        | 1      | 3     | 2                           | 0      | 2     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                         | 2      | 1     | 1                            | 2      | 1     | 0                            | 1      | 1     |
|           | 8:00 A 8:15   | 2                          | 1      | 3     | 1                        | 0      | 1     | 1                           | 2      | 3     | 1                           | 0      | 1     | 1                           | 0      | 1     | 2                         | 1      | 3     | 1                            | 1      | 2     | 1                            | 0      | 1     |
|           | 8:15 X 8:30   | 1                          | 1      | 2     | 2                        | 2      | 4     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                           | 0      | 1     | 2                         | 1      | 3     | 1                            | 1      | 2     | 1                            | 0      | 1     |
|           | 8:30 V 8:45   | 1                          | 0      | 1     | 1                        | 1      | 2     | 1                           | 1      | 2     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                         | 2      | 1     | 1                            | 2      | 1     | 0                            | 1      | 1     |
|           | 8:45 X 9:00   | 0                          | 0      | 0     | 1                        | 0      | 1     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                         | 2      | 1     | 1                            | 2      | 1     | 0                            | 1      | 1     |
| AM Totals |               | 26                         | 13     | 39    | 21                       | 5      | 26    | 17                          | 2      | 19    | 1                           | 0      | 1     | 18                          | 2      | 20    | 127                       | 63     | 190   | 286                          | 17     | 308   | 0                            | 0      | 0     |
|           | 9:00 A 9:15   | 1                          | 0      | 1     | 2                        | 2      | 4     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                           | 0      | 1     | 2                         | 1      | 3     | 1                            | 1      | 2     | 1                            | 0      | 1     |
|           | 9:15 V 9:30   | 1                          | 1      | 2     | 1                        | 1      | 2     | 1                           | 1      | 2     | 1                           | 1      | 2     | 1                           | 1      | 2     | 1                         | 2      | 3     | 1                            | 1      | 2     | 1                            | 1      | 2     |
|           | 9:30 V 9:45   | 0                          | 0      | 0     | 1                        | 0      | 1     | 1                           | 1      | 2     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                         | 2      | 1     | 1                            | 2      | 1     | 0                            | 1      | 1     |
|           | 9:45 X 10:00  | 1                          | 0      | 1     | 2                        | 0      | 2     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                           | 0      | 1     | 1                         | 2      | 1     | 1                            | 2      | 1     | 0                            | 1      | 1     |
|           | 10:00 A 10:15 | 2                          | 0      | 2     | 1                        | 0      | 1     | 1                           | 1      | 2     | 1                           | 0      | 1     | 1                           | 0      | 1     | 2                         | 1      | 3     | 1                            | 1      | 2     | 1                            | 0      | 1     |
|           | 10:15 X 10:30 | 2                          | 2      | 4     | 1                        | 0      | 1     | 1                           | 2      | 3     | 1                           | 0      | 1     | 1                           | 0      | 1     | 2                         | 1      | 3     | 1                            | 1      | 2     | 1                            | 0      | 1     |
|           | 10:30 V 10:45 | 1                          | 1      | 2     | 1                        | 0      | 1     | 1                           | 1      | 2     | 1                           | 0      | 1     | 1                           | 0      | 1     | 2                         | 1      | 3     | 1                            | 1      | 2     | 1                            | 0      | 1     |
|           | 10:45 X 11:00 | 1                          | 1      | 2     | 1                        | 0      | 1     | 1                           | 1      | 2     | 1                           | 0      | 1     | 1                           | 0      | 1     | 2                         | 1      | 3     | 1                            | 1      | 2     | 1                            | 0      | 1     |
| PM Totals |               | 152                        | 8      | 160   | 122                      | 2      | 124   | 50                          | 0      | 50    | 0                           | 0      | 0     | 51                          | 1      | 52    | 259                       | 96     | 355   | 298                          | 10     | 308   | 3                            | 0      | 3     |

Job No. : N5370  
 Client : Multipro Consultants  
 Suburb : Marsden Park  
 Location : 1. Hollinsworth Rd / Chieffy Glade

