Public Transport Authority

Forrestfield-Airport Link
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Forrestfield Station Multi-Storey Car Park Traffic Impact Assessment

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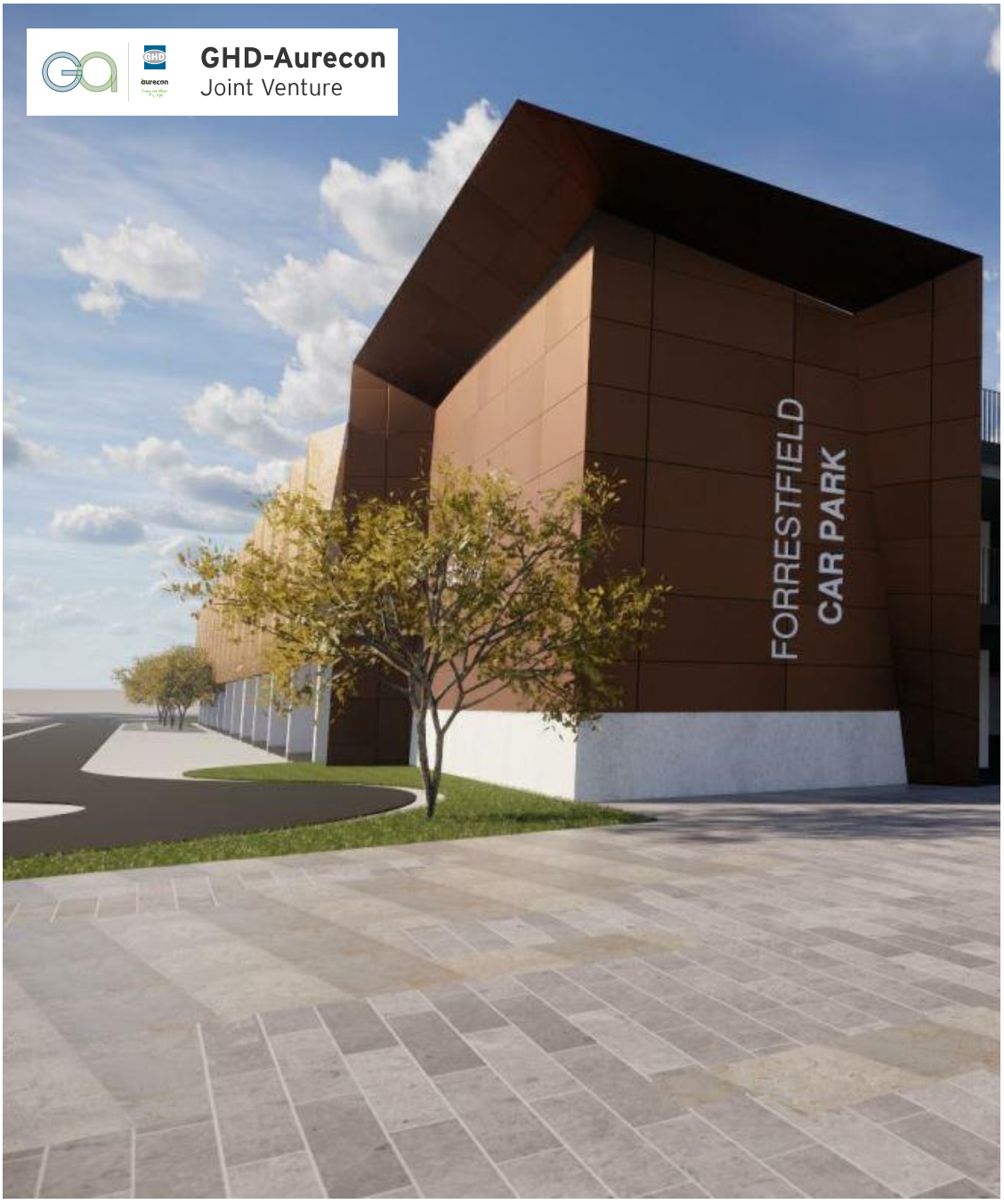

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Forrestfield Station Multi-Storey Car Park

Traffic Impact Assessment

Public Transport Authority

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Document prepared by:

Aurecon Australasia Pty Ltd
ABN 54 005 139 873
Level 5, 863 Hay Street
Perth WA 6000
Australia

T +61 8 6145 9300
F +61 8 6145 5020
E perth@aurecongroup.com
W aurecongroup.com

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Author signature		Approver signature	
Name	Wei Lun Khoo	Name	Andreas Wang
Title	Transport Modeller	Title	Senior Transport Modeller

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Appendix A – Proposed Development Plan

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1 Introduction and Background

Aurecon has been commissioned by Public Transport Authority (PTA) to prepare a Traffic Impact Assessment (TIA) in accordance with the Western Australia Planning Commission – Transport Impact Assessment Guidelines (Volume 4, Individual Developments) for the multi-storey car park as part of the future Forrestfield Station ("Station").

To accommodate the anticipated park-and-ride demand at the station, it had previously been proposed that the multi-storey car park would include a total of 2,500 parking bays. Following subsequent studies relating to the required parking quantum at the Station, this was reduced to 1,249 parking bays as this was considered sufficient to accommodate the "Park and Ride" demand by 2050 due to the TOD-nature of the area.

1.1 Forrestfield Station

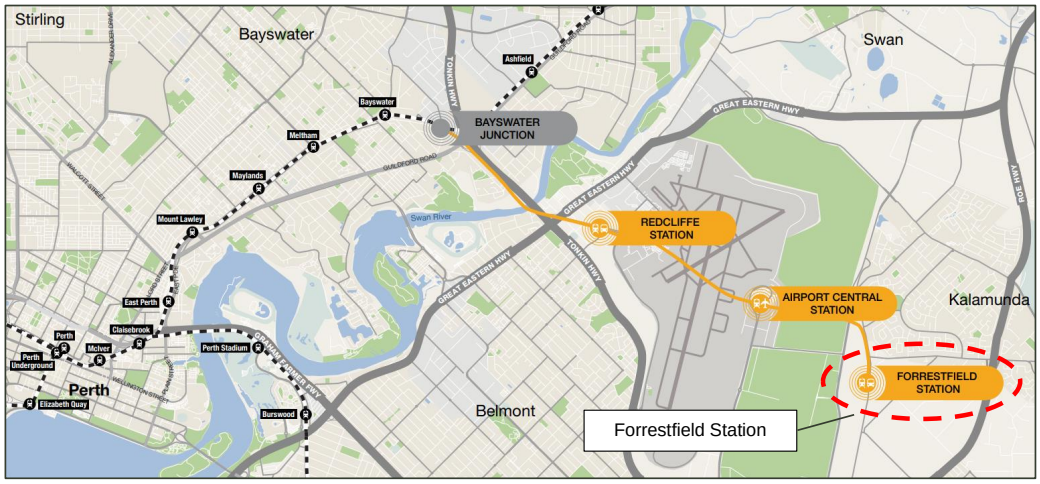


Figure 1-1: Forrestfield Station location

The Station is one of the key rail stations for the Forrestfield-Airport Link (FAL) project that was announced by the WA Government in 2014. The new rail route will open up a new rail corridor to the eastern suburbs and foothills, allowing an approximately 20-minute rail journey to Perth city. The FAL is intended to connect and improve the public transport access for the Bayswater, Belmont, Redcliffe and Forrestfield areas.

The Station is located within the Forrestfield North District Structure Plan (FNDSP) area and a Transport Assessment (Revision: Final, dated 31/08/2015) was previously prepared in support of the Structure Plan. While the Station and proposed multi-storey car park were included as part of the FNDSP, changes have since been proposed to the quantum of parking bays within the car park. The analysis undertaken as part of this TIA therefore primarily focuses on the proposed changes to the car parking quantum and re-assesses the traffic impacts to the adjacent transport network. The FNDSP TIA has been used as a reference for this TIA to ensure consistency of analysis methodology and overall structure planning for the area.

In addition, a transport modelling study (Forrestfield-Airport Link Transport Modelling, Revision: Final, dated 23/04/2015) was undertaken by Aurecon for the FAL project to assess the overall traffic impact from the Station and proposed car park on the local road network in Forrestfield. As part of this study, the traffic generation from the adjacent land use changes proposed as part of the FNDSP were included in the model. The study area for the FAL transport modelling study is shown in Figure 1-1. The FAL transport modelling report has been used as another reference for this TIA to ensure consistency of future non-development (background) traffic flows.

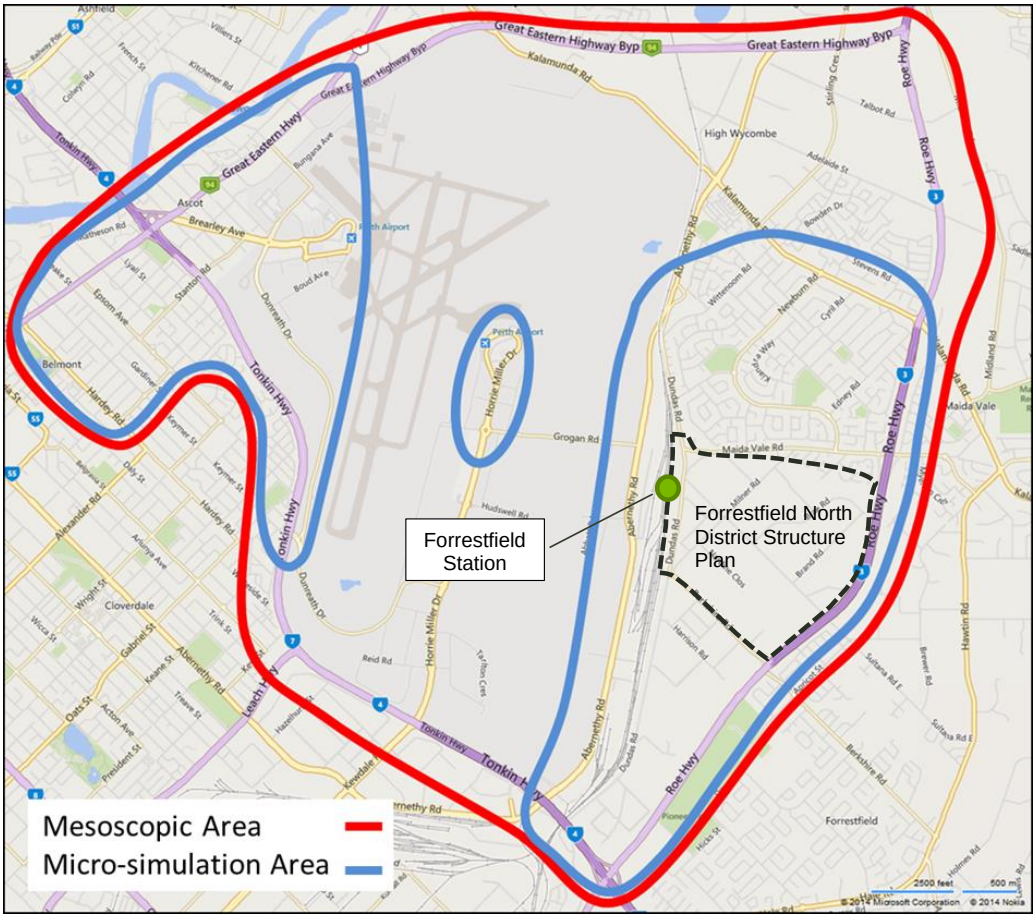


Figure 1-2: Forrestfield-Airport Link Transport Modelling study area

2 Existing Situation

2.1 Development Site and Surrounding Land Use

The development site is currently unoccupied and is surrounded by Dundas Road, Dundas Road Link, Maida Vale Road, and Ibis Place. The existing land use surrounding the site (within 400m radius) is predominantly light industrial, with some residential areas and vacant lands as shown in Figure 2-1. Within a 800m radius of the development site, there are additional residential dwellings to the north and north-east, rural residential dwellings to the south-east, and additional industrial areas to the south and west.

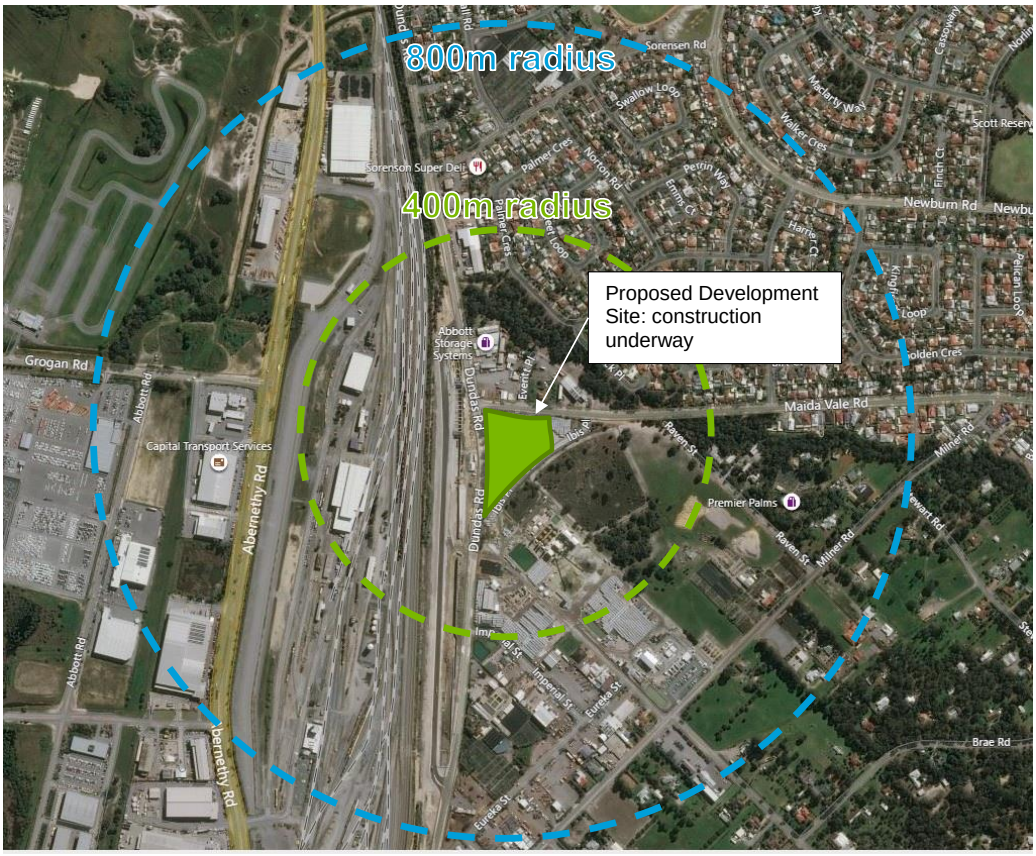


Figure 2-1: Existing land uses in the vicinity of the site

2.2 Planning Context

2.2.1 City of Kalamunda Town Planning Scheme No. 3

As defined by the City of Kalamunda Town Planning Scheme No.3, the proposed development site is designated as industrial development.

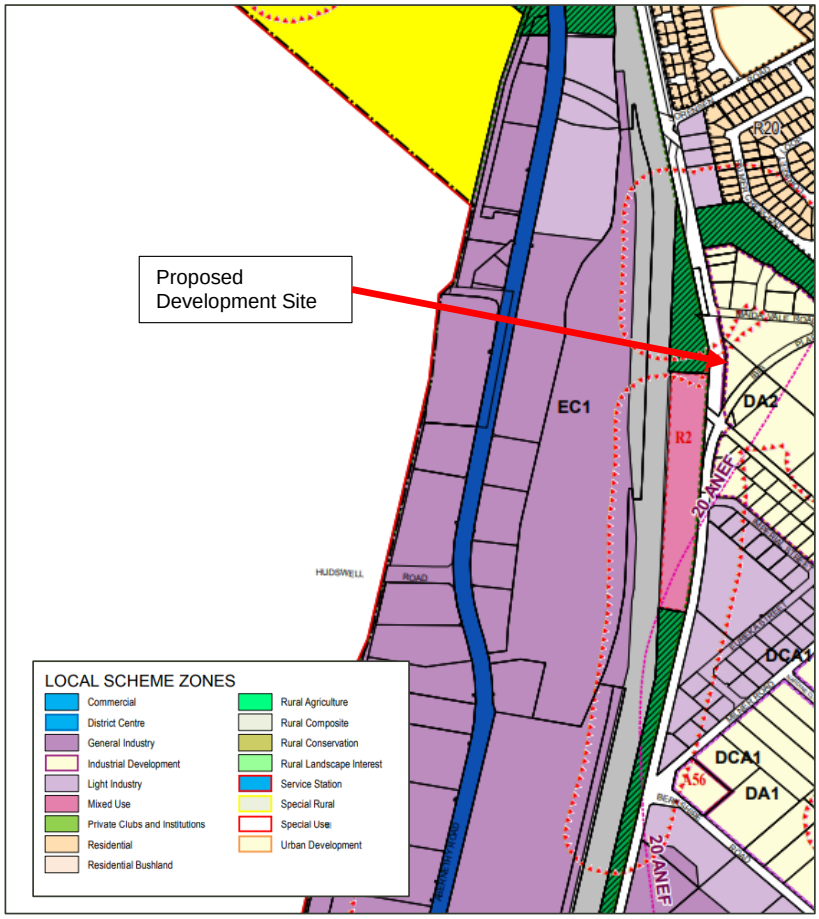


Figure 2-2: Planning zone (source: City of Kalamunda Town Planning Scheme No. 3)

2.2.2 Forrestfield North District Structure Plan

As shown in Figure 2-3, the proposed development site is designated as “Railway” land use in the FNDSP. The proposed car park is intended to only accommodate passengers using the future Forrestfield Station, which is consistent with the intended land use as part of the FNDSP.

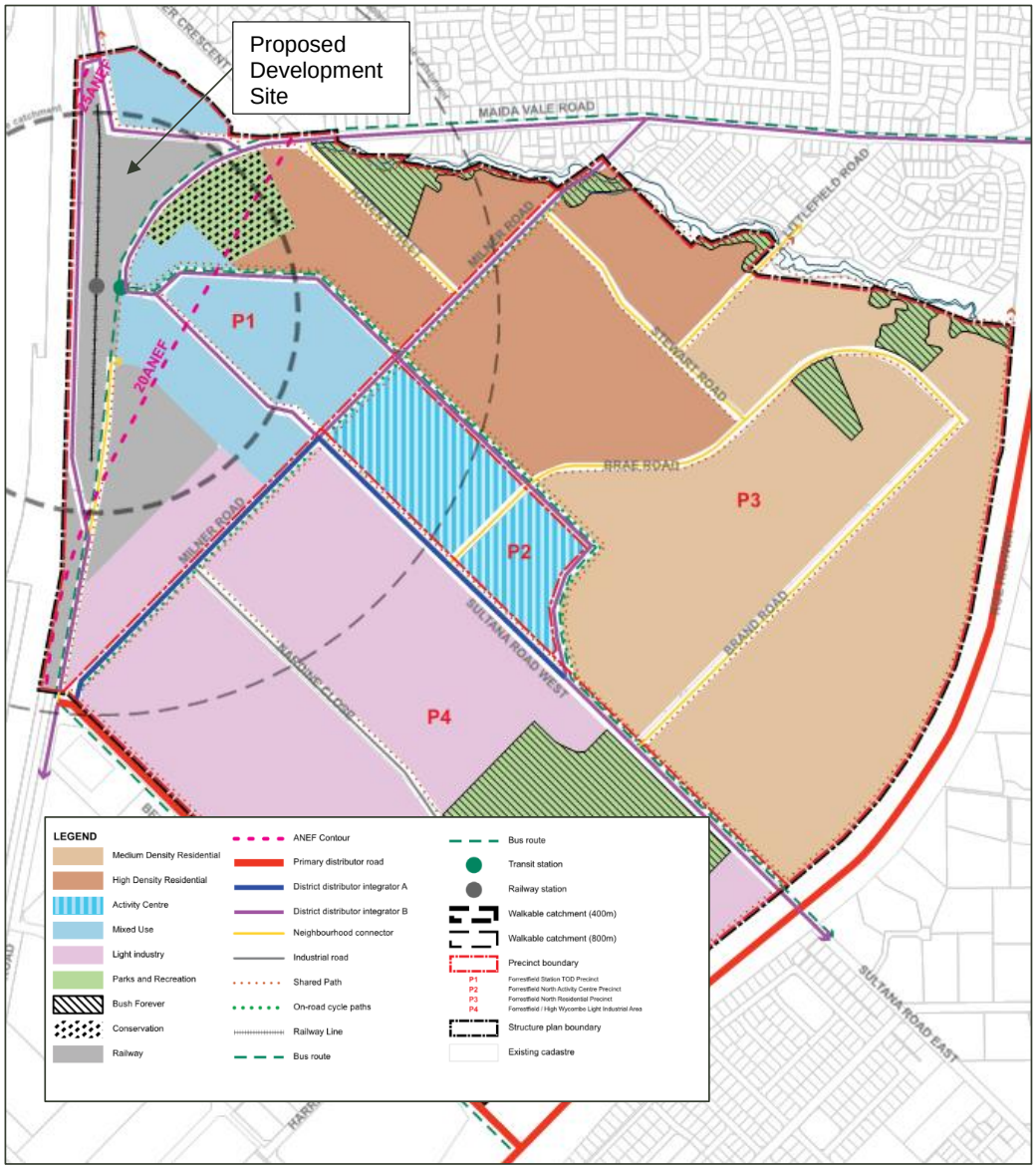


Figure 2-3: Proposed land use (Source: Forrestfield North District Structure Plan, 02/09/2015)

2.3 Existing Road Network

The proposed development site is located adjacent to Dundas Road, with Maida Vale Road, Ibis Place and Sultana Road West bordering the proposed site.

Under the Main Roads functional road hierarchy, as illustrated in Figure 2-4, Dundas Road, Dundas Road Link and Maida Vale Road are classified as Distributor B roads, while Milner Road is classified as a Local Distributor, and both Ibis Place and Sultana Road West are classified as Access Roads.

Figure 2-4: Main Roads WA Functional Road Hierarchy (Source: Main Roads Mapping Information System)

The characteristics of the key roads in the vicinity of the proposed development site are summarised below:

- **Dundas Road**

Dundas Road is currently a single carriageway with one lane in each direction between Tonkin Highway and Abernethy Road. Dundas Road carries approximately 4,800 vehicles/day (as recorded by MRWA in 2016/17), although it is noted that the volume of traffic on Dundas Road has likely changes since construction of the Station has commenced. The section of Dundas Road between Main Vale Road and Imperial Street has been removed as part of the proposed development for the Station, with Dundas Road Link being constructed to replace Dundas Road north-south connectivity. Dundas Road has a posted speed limit of 70km/h.

- **Dundas Road Link**

Dundas Road Link consists of a single undivided carriageway with one lane in each direction, joining Dundas Road to the north and south of the proposed site.

- **Maida Vale Road**

Maida Vale consists of a single undivided carriageway with one lane, and is located between Dundas Road and Hawtin Road. Maida Vale Road has a posted speed limit of 60 km/h and carries approximately 4,200 vehicles/day (west of Milner Road) as recorded by City of Kalamunda in 2013/14.

- **Milner Road**

Milner Road is an undivided single carriageway with one lane in each direction and is located between Berkshire Road and Maida Vale Road. Milner Road has a posted speed limit of 70km/ and carries approximately 2,500 vehicles/day (north of Stewart Road).

- **Ibis Place**

Ibis Place is an undivided single carriageway within one lane in each direction. Ibis Place is currently only connected to Maida Vale Road. Ibis Place has a speed limit of 50km/h. As part of the Station construction, modification are currently being undertaken to Ibis Place, which has therefore been closed for public use.

2.4 Existing Intersections

At a meeting with the City of Kalamunda and the Public Transport Authority, the following existing intersections were identified as potentially impacted by the proposed Forrestfield Station, and have therefore been assessed as part of this study:

1. Dundas Road Link/ Dundas Road north – Priority controlled three-way intersection with Dundas Road Link controlled by a yield/ give-way sign;
2. Dundas Road/ Maida Vale Road/ Construction Site Access – Priority controlled three-way intersection with Main Vale Road controlled by a yield/ give way sign;
3. Maida Vale Road/ Ibis Place – Priority controlled three-way intersection with Ibis Place controlled by yield/ give-way sign;
4. Milner Road/ Sultana Road West – Priority controlled four-way intersection with Sultana Road West controlled by a yield/ give-way sign.

These intersections are shown in Figure 2-5. In addition to the above intersections, three additional (future) key intersections have also been assessed as part of this study (refer to Section 7.2).

Figure 2-5: Key intersections within the study area

2.5 Existing Public Transport

There are currently no public transport services in the immediate vicinity of the proposed development site. As shown in Figure 2-6, the bus stop located closest to the site currently is approximately 600m north of the site and is serviced by bus service 298, which operates between the Elizabeth Quay Bus Station and a bus stop near the Hawtin Road/ Kalamunda Road intersection (east of Roe Highway). This bus service operates at low frequency that only provides three services to and from Perth in the weekday morning and evening peak periods.

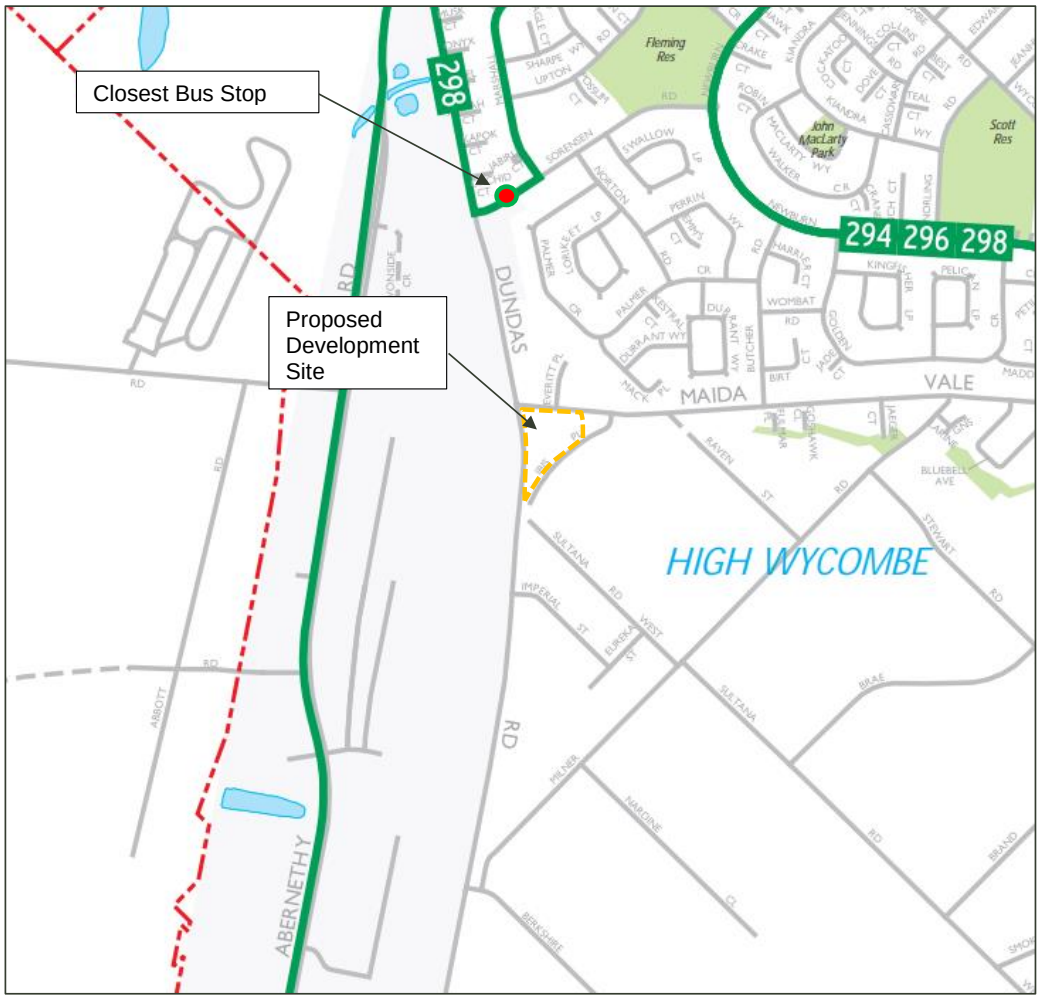


Figure 2-6: Public transport services within 800m of the proposed site (source: Transperth)

2.6 Existing Pedestrian and Cycling Facilities

In the vicinity of the proposed development site, there is currently a 1.5m wide footpath along the eastern side of Dundas Road, joining the northern side of Maida Vale Road. The footpaths along both Dundas Road and Maida Vale Road are still considered adequate for to service the existing pedestrian use.

As shown in Figure 2-7, Maida Vale Road is classified as having “good road riding environment” which suitable for on-street cycling, connecting to the other shared paths located further north.

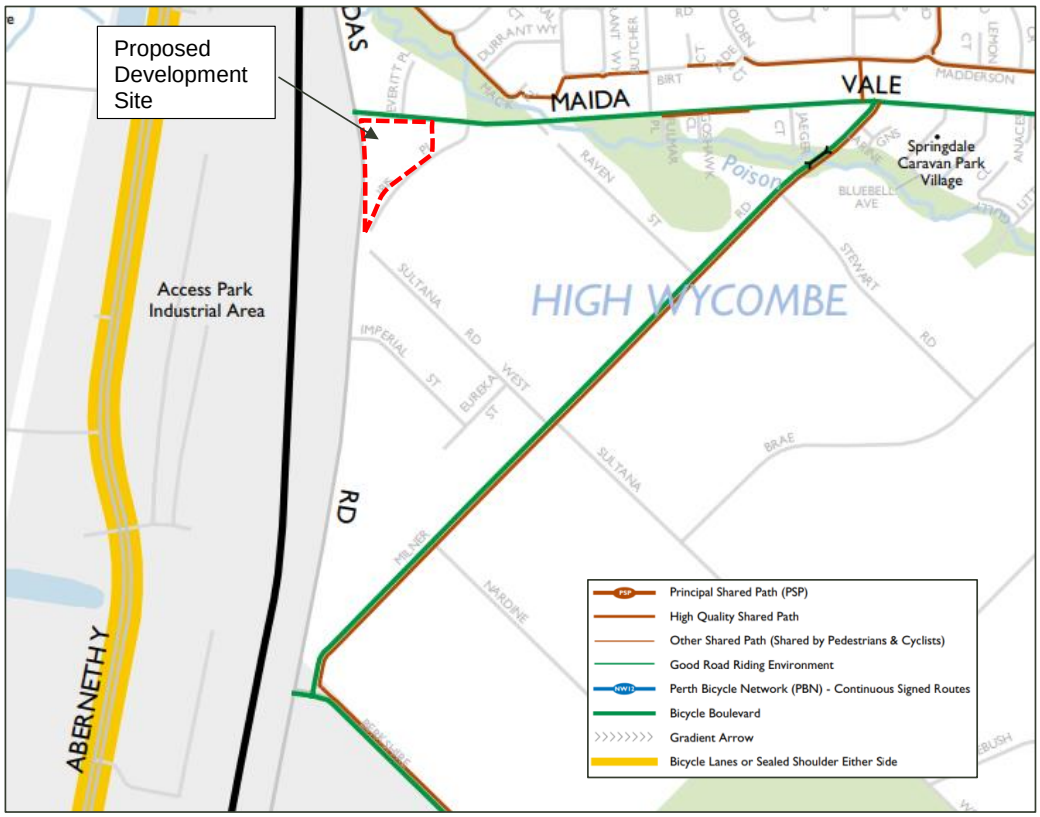


Figure 2-7: Canning and Armadale: Perth Bike Map (source: DoT, published October 2016)

3 Proposed Development

The proposed multi-storey car park will include the following:

- 52 motorcycle bays;
- 12 disability parking bays;
- 12 electric parking bays;
- 33 short-term parking bays; and
- 1,140 standard parking bays.

The layouts for the proposed multi-storey car park are included in Appendix A.

3.1 Accessible Parking Requirements

The minimum accessible parking requirements for the site are specified in the National Construction Code 2016. As shown in Table 3-1, a total of 12 accessible parking bays are proposed as part of the development and therefore complies with the minimum accessible parking requirements. A non-parking car bay will also be provided adjacent to all the disability parking bays as recommended in the *AS2890.6 Off-street Parking for People with Disabilities* guideline.

Table 3-1: Accessible Parking Requirement

User Class	Minimum Parking Rates	Car parking Provision	Minimum Accessible Parking Required	Accessible Parking Provision
Car park (Class 7a)	1 bay for every 100 car parking bays	1,185	12	12

3.2 Motorcycle Bays

The parking facility is proposed to include a total of 52 motorcycle parking bays.

3.3 Parking and Access Arrangement

Access to the proposed car park is proposed via a single entry (Access 1) on the proposed new service road (south of Dundas Road/ Maida Vale Road intersection). While vehicles will also be able to exit the parking facility at Access 1, a left-out exit is also proposed on Ibis Place (Access 2) as shown in Figure 3-1. Access 1 will be constructed to only allow left-in left-out (LILO) turn movements.

The proposed car park will include electronic signage at Access 1. This signage will display the number of available bays in order to reduce the amount of vehicles recirculating through the car park and hence reduce any congestion.