Day/Date : Wed, 23rd October 2019  
 Weather : Fine  
 Description : Classified Intersection Count  
 : Hourly Summary



| Approach       | Chieffy Glade              |         |       |                          |         |       |                             |         |       |                          |         |       | Hollinsworth Rd            |         |       |                          |         |       |                             |         |       |                          |         |       |
|----------------|----------------------------|---------|-------|--------------------------|---------|-------|-----------------------------|---------|-------|--------------------------|---------|-------|----------------------------|---------|-------|--------------------------|---------|-------|-----------------------------|---------|-------|--------------------------|---------|-------|
| Direction      | Direction 1<br>(Left Turn) |         |       | Direction 2<br>(Through) |         |       | Direction 3<br>(Right Turn) |         |       | Direction 3U<br>(U Turn) |         |       | Direction 4<br>(Left Turn) |         |       | Direction 5<br>(Through) |         |       | Direction 6<br>(Right Turn) |         |       | Direction 6U<br>(U Turn) |         |       |
| Time Period    | Lights                     | Heavies | Total | Lights                   | Heavies | Total | Lights                      | Heavies | Total | Lights                   | Heavies | Total | Lights                     | Heavies | Total | Lights                   | Heavies | Total | Lights                      | Heavies | Total | Lights                   | Heavies | Total |
| 7:00 to 8:00   | 126                        | 21      | 145   | 31                       | 1       | 32    | 62                          | 7       | 69    | 3                        | 3       | 6     | 65                         | 4       | 73    | 66                       | 32      | 100   | 54                          | 7       | 61    | 31                       | 3       | 34    |
| 7:15 to 8:15   | 137                        | 18      | 155   | 29                       | 1       | 30    | 62                          | 7       | 69    | 8                        | 2       | 10    | 83                         | 5       | 94    | 80                       | 31      | 121   | 65                          | 6       | 72    | 31                       | 3       | 34    |
| 7:30 to 8:30   | 140                        | 18      | 158   | 33                       | 5       | 38    | 63                          | 7       | 70    | 8                        | 1       | 9     | 103                        | 5       | 108   | 104                      | 23      | 127   | 76                          | 5       | 81    | 31                       | 3       | 34    |
| 7:45 to 8:45   | 144                        | 18      | 162   | 42                       | 6       | 48    | 80                          | 8       | 88    | 12                       | 1       | 13    | 122                        | 4       | 126   | 117                      | 24      | 141   | 92                          | 7       | 99    | 26                       | 3       | 29    |
| 8:00 to 9:00   | 145                        | 18      | 163   | 49                       | 6       | 55    | 92                          | 7       | 99    | 20                       | 0       | 20    | 137                        | 5       | 142   | 129                      | 26      | 155   | 82                          | 8       | 90    | 24                       | 2       | 26    |
| AM Totals      | 273                        | 39      | 312   | 80                       | 7       | 87    | 154                         | 14      | 168   | 23                       | 3       | 26    | 206                        | 9       | 215   | 215                      | 58      | 273   | 146                         | 15      | 161   | 55                       | 5       | 60    |
| 16:00 to 17:00 | 142                        | 8       | 150   | 121                      | 1       | 122   | 263                         | 6       | 271   | 61                       | 0       | 61    | 205                        | 2       | 207   | 50                       | 12      | 62    | 31                          | 4       | 35    | 19                       | 1       | 15    |
| 16:15 to 17:15 | 157                        | 7       | 164   | 126                      | 1       | 129   | 286                         | 6       | 292   | 61                       | 0       | 61    | 202                        | 1       | 203   | 50                       | 13      | 63    | 82                          | 2       | 85    | 16                       | 0       | 16    |
| 16:30 to 17:30 | 170                        | 5       | 175   | 130                      | 2       | 132   | 302                         | 5       | 307   | 65                       | 0       | 65    | 195                        | 1       | 196   | 43                       | 11      | 60    | 75                          | 4       | 79    | 16                       | 0       | 16    |
| 16:45 to 17:45 | 173                        | 4       | 177   | 125                      | 2       | 131   | 310                         | 1       | 311   | 65                       | 0       | 65    | 181                        | 1       | 182   | 43                       | 10      | 53    | 61                          | 4       | 65    | 15                       | 0       | 15    |
| 17:00 to 18:00 | 173                        | 4       | 177   | 122                      | 2       | 124   | 332                         | 1       | 333   | 63                       | 0       | 63    | 183                        | 2       | 185   | 50                       | 13      | 63    | 78                          | 4       | 83    | 14                       | 0       | 14    |
| PM Totals      | 319                        | 12      | 327   | 243                      | 3       | 246   | 535                         | 5       | 544   | 124                      | 0       | 124   | 340                        | 4       | 342   | 188                      | 25      | 125   | 170                         | 8       | 178   | 32                       | 1       | 33    |