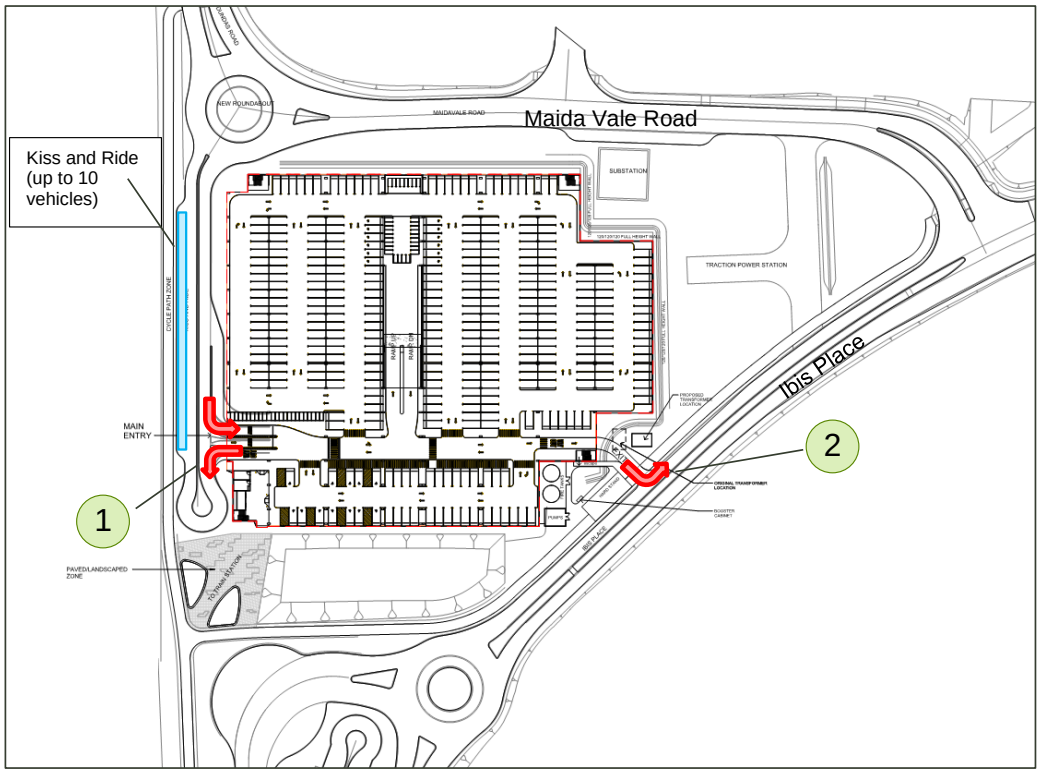


Figure 3-1: Proposed Car Park Access Arrangements

It is understood that the proposed accesses will not include any physical barriers (e.g. boom-gates) in order to minimise any traffic impact on the external road network. While it is noted that PTA may consider introduction of physical barriers at Access 1 in the future, such barriers have not been considered as part of this assessment.

3.4 Kiss and Ride Facility

As shown in Figure 3-1, the proposed service road will also include a Kiss and Ride facility on the western side of the road and can accommodate up to 10 vehicles parked at any one time.

3.5 Pedestrian Movements

The proposed passengers exit/ entry desire walking lines are shown in Figure 3-2. Passengers will be directed to enter/exit the proposed car park via the main pedestrian entrance located at the south-west.

Apart from the vertical transport adjacent to the main entrance, staircases are available at the corners of north-west, north-east and south-east, to access the each of the different levels. Pedestrian crossings are also proposed across the circulation lanes adjacent to vehicle accesses on ground floor.

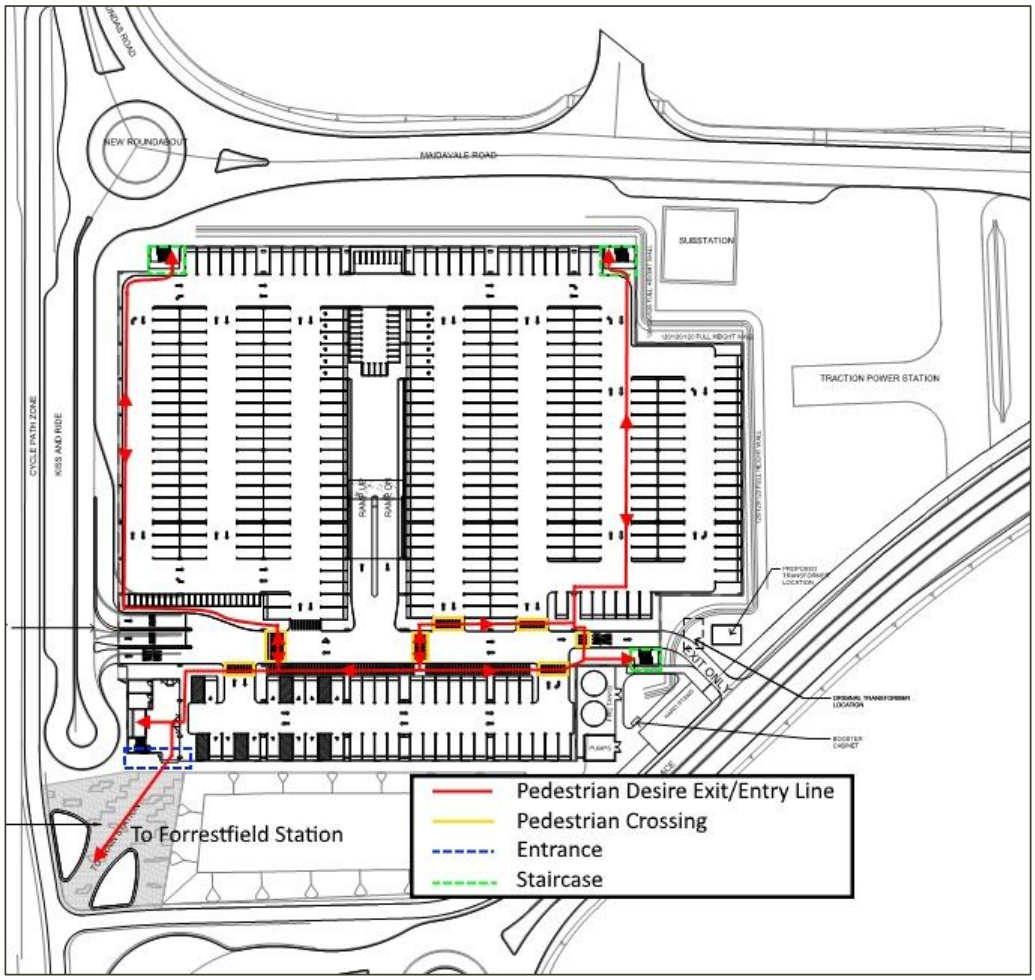


Figure 3-2: Pedestrian desired movements

3.6 End-of-trip Facilities

The proposed car park will not include any bicycle parking spaces as these will be provided at the Station in the form of bicycle shelters and U-rails. The Station is not designed to be the final destination for passengers and no shower or change-room facilities are proposed as part of the car park.

4 Changes to the Surrounding Area

4.1 Forrestfield North District Structure Plan (FNDSP)

The purpose of the structure plan is primarily to guide development around the proposed Forrestfield Station. This structure plan is progressed as two key components; the Transit Oriented Development (TOD) Precinct and Residential Precinct. As shown in Figure 4-1, the proposed development site is located within the TOD Precinct.

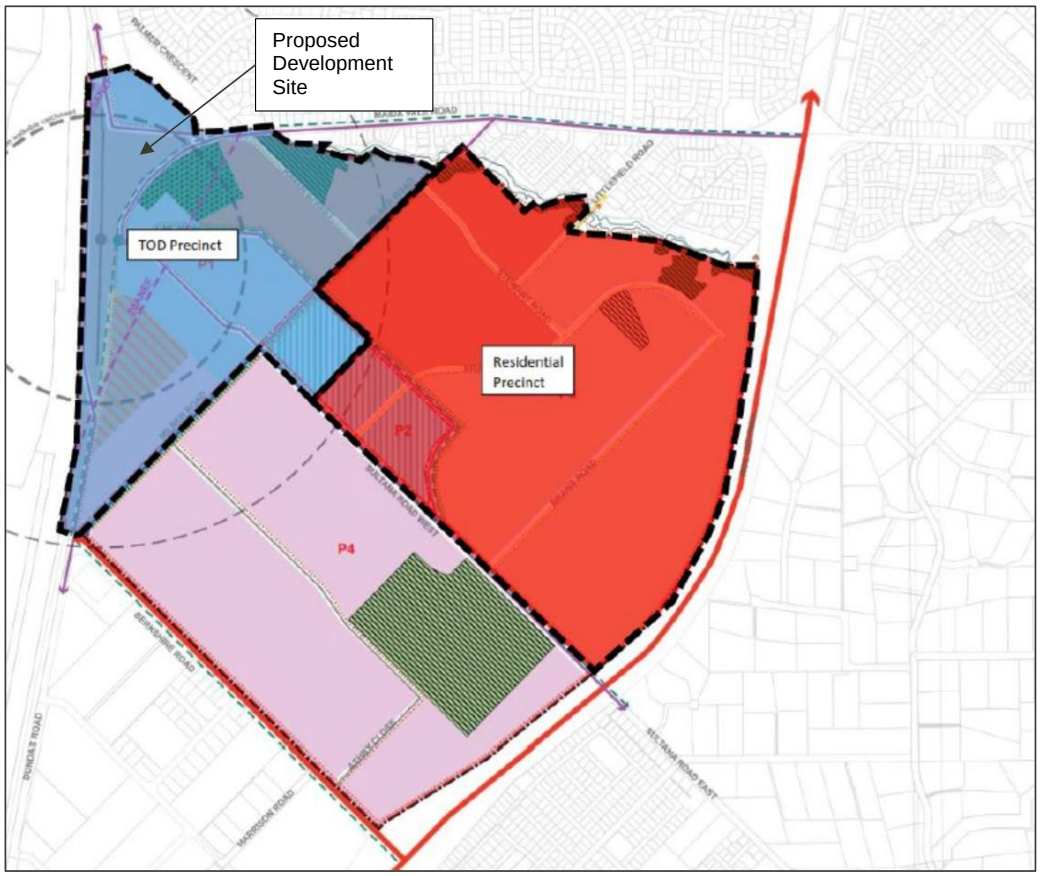


Figure 4-1: Forrestfield North District Structure Plan (source: http://www.kalamunda.wa.gov.au/Services/Planning/Major-Projects/Forrestfield-NORTH#dcp)

From the DNSCP structure plan as shown in Figure 4-2, the proposed development site will be surrounded by the Station (railway land use) to the west and mixed-use developments to the south and north, with a park and recreation area located to the west.

As part of the TOD Precinct, new shared paths are proposed along most of the corridors in the vicinity of proposed site, with the exception of the Dundas Road Link.

On-street cycle paths are also proposed along Sultana Road West, Milner Road, and the new corridor to the north of Sultana Road West. The proposed walking and cycling facilities will provide new connectivity to land uses in all direction, encouraging active mode transport as one of the crucial aspects for the TOD design.

The FNDSP also proposes some upgrades to the road network to improve the traffic circulation and connectivity towards the proposed land uses in and around the TOD, as well as the Station. The proposed intersections upgrades are as shown in Figure 4-3, while the proposed road network changes that will directly impact on the vicinity of proposed site include:

- Extension of Raven Street towards north and intersect at Maida Vale Road as a new priority-controlled intersection, with the east-west movement as the main movement;
- Realignment of Ibis Place and Maida Road on the north-east of proposed development, such that Ibis Place will become the main movement at the intersection;
- In conjunction with proposed development, removal of the northern section of Dundas Road, with the new service road to be constructed instead to provide access to the proposed development and Kiss and Ride facility, with a roundabout to be constructed at the Dundas Road/ Maida Vale Road intersection (see Figure 4-4);
- Construction of a new connection between Ibis Place and Sultana Road West
- The staggered Milner Road/ Sultana Road West intersection to be upgraded to a four-way signalised intersection (refer to Figure 4-3); and
- Sultana Road West extension to connect Sultana Road East with a fly-over Roe Highway Bridge (refer to Figure 4-2).

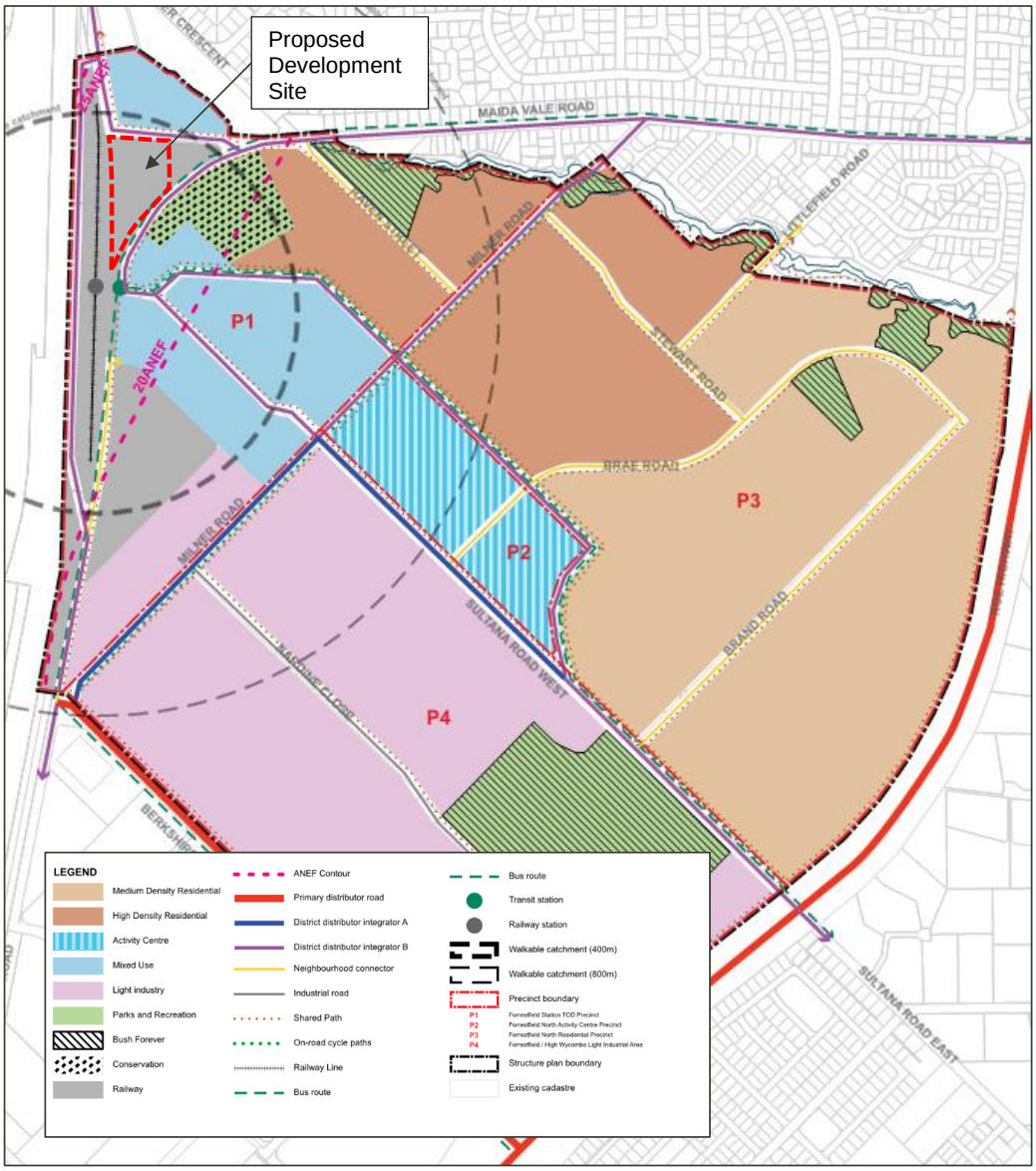


Figure 4-2: Forrestfield North District Structure Plan (City of Kalamunda)

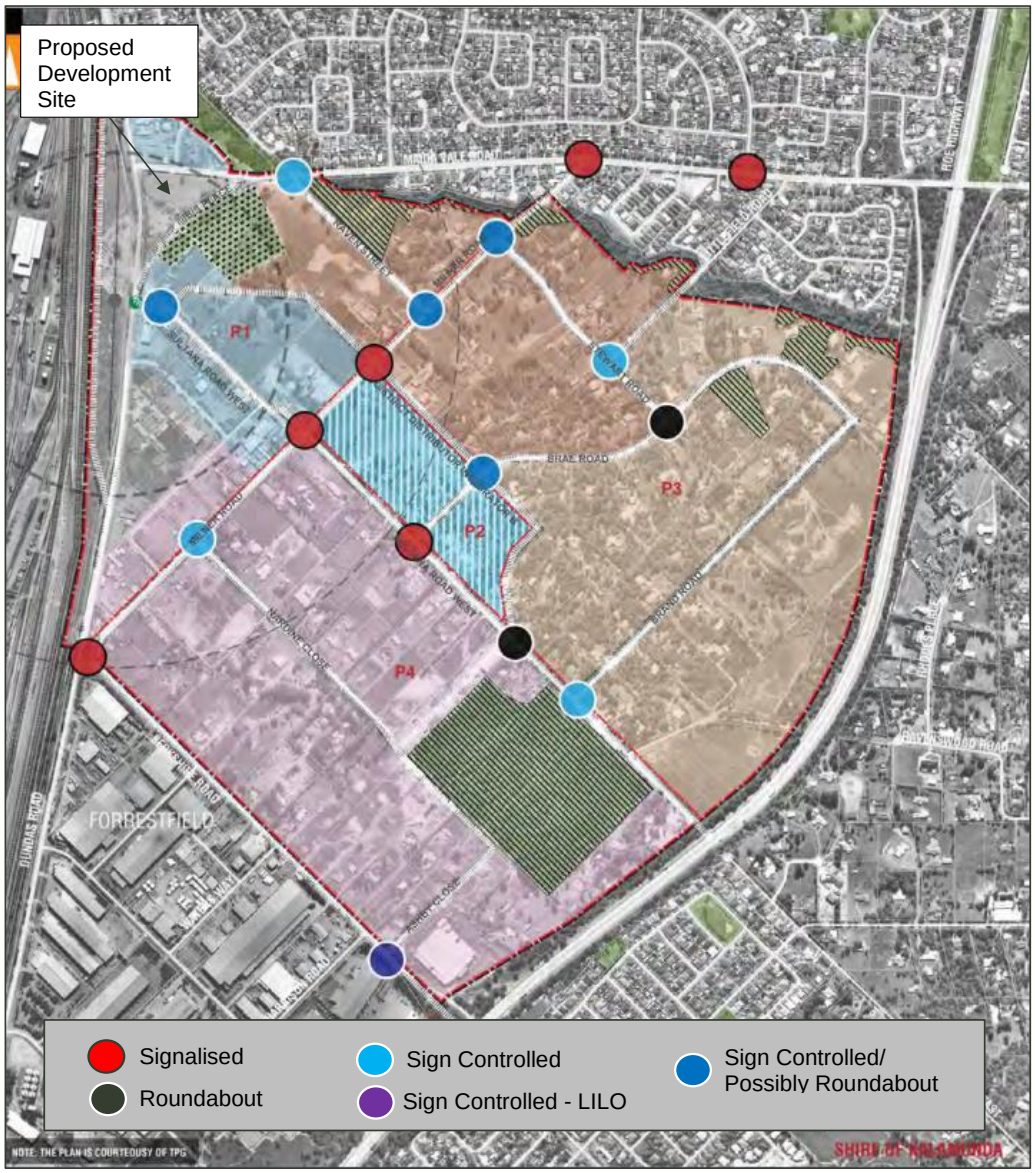


Figure 4-3: Proposed Intersection Plan within FNDSP

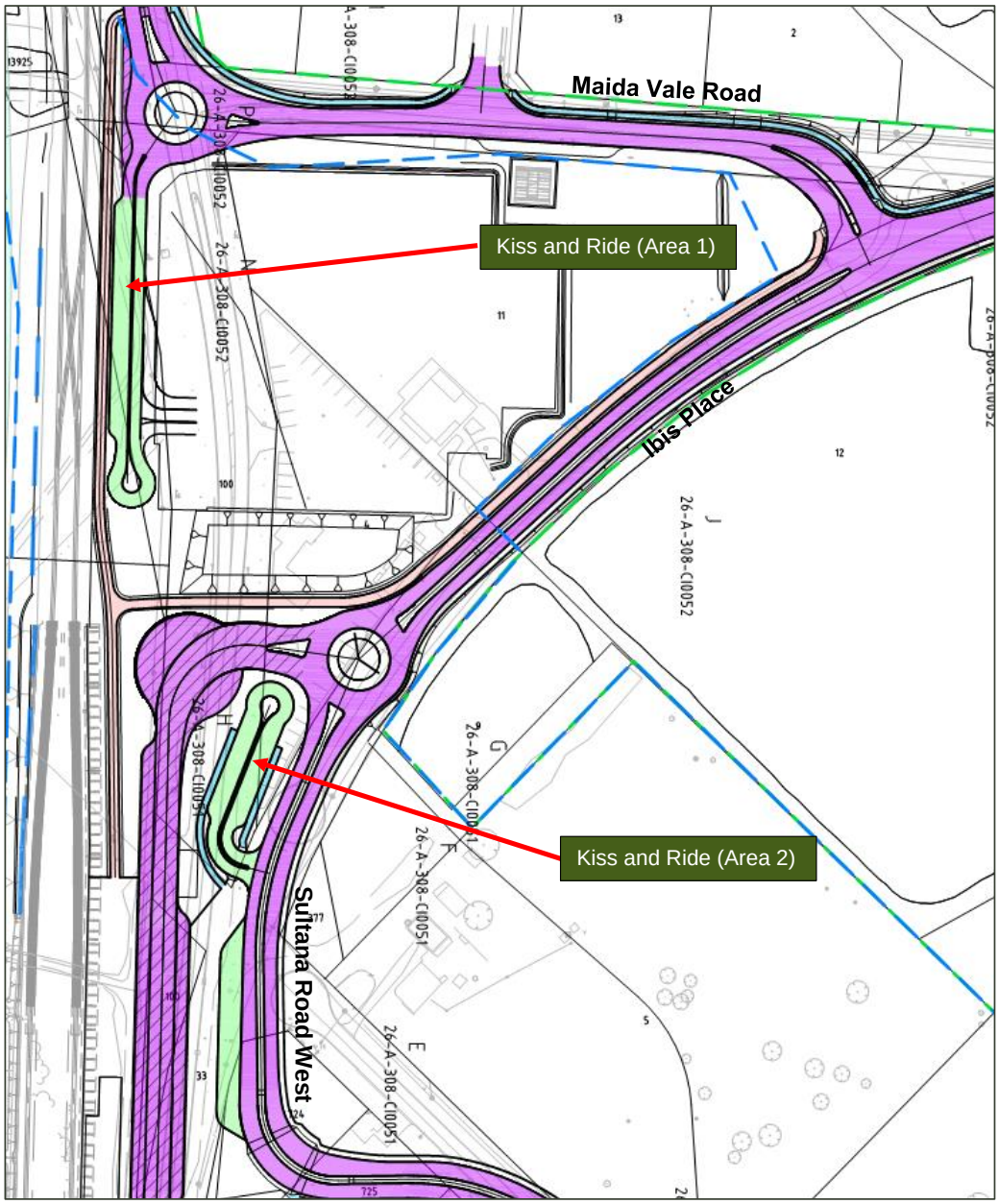


Figure 4-4: Kiss and ride facilities (sourced: PTA)

4.2 Forrestfield Station

Forrestfield Station is one of the key stations for the FAL, with the proposed car park to accommodate the “Park and Ride” demand. The Station has been designed to provide more public transport options for the residents within City of Kalamunda. It is expected the station demand will be largely driven by the residents as the surrounding land uses are generally residential. The industrial land uses in the vicinity are unlikely to generate substantial passenger numbers alighting at the Station. The Station is estimated to be operational prior to 2021, along with the other two stations (Airport Central Station and Redcliffe Station). The Station layout is shown in Figure 4-5.

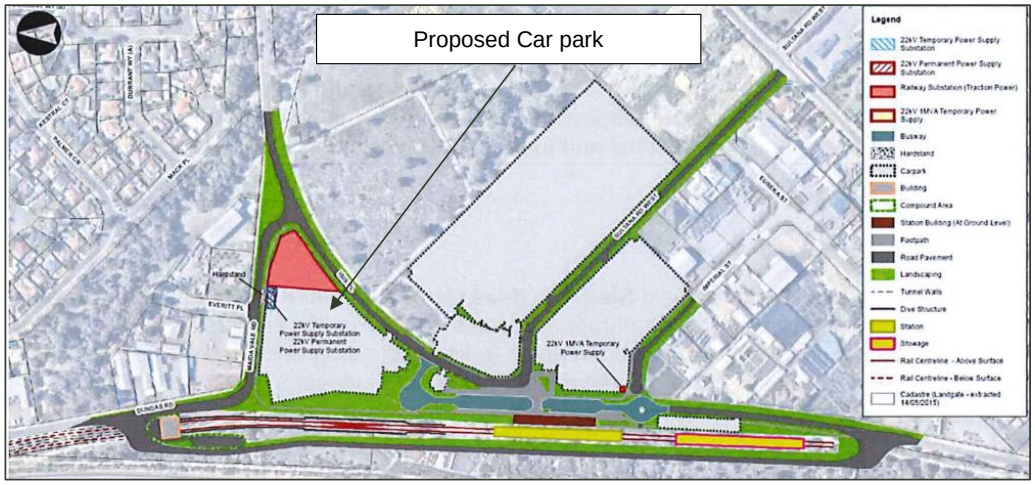


Figure 4-5: Proposed Forrestfield Station layout (source: PTA)

4.2.1 Proposed Land Use

The Forrestfield Station will consist an at-grade rail station, bus station with eight active and four layover bus bays, and bicycle parking spaces.

4.2.2 Additional Potential Parking Facility

As the urban land use within Kalamunda and Mundaring develops and demand for the parking facilities increase, an allowance has been made as part of the Station design for an additional at-grade parking facility to the south of the proposed development site. This additional parking facility is intended to include up to 600 additional parking bays but will only be developed in the long-term if/when the capacity of the parking facility assessed as part of the TIA is exceeded.

4.2.3 Walking and Cycling Access

As shown in Figure 4-6, the pedestrian and cyclist access will be via a network of shared paths that will integrate with the proposed FNDSP.

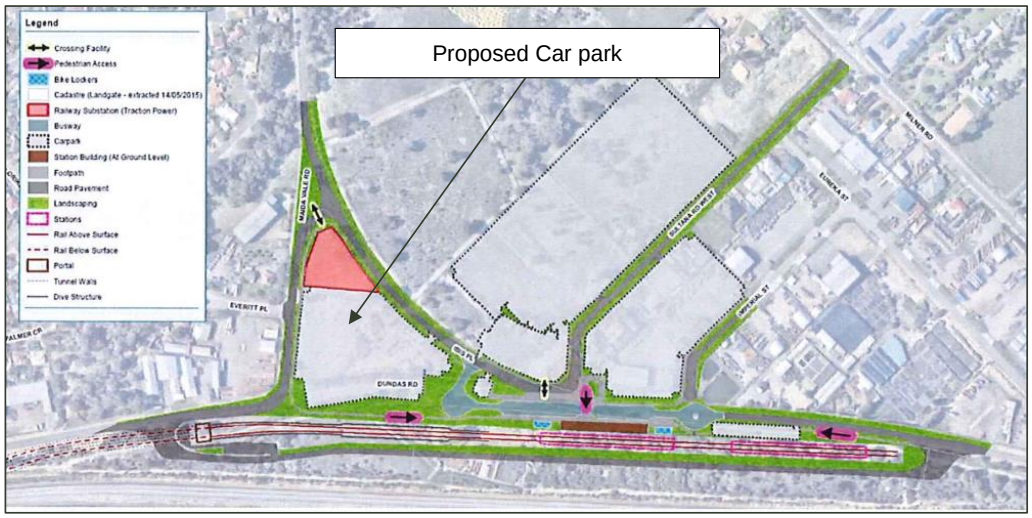


Figure 4-6: Walking and Cycling Access to Forrestfield Station (source: PTA)

4.2.4 Public Transport Access

Bus passengers will arrive at the bus station adjacent to the train station. The location of the active stands are designed to prevent alighting passengers to cross any roads in order to access the rail station. The buses will access the station from Ibis Place as shown in Figure 4-7.

Figure 4-7: Public Transport Access to Forrestfield Station (source: PTA)

5 Integration with Surrounding Area

5.1 Surrounding Major Attractors and Generators

There are currently few major attractors and generators surrounding the area as the freight yards to the west create a barrier to movement in this direction.

5.2 Proposed Changes to Land Uses within 1,200m

There will be major land use changes to the east and south-east of the proposed site. The areas covered by FNDSP are estimated to result in the development yields summarised in Table 5-1.

Table 5-1: Estimated Land Use Changes within 1,200m

Development Type	Total Area (m^2)	No. of Dwellings
Mixed Use	197,000	2,400
Industrial	672,000	-
Residential	534,000	2,800
Retail	107,000	-

5.3 Adequacy of Existing Transport Networks

5.3.1 Pedestrian and Cycle Network

The existing pedestrian and cycle network is considered sufficient considering the existing population and employment densities within the area.

5.3.2 Public Transport

The existing public transport network of bus services is not considered adequate for the area as most of the area is currently not served by any public transport services. This is however will be improved significantly with the future high bus frequency at the Station.

5.3.3 Road Network

The existing road network is considered adequate to accommodate the current traffic demand.

5.4 Deficiency in Existing Transport Networks

5.4.1 Pedestrian and Cycling Network

With the Station anticipated to open prior to 2021, it is expected to attract significant pedestrians and cyclists along Ibis Place, Maida Vale Road, Imperial Street and Sultana Road West. These trips are likely to be generated from the adjacent residential areas in High Wycombe. The existing pedestrian network and cyclist network are considered inadequate for the anticipated pedestrian and cyclist trips.

5.4.2 Road Network

Sultana Road West section to the west of Milner Road is currently not adequate for the expected traffic volume generated for the proposed car park and Station. The road currently has a cul-de-sac and will not provide circulation for traffic within the area.

Ibis Place is also not designed to accommodate the expected future traffic growth and the current cul-de-sac would require removal in order to provide the circulation necessary within the area.

6 Road Safety

The recorded crash data from January 2014 to December 2018, sourced from Main Roads, was analysed to determine any significant trends within the area immediately surrounding the proposed development site. The corridors including:

- Dundas Road (between Sorensen Road and Berkshire Road);
- Maida Vale Road (between Dunas Road and Milner Road);
- Milner Road;
- Sultana Road West;
- Raven Street; and
- Ibis Place.

A summary of the crash data is presented in Table 6-1.

Table 6-1: Summary of Crash Statistics for Adjacent Roads

Crash Nature	Severity				Total
	PDO Minor	PDO Major	Medical	Hospital	
Hit Object	2	2			**4**
Non-Collison	1				**1**
Rear End	4	14			**18**
Right Angle		12	2	4	**18**
Sideswipe Same Direction		2			**2**
Total	**7**	**30**	**2**	**4**	**43**

** Property Damage Only (PDO)*

As shown in Table 6-1, more than 80% of the crashes have resulted in Property Damage Only (PDO), and the majority of crashes are classified as rear-end and right-angle crashes. It is noted that there were two crashes that required medical attention and four crashes that resulted in hospitalisation, with all of these crashes occurring at the Dundas Road/ Berkshire Road intersection and midblock of Milner Road (north of Berkshire Road). These crashes are likely due to the relatively short distance between Dundas Road/ Berkshire Road and Berkshire Road/ Milner Road intersections that are currently priority-controlled. As the intersections are proposed to be signalised in the future (refer to Figure 4-3), this is anticipated to improve the driver awareness and reduce the crash rates.

7 Traffic Analysis

7.1 Forrestfield- Airport Link Transport Modelling

PTA had previously commissioned Aurecon to undertake a transport modelling study for the Forrestfield-Airport Link. The model was developed in an Aimsun hybrid model, containing both microscopic and mesoscopic model area as shown in Figure 7-1.

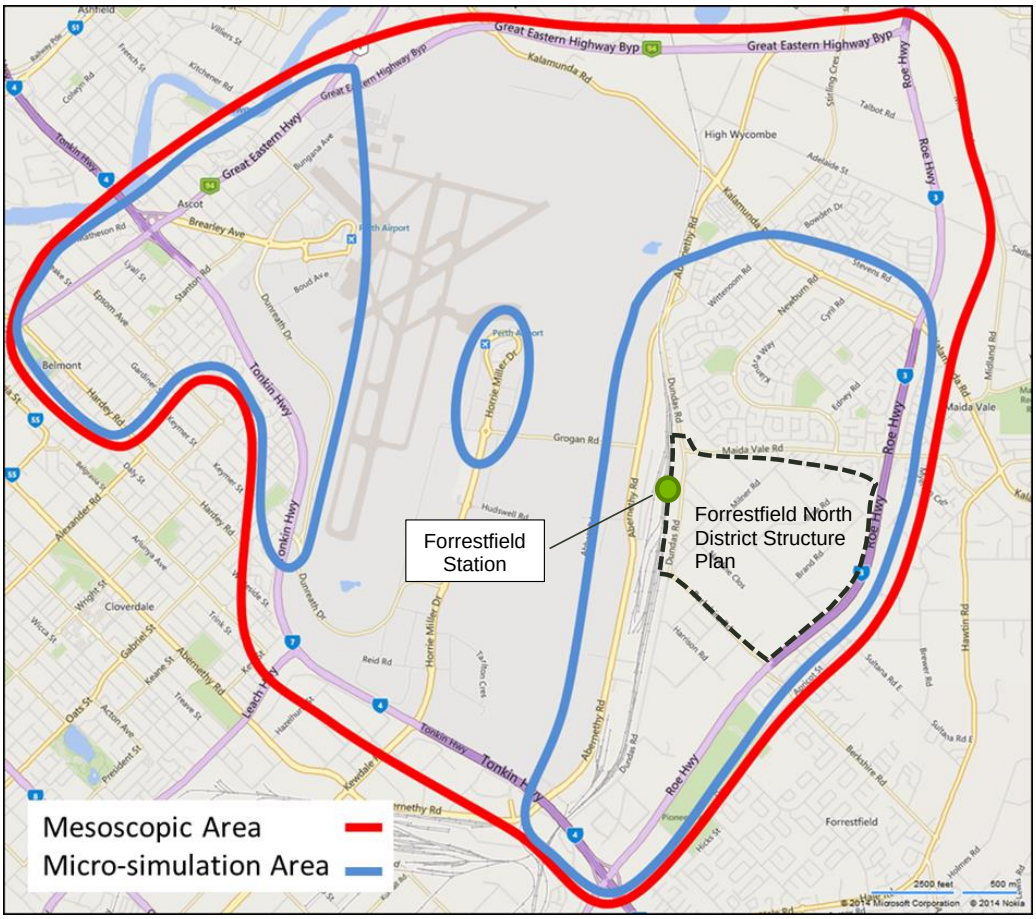


Figure 7-1: Forrestfield-Airport Link Transport Modelling study area

The model consists of two peak periods; AM Peak (07:30am-08:30am) and PM Peak (16:30-17:30pm). It was calibrated to the 2014 observed traffic behaviour and forecast models developed for the following future scenarios with associated infrastructure changes.