| Approach       | Bells Glade                |         |       |                          |         |       |                             |         |       |                          |         |       | Hollinsworth Rd             |         |       |                           |         |       |                              |         |       |                          |         |       |
|----------------|----------------------------|---------|-------|--------------------------|---------|-------|-----------------------------|---------|-------|--------------------------|---------|-------|-----------------------------|---------|-------|---------------------------|---------|-------|------------------------------|---------|-------|--------------------------|---------|-------|
| Direction      | Direction 7<br>(Left Turn) |         |       | Direction 8<br>(Through) |         |       | Direction 9<br>(Right Turn) |         |       | Direction 10<br>(U Turn) |         |       | Direction 11<br>(Left Turn) |         |       | Direction 12<br>(Through) |         |       | Direction 13<br>(Right Turn) |         |       | Direction 14<br>(U Turn) |         |       |
| Time Period    | Lights                     | Heavies | Total | Lights                   | Heavies | Total | Lights                      | Heavies | Total | Lights                   | Heavies | Total | Lights                      | Heavies | Total | Lights                    | Heavies | Total | Lights                       | Heavies | Total | Lights                   | Heavies | Total |
| 7:00 to 7:00   | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| 7:15 to 7:15   | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| 7:30 to 7:30   | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| 7:45 to 7:45   | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| 8:00 to 8:00   | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| AM Totals      | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| 16:00 to 16:00 | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| 16:15 to 16:15 | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| 16:30 to 16:30 | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| 16:45 to 16:45 | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| 17:00 to 17:00 | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |
| PM Totals      | 0                          | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                        | 0       | 0     | 0                           | 0       | 0     | 0                         | 0       | 0     | 0                            | 0       | 0     | 0                        | 0       | 0     |

# Marsden Park IC Traffic Flows

Search by time and classification

Day:  Start Time:  End Time:  Classification:

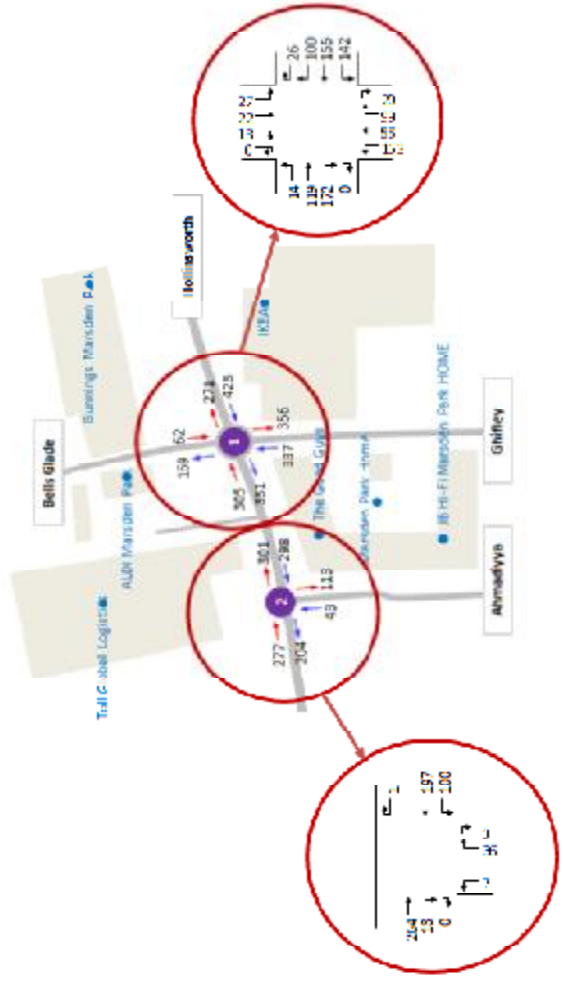
Volume Forecast:

0 - Original Survey Data  
(e.g. input 20 for volume increase 20% or 20 for volume decrease 20%)



[Turning Movements](#)  
[Flow diagram](#)

1 Site No.







### Marsden Park IC - Traffic Flows

Search By Time and Classification:

Low

Start Time

End Time

Classification

Volume Forecasting

\* U - original survey data  
(e.g. input 20 for volume increase 20% or 20 for volume decrease 10%)



1 Site No.