- 2017 Forrestfield-Airport Link Construction Year
  - Gateway WA grade separations
  - Closure of Dundas Road, and replace with Dundas Road Link to the west
- 2021 Forrestfield-Airport Station Opening Year
  - Completion of FAL;
  - Completion of Forrestfield Station and proposed car park (previously assumed to include 2,500 parking bays)
  - Diversion of Maida Vale Road towards the Station
  - Road network changes in the FNDSP
- 2031 MRWA Future Year
  - Road network modifications for FNDSP
  - North facing ramps at Roe Highway/ Maida Vale Road
  - Grade separation of Roe Highway/ Kalamunda Road Interchange
  - Minor layout changes at Dundas Road/ Daddow Road intersection

The future year models incorporated the FNDSP proposed developments and, while the MRWA strategic model (ROM24) was used to capture the traffic associated with developments in the wider area, such as the DA6 plans for Redcliffe and Perth Airport Master Plan as indicated in Table 7-1 and Table 7-2 (including FNDSP).

Table 7-1: 2021 Land Use in Addition to 2021 ROM24 for FAL

Area	ROM Zone	Population in Private Dwellings	Total Private Dwellings	m^2		
				Manufacturing	Retail	Commercial
Kalamunda	585	As is	As is	As is	As is	As is
Airport N	597	As is	As is	As is	As is	1,050,000
Airport W	598	As is	As is	As is	As is	As is
Airport S	600	As is	As is	As is	As is	1,150,000
CoB	603	As is	As is	As is	As is	As is

Table 7-2: 2031 Land Use in Addition to 2021 ROM24 for FAL

Area	ROM Zone	Population in Private Dwellings	Total Private Dwellings	m²		
				Manufacturing	Retail	Commercial
Kalamunda*	585	10,388	5,743	134,416	As is	413,117
Airport N	597	As is	As is	120,000	As is	1,290,000
Airport W	598	180	100	50,000	As is	169,000
Airport S	600	720	400	100,000	As is	1,150,000
CoB**	603	1,561	867	As is	3,000	4,000

** Included PTA long-term 600 parking bays; ** City of Belmont; *** Included FNDSP*

The model has captured the essential future developments and road infrastructure within the vicinity of proposed site, as well as in the wider network. Therefore, this model has been used as the main reference for this TIA to determine future background traffic to ensure traffic generation from these developments are captured in the intersection analysis.

7.2 Key Intersections

The following seven intersections (see Figure 7-2) within the proximity of the proposed site have been assessed as part of this analysis:

1. Dundas Road north/ Dundas Road Link
2. Dundas Road/ Maida Vale Road
3. Maida Vale Road/ Ibis Place
4. Milner Road/ Sultana Road West
5. Maida Vale Road/ Raven Street
6. Proposed Car park Access 1
7. Proposed Car park Access 2

Figure 7-2: Key Intersections within Study Area

7.3 Assessment Years

The analysis has considered the following assessment years:

- Existing scenario represents the current situation without any development traffic (i.e. current geometry layouts as captured in the FAL model)
- Year of opening 2021, based on the assumption that the car park will be opened at the same time as the Station (prior to 2021).
- The future year 2031, to assess the traffic impact of 10-year forecast horizon after the year of opening.

7.4 Time Periods

To ensure the peak periods for the proposed car park are reasonably representative of a typical park and ride train station, two existing train station car parks demand profiles (Warwick Station and Stirling Station), were sourced.

The car park at the Warwick Station is assumed to operate in a similar manner to the proposed Forrestfield Station car park as it has approximately 1,200 bays and is located at a similar distance away from the Perth CBD, and the time taken to travel between the station and the Perth station is also assumed to be similar. The Stirling Station carpark (also ~1,200 bays) is slightly closer to the city but provides an additional reference.

As both of these car parks are accessed from signalised intersections, SCATS traffic data was sourced from these signalised intersections in order to compare against the existing daily traffic volume on Dundas Road. The analysis undertaken indicated that the peak parking profile coincides with the Dundas Road peak in the morning (7-8AM), while the evening peak (5-6PM) occurs slightly later than the Dundas Road peak (3.30-4.30PM), as shown in Figure 7-3.

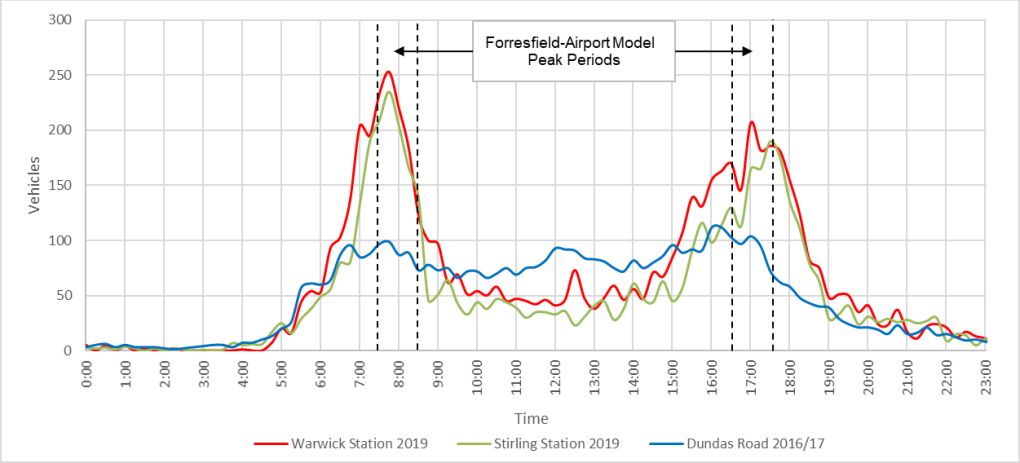


Figure 7-3: Traffic Profiles for Stirling Station and Warwick Station

As previously described, a microsimulation model (Aimsun) was developed as part of the Forrestfield-Airport project. The microsimulation model was developed for two peak periods, AM Peak (7.30-8.30AM) and PM Peak (4.30-5.30PM). While it was observed that the existing car park peak demands occur slightly earlier and later than the model peak periods (by 30mins), it is assumed the two peaks coincide to provide a worst-case demand scenario. While it is noted that the Dundas Road PM peak occurs slightly earlier, this is representative of existing demand, and it is considered likely the future

demand will shift towards wider network peak (4.30-5.30PM) once traffic generation from the proposed car parks and surrounding developments are accounted for.

Therefore, the following peak hours have been assessed as part of this analysis:

- AM Peak: 07:30AM – 08:30am
- PM Peak: 4:30PM – 5:30PM

7.5 Scenarios

As agreed with the City of Kalamunda and PTA, Aurecon has undertaken the analysis for the four scenarios shown in Table 7-3.

Table 7-3: Scenarios for traffic analysis

Scenario	Details and assumptions	Intersections Assessed (refer Figure 7-2)
Scenario 1 – Existing Conditions	▪ Traffic volumes from the FAL model	1, 2, 3 and 4
Scenario 2A – 2021 (Year of Opening) without Raven Street extension	▪ 2021 background (non-development) traffic volumes from the FAL model ▪ Proposed development in place (1,249 parking bays), with Forrestfield Station open ▪ Without Raven Street extension	1, 2, 3, 4, 6 and 7
Scenario 2B – 2021(Year of Opening) with Raven Street extension	▪ 2021 background (non-development) traffic volumes from the FAL model ▪ Proposed development in place (1,249 parking bays), with Forrestfield Station open ▪ With Raven Street extension to Maida Vale Road	1, 2, 3, 4, 5, 6 and 7
Scenario 3 – 2031: 10 years after opening	▪ 2021 background (non-development) traffic volumes from the FAL model ▪ Proposed development in place (1,249 parking bays), with Forrestfield Station open ▪ Additional 600-bay parking facility in place	1, 2, 3, 4, 5, 6 and 7

7.6 Background Traffic

As previously described, the FAL Aimsun model has been used as one of the key sources of data relating to traffic volumes for the purpose of this assessment. This model has been adopted to ensure the that the traffic associated with the future developments within the surrounding areas are accounted for, as well as any wider transport network impacts. It is noted that the traffic associated with the parking facility (previously assumed to include 2,500 parking bays) was removed from the model.

7.6.1 Scenario 1 – Existing Conditions

The FAL Aimsun model was calibrated to 2014 observed traffic volumes and forecasted to year 2017. The 2017 model included the committed changes between 2014 and 2017 as described in Section 7.1. This TIA has used the intersection turn volumes extracted from the model shown in Figure 7-4. Note that only two of the key intersections were accessed in this scenario as the remaining intersections are either cul-de-sac or temporarily closed for public use.

7.6.2 Scenario 2 – 2021: Year of Opening

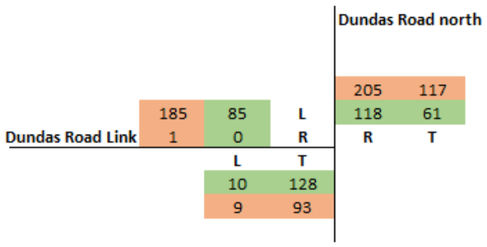
Intersection turn volumes from the 2021 FAL Aimsun model, summarised in Figure 7-5, were used for the background (non-development) traffic assumptions for Scenario 2A (i.e. no Raven Street extension).

A copy of the 2021 FAL Aimsun model was modified to include the Raven Street extension, with the intersection turn volumes extracted from this model used for the background traffic for Scenario 2B. The intersection turn volumes for this scenario are summarised in Figure 7-6.

7.6.3 Scenario 3 – 2031: 10 Years after Opening

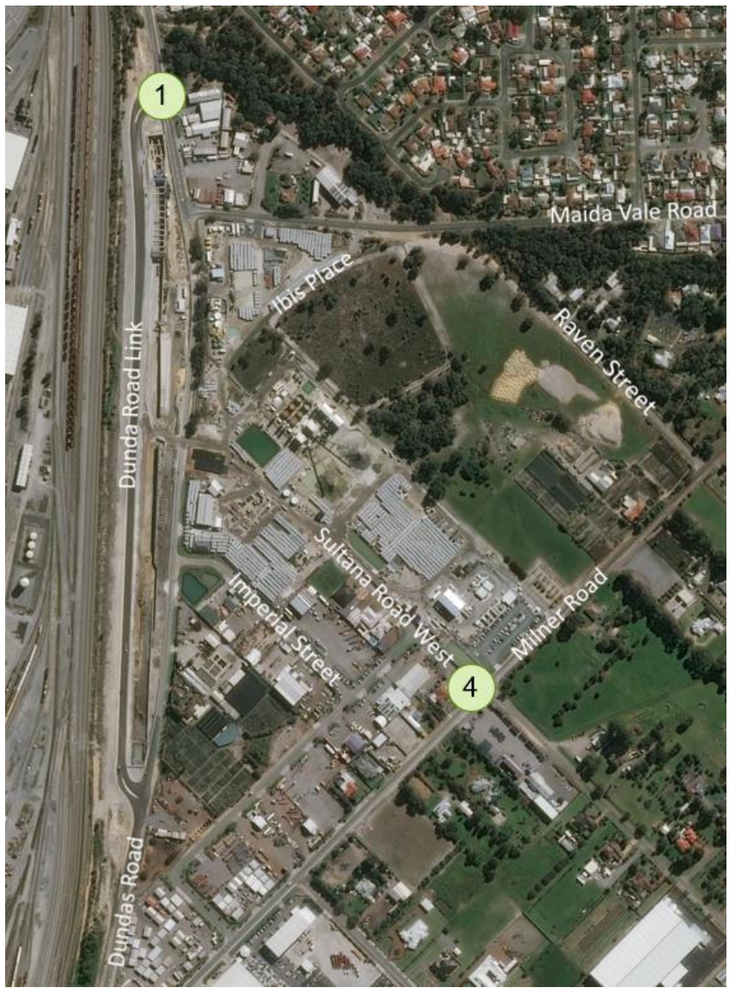
The Scenario 3 background traffic volumes extracted from the 2031 FAL Aimsun Model are summarised in Figure 7-7. It is noted that this model also included the additional 600 parking bays proposed by PTA for the Station located adjacent to Sultana Road West. The trip generation assumed for this additional parking facility is the same as the assumed trip generation for the car park assessed in this TIA.

Intersection 1: Dundas Road North/ Dundas Road Link



Scenario 1 Background

AM Peak (combined LV, HV and Buses)
PM Peak (combined LV, HV and Buses)



Intersection 4: Sultana Road West/ Milner Road

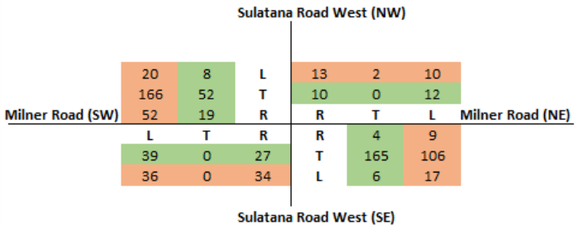
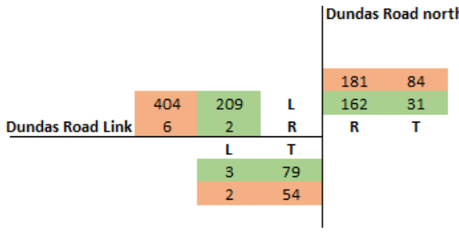
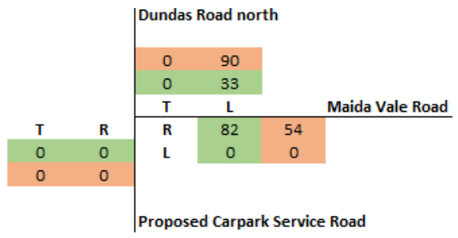


Figure 7-4: Adopted Scenario 1 background turning volume

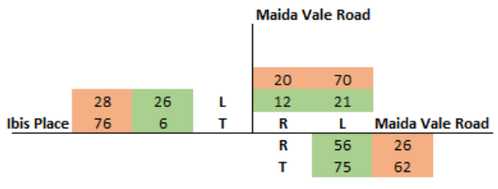
Intersection 1: Dundas Road North/ Dundas Road Link



Intersection 2: Dundas Road North/ Maida Vale Road



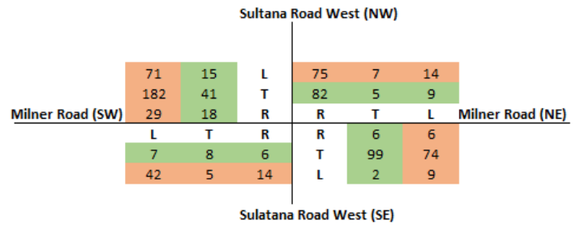
Intersection 3: Maida Vale Road/ Ibis Place



Scenario 2A Background

AM Peak (combined LV, HV and Buses)
PM Peak (combined LV, HV and Buses)

Intersection 4: Sultana Road West/ Milner Road



Intersection 5: Maida Vale Road/ Raven Street

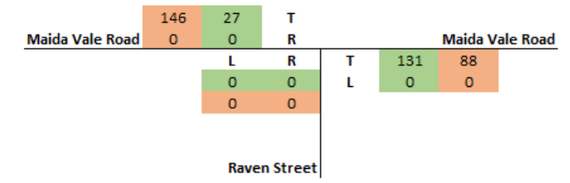
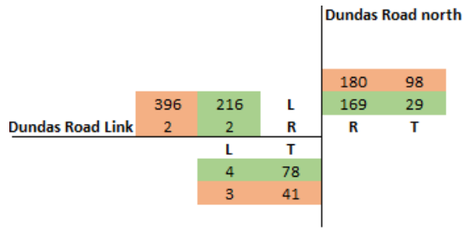
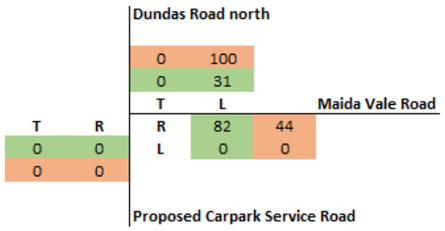


Figure 7-5: Adopted Scenario 2A (2021) background turning volume

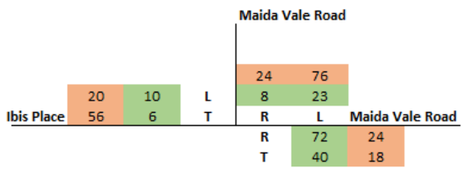
Intersection 1: Dundas Road North/ Dundas Road Link



Intersection 2: Dundas Road North/ Maida Vale Road



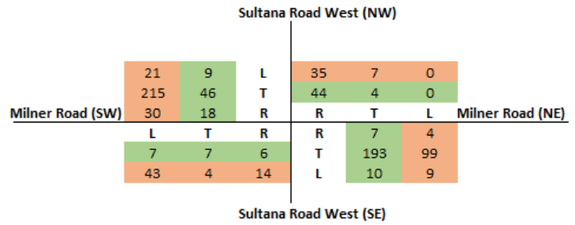
Intersection 3: Maida Vale Road/ Ibis Place



Scenario 2B Background

AM Peak (combined LV, HV and Buses)
PM Peak (combined LV, HV and Buses)

Intersection 4: Sultana Road West/ Milner Road



Intersection 5: Maida Vale Road/ Raven Street

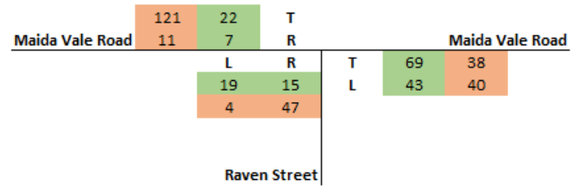
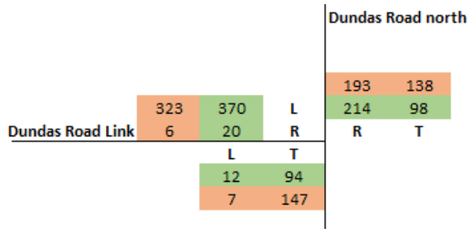
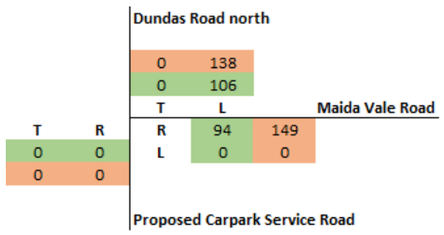


Figure 7-6: Adopted Scenario 2B (2021) background turning volume

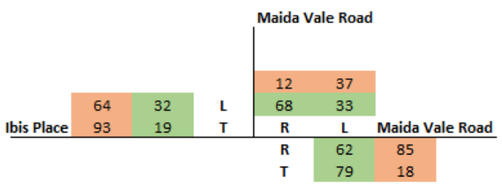
Intersection 1: Dundas Road North/ Dundas Road Link



Intersection 2: Dundas Road North/ Maida Vale Road



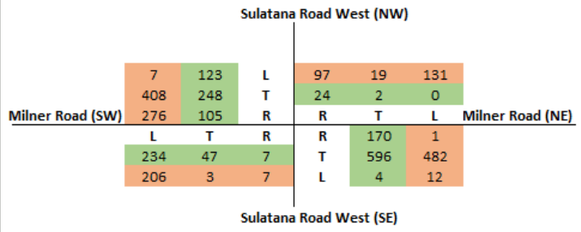
Intersection 3: Maida Vale Road/ Ibis Place



Scenario 3 Background

AM Peak (combined LV, HV and Buses)
PM Peak (combined LV, HV and Buses)

Intersection 4: Sultana Road West/ Milner Road



Intersection 5: Maida Vale Road/ Raven Street

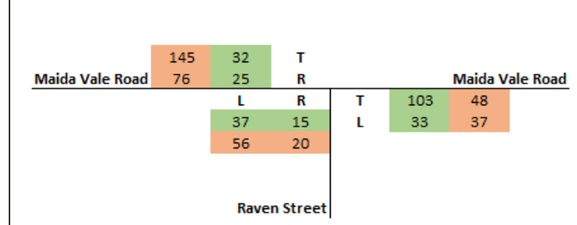


Figure 7-7: Adopted Scenario 3 (2031) background turning volume

7.7 Proposed Development Trip Generation, Distribution and Assignment

7.7.1 Trip Generation

PTA estimated the number of one-way boardings for the Forrestfield Station, with the resulting traffic generation from these trips summarised in Table 7-4. The estimated traffic generation for the parking facility for the peak hours (as a ratio of the number of vehicles going to/from the parking facility compared to the total number of parking bays available) was assumed to be approximately 70%. This is close to the observed ratio from the Warwick Station and Stirling Station, which was found to be approximately 75% and 65% for the AM and PM peak hours respectively.

Table 7-4: Assumed Trip Generation for the Proposed Car Park

Purpose	Estimated One Way Boardings (car trips)	AM Peak		PM Peak	
		Inbound	Outbound	Inbound	Outbound
Park and Ride	1,200	840	-	-	840
Kiss and Ride	750	500	500	500	500
Total	1,950	1,340	500	500	1,340

7.7.2 Proposed Development Traffic Distribution

Park and Ride

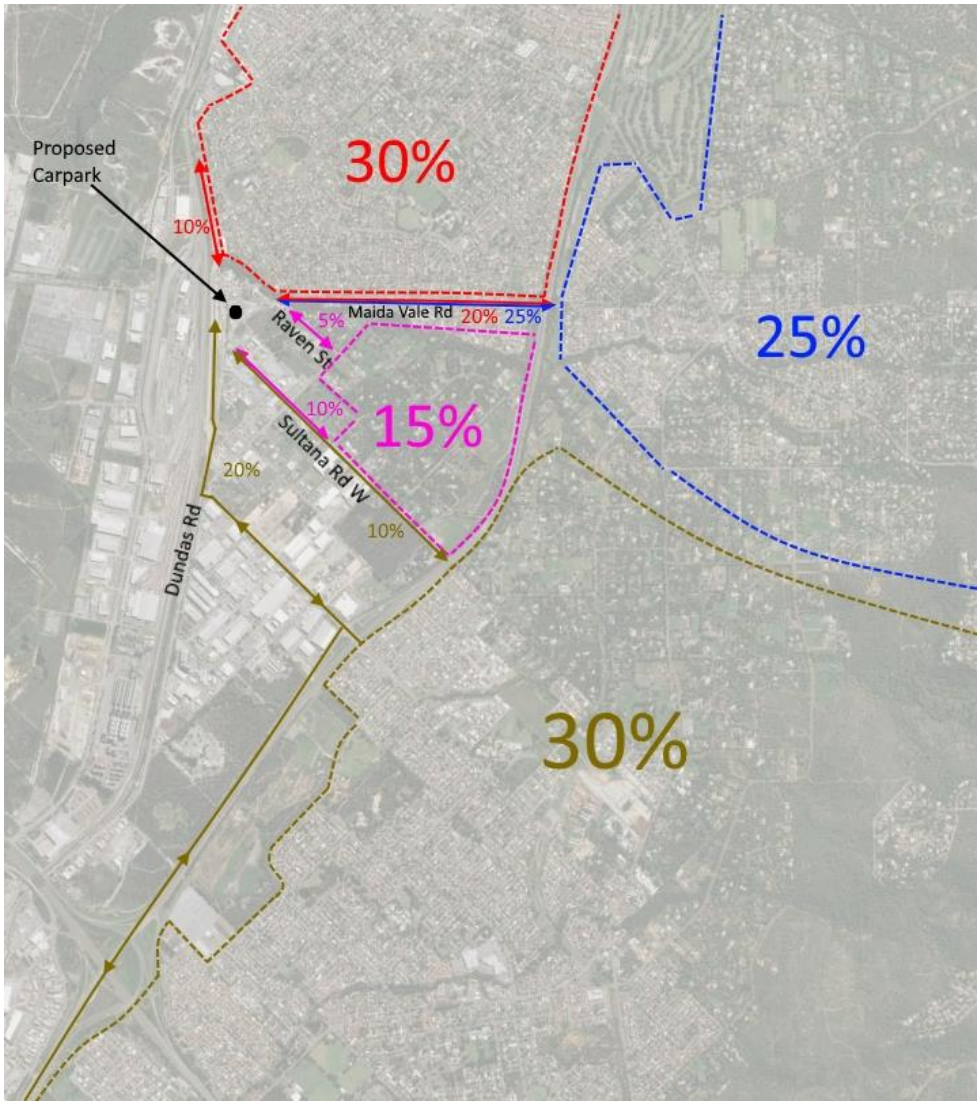
Based on the existing and future developments in the area, the following assumptions were adopted with regards to the traffic distribution for the proposed parking facility:

- Both AM and PM peak periods have similar traffic distribution;
- All trips are assumed to return to their origins/ destinations;
- The proposed car park is expected to attract the majority of the trips from the wider network rather in its vicinity;
- Trips attracted and generated from the north residential areas are assumed to be 30% and likely to reach the site via either Dundas Road (10%) or Maida Vale Road (20%);
- Trips attracted and generated from the residential areas within the FNDSP are assumed to be 15% and assumed to reach the site via either Raven Street (5%) or Sultana Road West (10%);
- Trips attracted and generated from the further east and northeast are assumed to be 25% and assumed to reach the site via Maida Vale Road; and
- Trips attracted and generated from the residential areas to the south and southeast are assumed to be 30% and assumed to reach the site via Dundas Road south (20%) and Sultana Road West (10%).

All trips going to proposed site (Access 1) are assumed use the most direct routes, while 70% of the outbound trips were assumed to exit via Access 1, with the remaining 30% assumed to exit via Access 2.

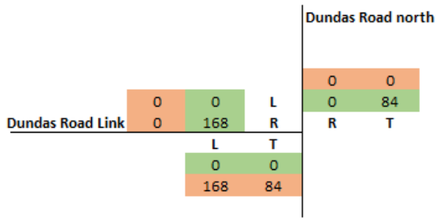
The above traffic distribution assumptions are displayed visually in Table 7-5 while the resulting development traffic volumes at the key intersection summarised in Figure 7-8.

Table 7-5: Adopted overall park and ride inbound/ outbound site traffic distribution

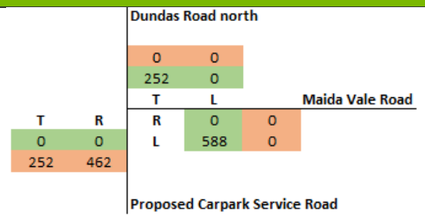


Corridor	Inbound/ Outbound
Dundas Road South	20%
Dundas Road North	10%
Maida Vale Road	45%
Sultana Road West	20%
Raven Street	5%
Total	**100%**

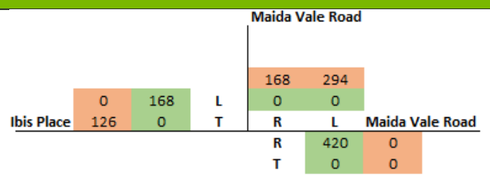
Intersection 1: Dundas Road North/ Dundas Road Link



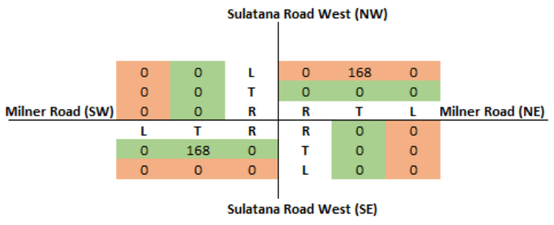
Intersection 2: Dundas Road North/ Maida Vale Road



Intersection 3: Maida Vale Road/ Ibis Place

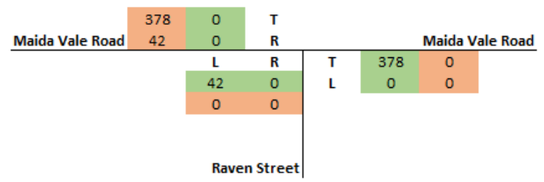


Intersection 4: Sultana Road West/ Milner Road

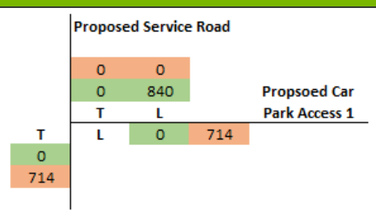


Park and Road

Intersection 5: Maida Vale Road/ Raven Street



Intersection 6: Proposed Service Road/ Proposed Access 1



Intersection 7: Ibis Place/ Proposed Access 2

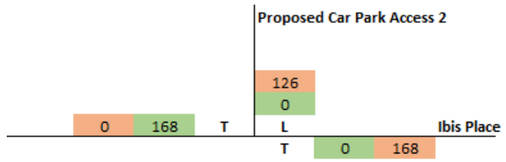


Figure 7-8: Summary of Development Traffic

7.7.3 Kiss and Ride

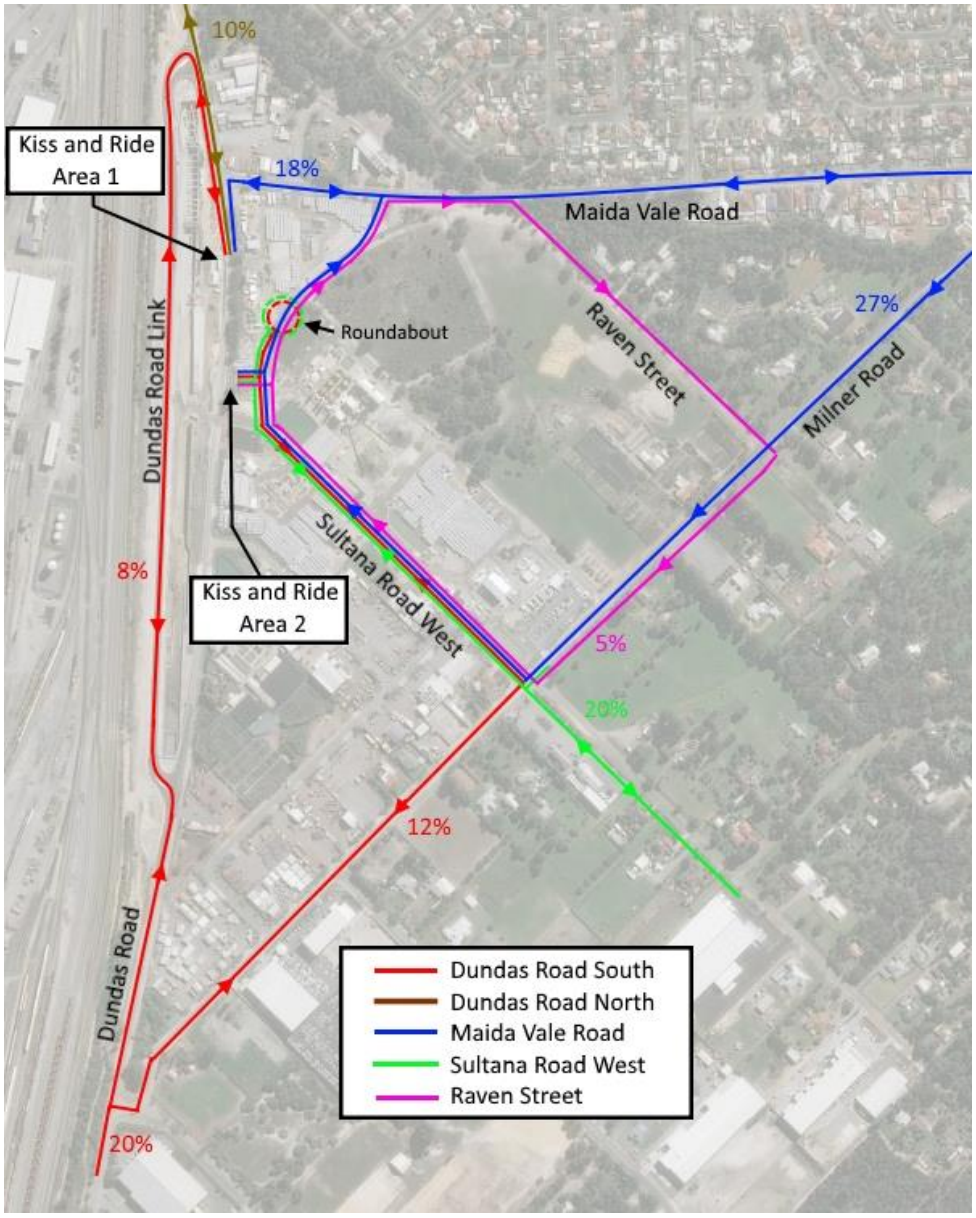
As shown in Figure 4-4, the Station (Area 2) will also include an additional Kiss and Ride facility adjacent to the bus stop area.

It is assumed that the traffic distribution for Kiss and Ride facilities will distribute towards the facilities as shown in Table 7-6, resulting in the intersection turn volumes shown in Table 7-7 and Figure 7-9 respectively. The majority of the Kiss and Ride traffic is expected to utilise the facility adjacent to the station rather the proposed site (Area 1), given Dundas Road/ Maida Vale Road intersection is expected to carry high traffic demand.

Table 7-6: Adopted splits between the facility at proposed site and the Station

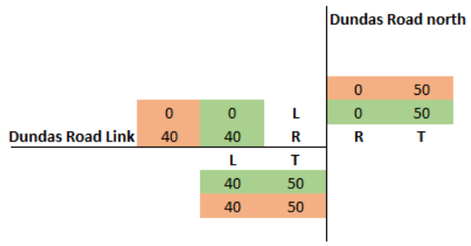
From/To	Proposed Site (Area 1)	Forrestfield Station (Area 2)	Total
Dundas Road South	40%	60%	100%
Dundas Road North	100%	0%	100%
Maida Vale Road	40%	60%	100%
Sultana Road West	0%	100%	100%
Raven Street	0%	100%	100%

Table 7-7: Adopted overall kiss and ride inbound/ outbound site traffic distribution

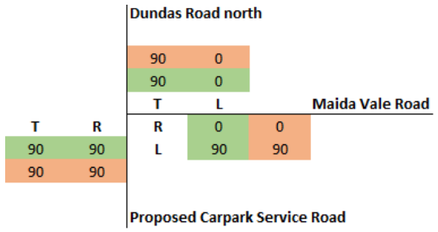


Corridor	Proposed Site	Forrestfield Station
Dundas Road South	8%	12%
Dundas Road North	10%	0%
Maida Vale Road	18%	27%
Sultana Road West	0%	20%
Raven Street	0%	5%
Total	**100%**	

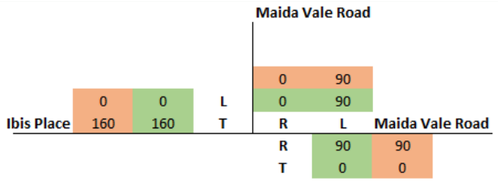
Intersection 1: Dundas Road North/ Dundas Road Link



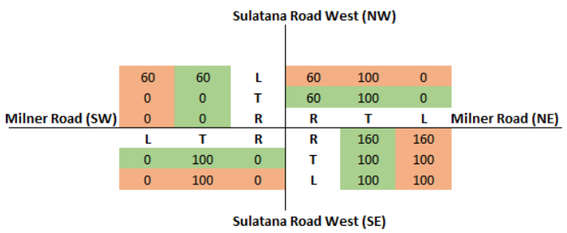
Intersection 2: Dundas Road North/ Maida Vale Road



Intersection 3: Maida Vale Road/ Ibis Place

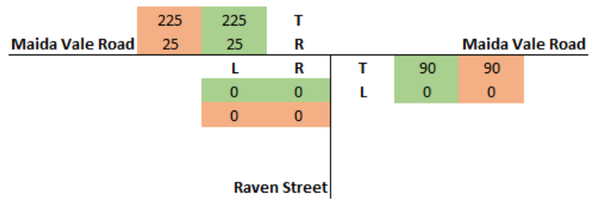


Intersection 4: Sultana Road West/ Milner Road

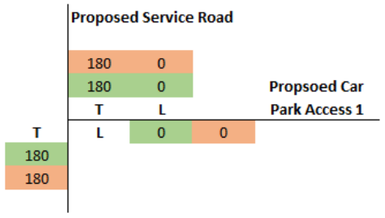


Kiss and Ride

Intersection 5: Maida Vale Road/ Raven Street



Intersection 6: Proposed Service Road/ Proposed Access 1



Intersection 7: Ibis Place/ Proposed Access 2

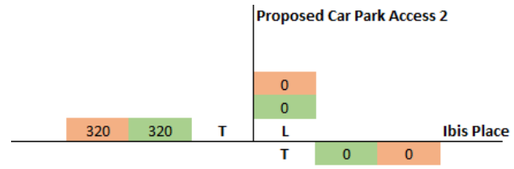
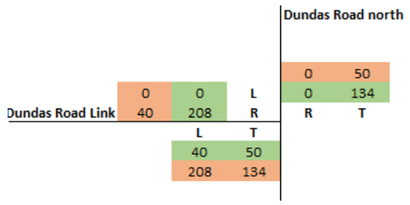


Figure 7-9: Intersection Turn Volumes from Kiss and Ride Facilities

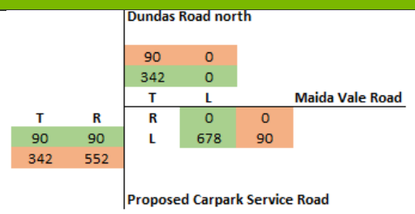
7.7.4 Overall Traffic Demand (with Raven Street Extension)

The overall traffic demand that to/from the proposed car park at the key intersections are summarised in Figure 7-10 for the scenarios that include the Raven Street extension.

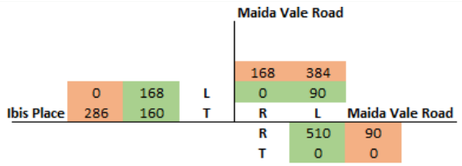
Intersection 1: Dundas Road North/ Dundas Road Link



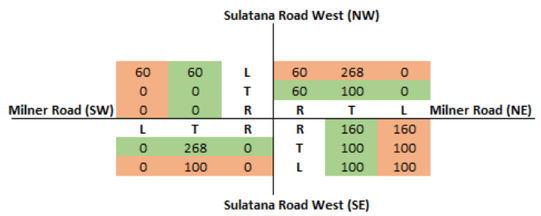
Intersection 2: Dundas Road North/ Maida Vale Road



Intersection 3: Maida Vale Road/ Ibis Place

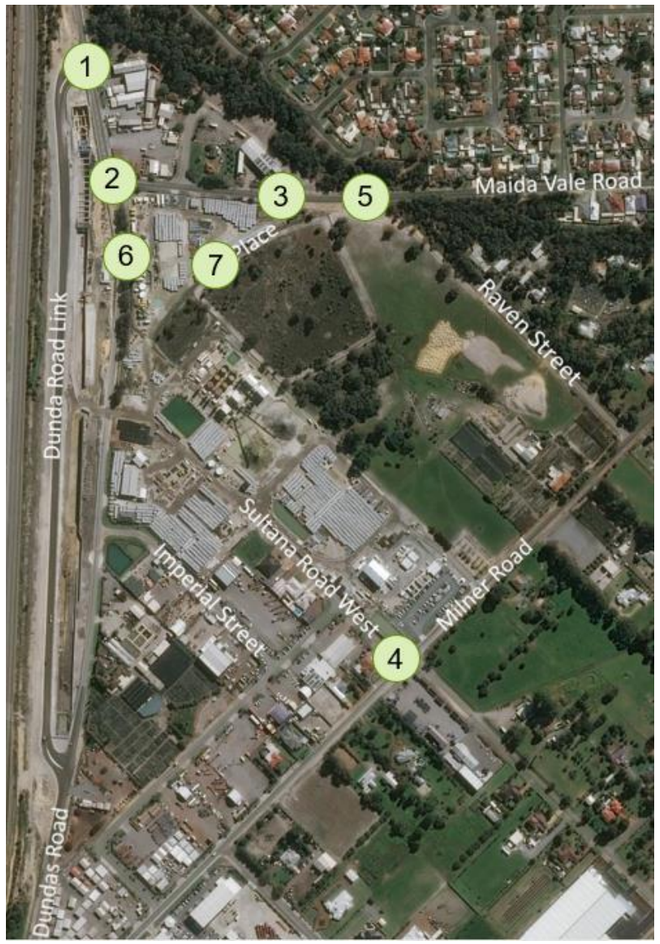


Intersection 4: Sultana Road West/ Milner Road

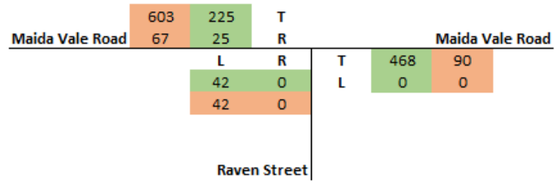


Proposed Overall Turning Volume

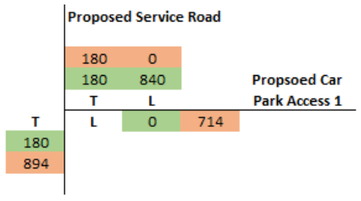
AM Peak
PM Peak



Intersection 5: Maida Vale Road/ Raven Street



Intersection 6: Proposed Service Road/ Proposed Access 1



Intersection 7: Ibis Place/ Proposed Access 2

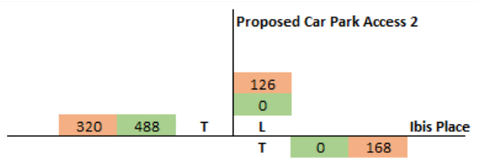
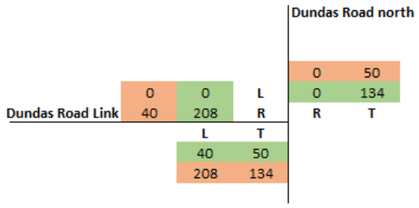


Figure 7-10: Summary of Development Generated Traffic (with Raven Street Extension)

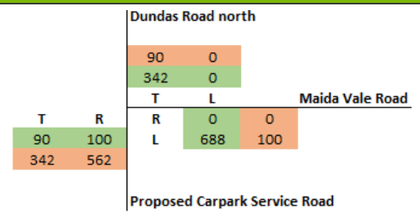
Without Raven Street

The overall traffic demand that to/from the proposed car park at the key intersections are summarised in Figure 7-11 for the scenarios that don't include the Raven Street extension.

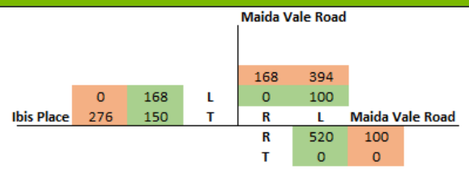
Intersection 1: Dundas Road North/ Dundas Road Link



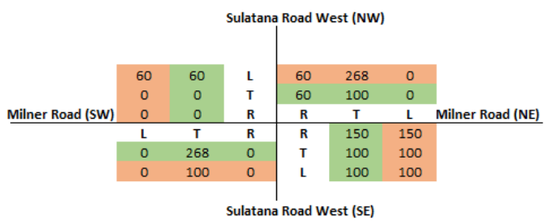
Intersection 2: Dundas Road North/ Maida Vale Road



Intersection 3: Maida Vale Road/ Ibis Place

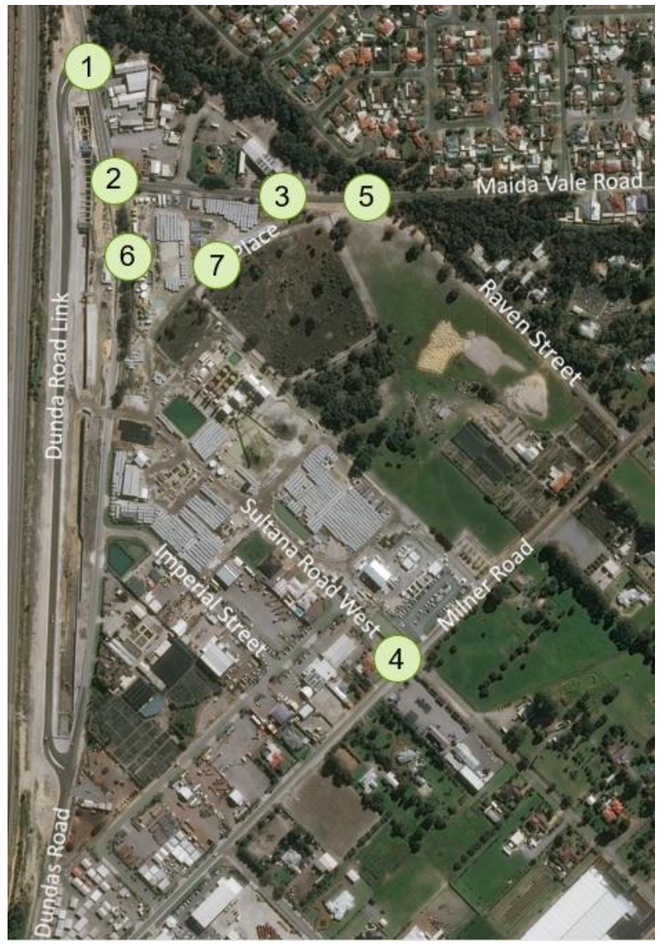


Intersection 4: Sultana Road West/ Milner Road

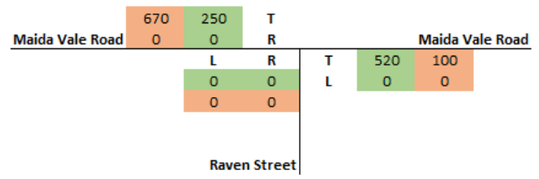


Proposed Overall Turning Volume
- without Raven Street Extension

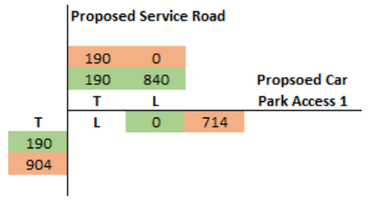
AM Peak
PM Peak



Intersection 5: Maida Vale Road/ Raven Street



Intersection 6: Proposed Service Road/ Proposed Access 1



Intersection 7: Ibis Place/ Proposed Access 2

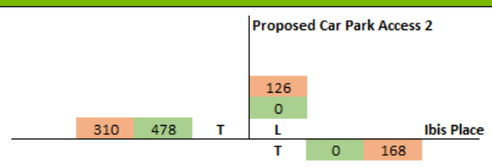


Figure 7-11: Summary of Development Generated Traffic (without Raven Street Extension)

7.8 Total Intersection Turn Volumes

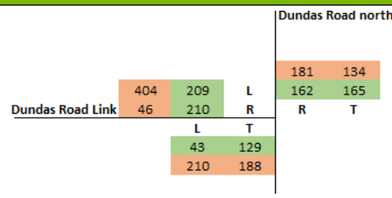
7.8.1 Scenario 1 – Existing Condition

As described in Section 7.6.1, the intersection turn volume for Scenario 1 are summarised in Figure 7-4.

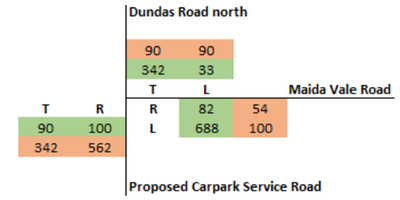
7.8.2 Scenario 2A – Year of Opening 2021 without Raven Street Extension

For Scenario 2A, it is assumed that the proposed multi-storey car park will have been completed, along with the completion of Forrestfield Station. In this scenario, the Raven Street extension is assumed not to have completed. The combined intersection turn volumes for this scenario are summarised in Figure 7-12.

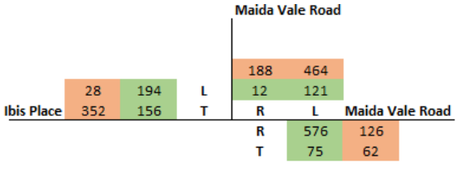
Intersection 1: Dundas Road North/ Dundas Road Link



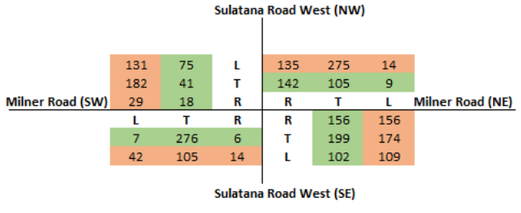
Intersection 2: Dundas Road North/ Maida Vale Road



Intersection 3: Maida Vale Road/ Ibis Place



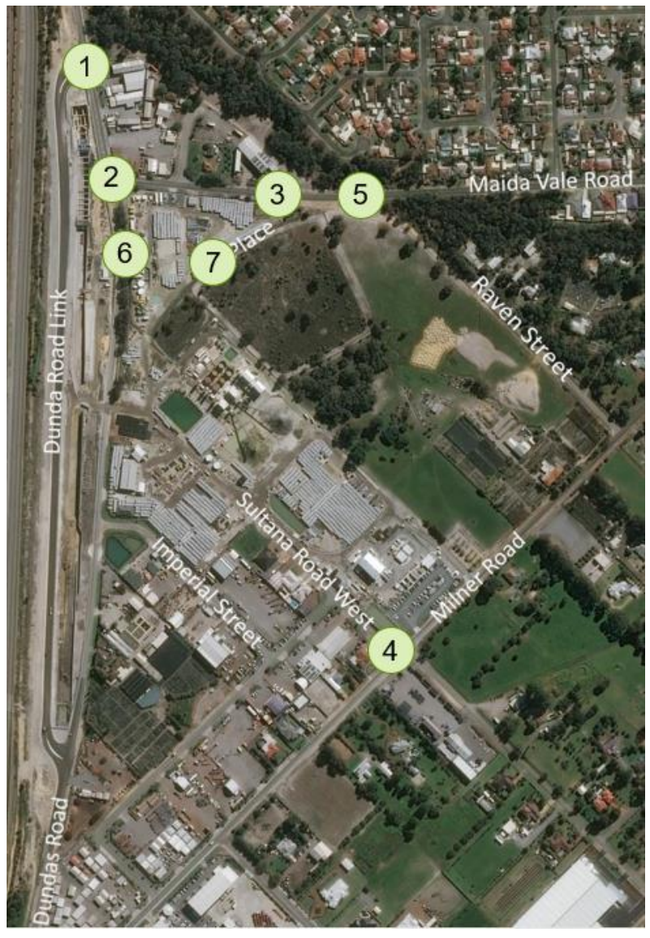
Intersection 4: Sultana Road West/ Milner Road



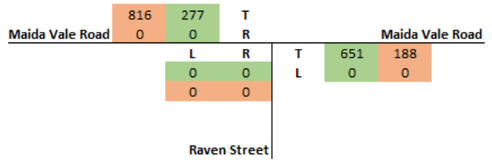
Scenario 2A Turning Volume

AM Peak (combined LV, HV and Buses)

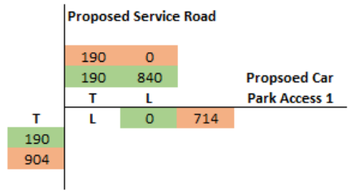
PM Peak (combined LV, HV and Buses)



Intersection 5: Maida Vale Road/ Raven Street



Intersection 6: Proposed Service Road/ Proposed Access 1



Intersection 7: Ibis Place/ Proposed Access 2

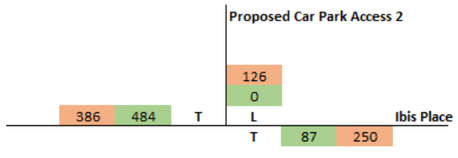
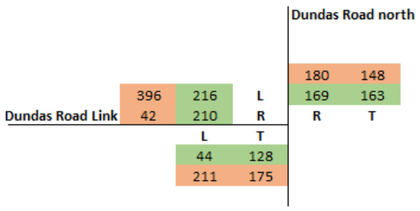


Figure 7-12: Summary of Intersection Turn Volumes for Scenario 2A

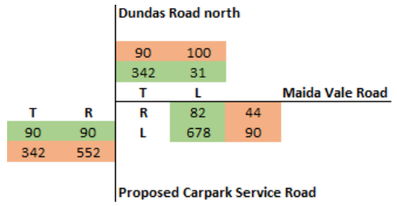
7.8.3 Scenario 2B – Year of Opening 2021 with Raven Street Extension

For Scenario 2B, it is assumed that the proposed multi-storey car park will be completed, along with the completion of Forrestfield Station. In this scenario, the Raven Street extension is assumed to have completed. The combined intersection turn volumes for this scenario are summarised in Figure 7-13.

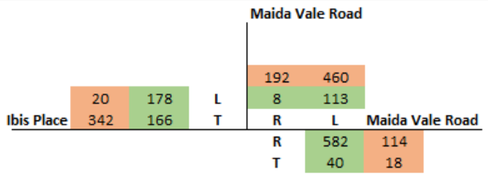
Intersection 1: Dundas Road North/ Dundas Road Link



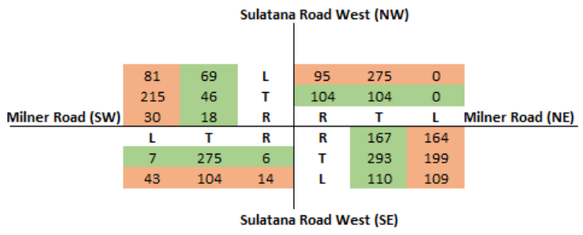
Intersection 2: Dundas Road North/ Maida Vale Road



Intersection 3: Maida Vale Road/ Ibis Place

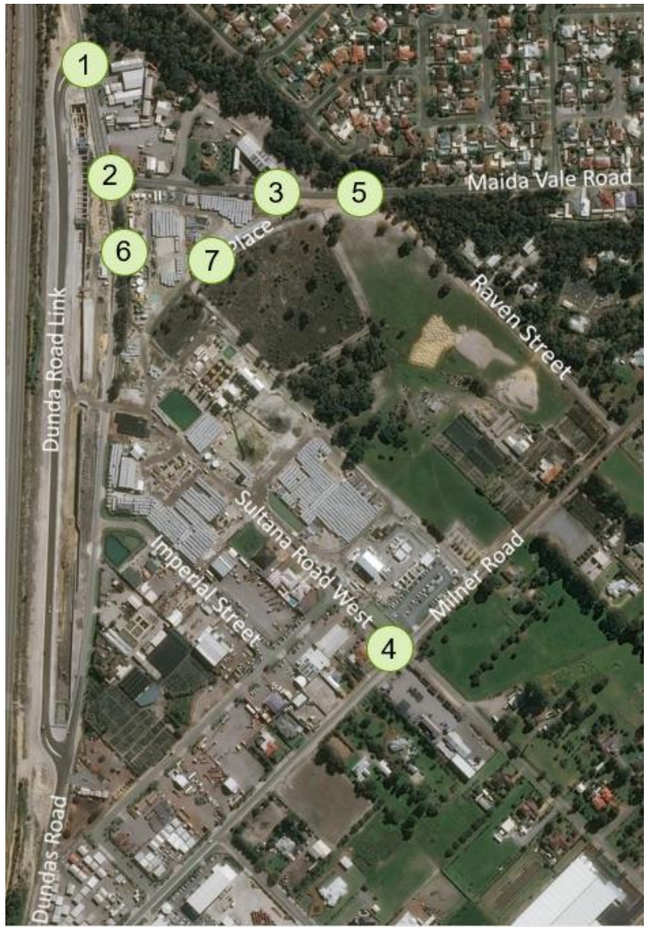


Intersection 4: Sultana Road West/ Milner Road

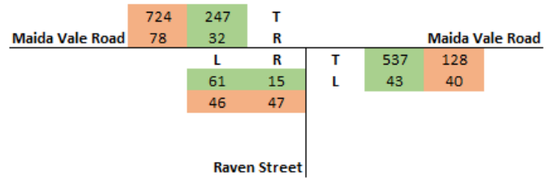


Scenario 2B Turning Volume

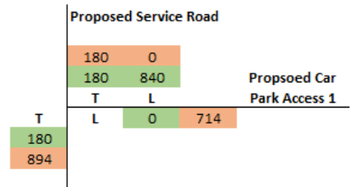
AM Peak (combined LV, HV and Buses)
PM Peak (combined LV, HV and Buses)



Intersection 5: Maida Vale Road/ Raven Street



Intersection 6: Proposed Service Road/ Proposed Access 1



Intersection 7: Ibis Place/ Proposed Access 2

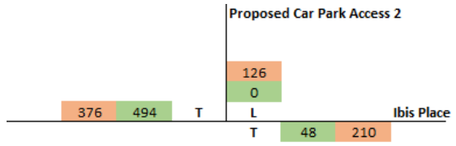
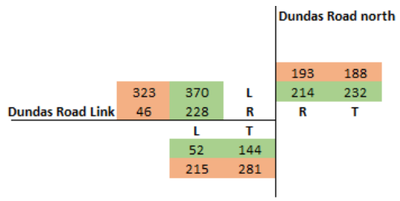


Figure 7-13: Summary of Intersection Turn Volumes for Scenario 2B

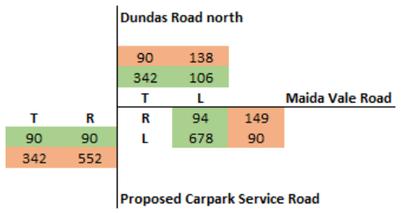
7.8.4 Scenario 3 – 10 Years after Opening (2031)

The combined intersection turn volumes for Scenario 3 are summarised in Figure 7-14.

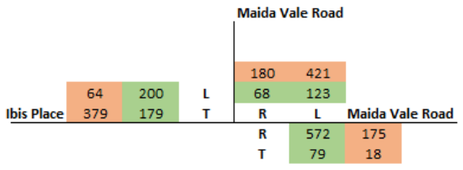
Intersection 1: Dundas Road North/ Dundas Road Link



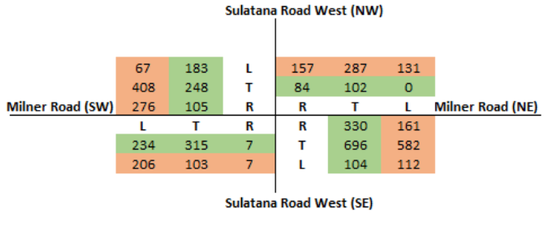
Intersection 2: Dundas Road North/ Maida Vale Road



Intersection 3: Maida Vale Road/ Ibis Place



Intersection 4: Sultana Road West/ Milner Road

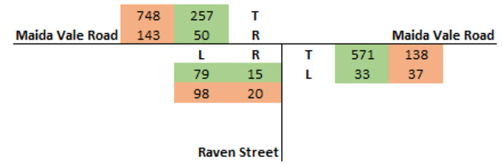


Scenario 3 Turning Volume

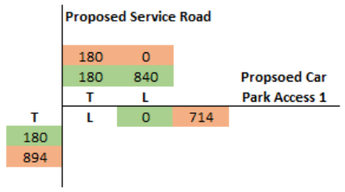
AM Peak (combined LV, HV and Buses)

PM Peak (combined LV, HV and Buses)

Intersection 5: Maida Vale Road/ Raven Street



Intersection 6: Proposed Service Road/ Proposed Access 1



Intersection 7: Ibis Place/ Proposed Access 2

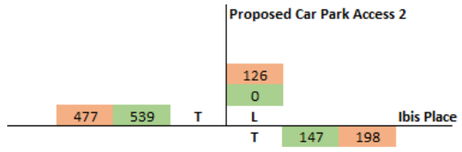


Figure 7-14: Summary of Intersection Turn Volumes for Scenario 3

7.9 SIDRA Assessment

SIDRA analysis has been undertaken for the key intersections near the site, (see Figure 7-2) including:

1. Dundas Road north/ Dundas Road Link
2. Dunas Road/ Maida Vale Road
3. Maida Vale Road/ Ibis Place
4. Milner Road/ Sultana Road West
5. Maida Vale Road/ Raven Street
6. Proposed Car park Access 1
7. Proposed Car park Access 2

Intersection capacity analysis was undertaken in SIDRA (version 8), to evaluate the intersection performance for the various scenarios. The SIDRA vehicle and model parameters were set up in accordance with the suggested parameters in the Main Roads WA Operational Modelling Guidelines for Light and Heavy vehicles, with buses considered as part of the Heavy vehicles.

Based on the data collected at the existing train stations; Warwick Station and Stirling Station, it was found that the Peak Flow Factor (PFF) for the car parks are approximately 89% and 91% (based on 15-minute intervals). This TIA has adopted more conservative approach of adopting the 89% peak flow factor for both the AM and PM peak periods.

The layout configuration for all intersections are shown in Figure 7-15 to Figure 7-21.

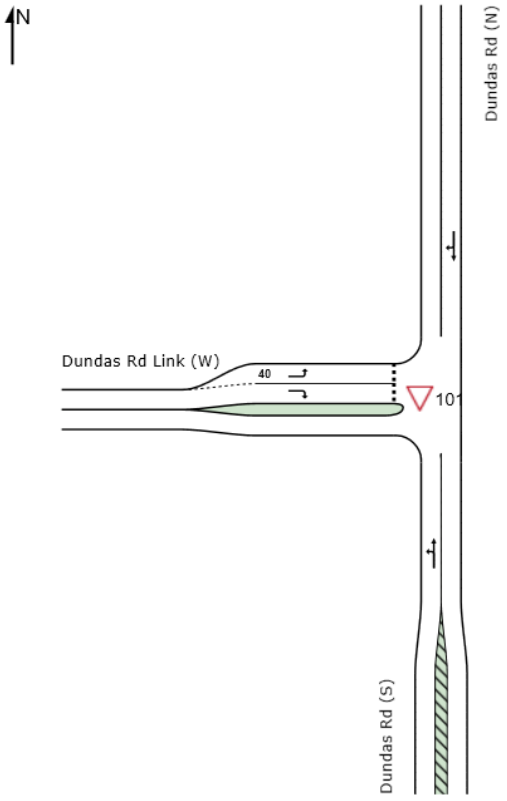


Figure 7-15: Intersection 1 – Dundas Road north/ Dundas Road Link for all Scenarios

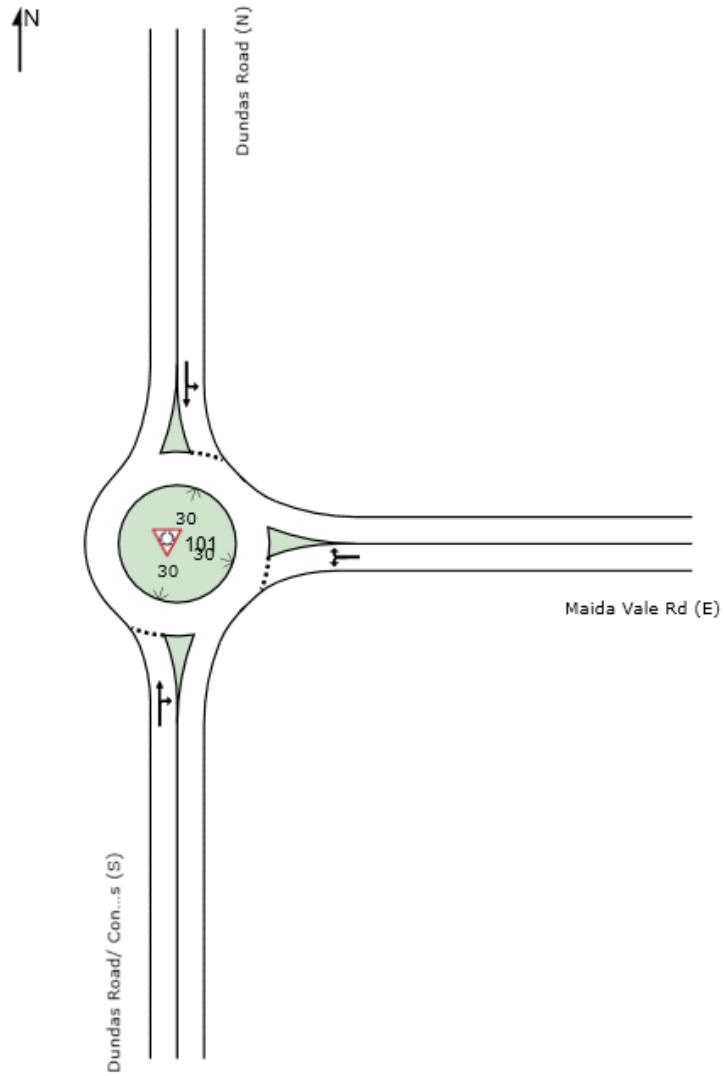


Figure 7-16: Intersection 2 – Dundas Road / Maida Vale Road for Scenario 2A,2B and 3

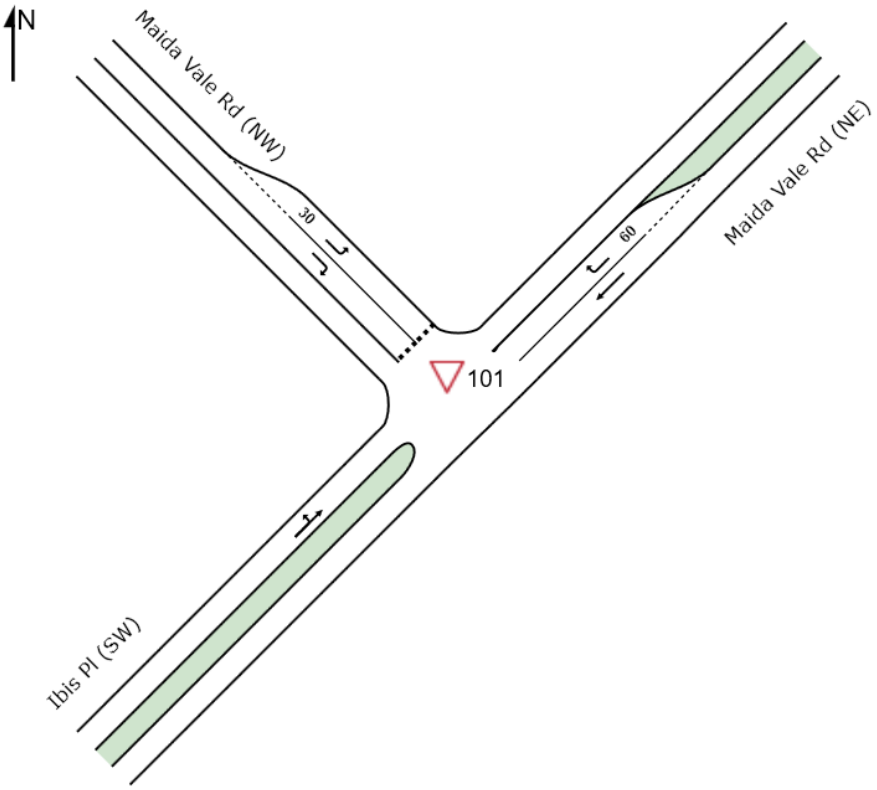


Figure 7-17: Intersection 3 – Maida Vale Road/ Ibis Place for Scenario 2A,2B and 3

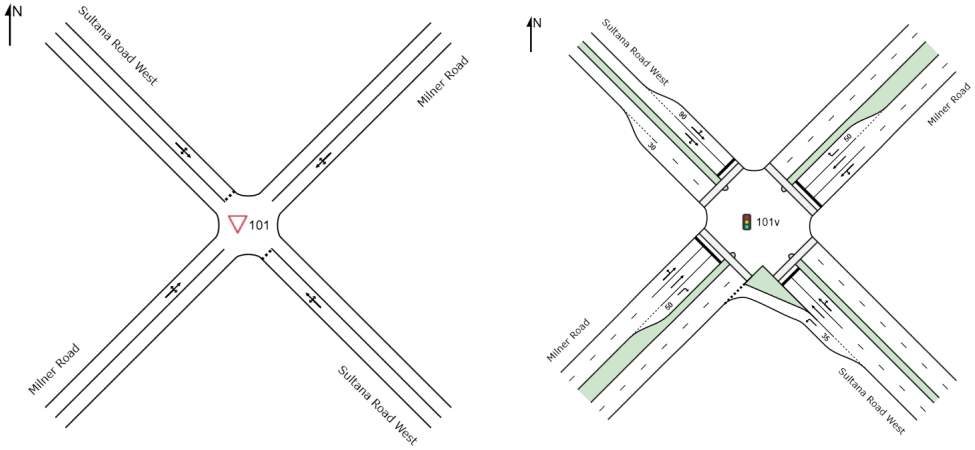


Figure 7-18: Intersection 4 – Milner Road/ Sultana Road West for Scenario 1, 2A, 2B (left) and 3 (right)

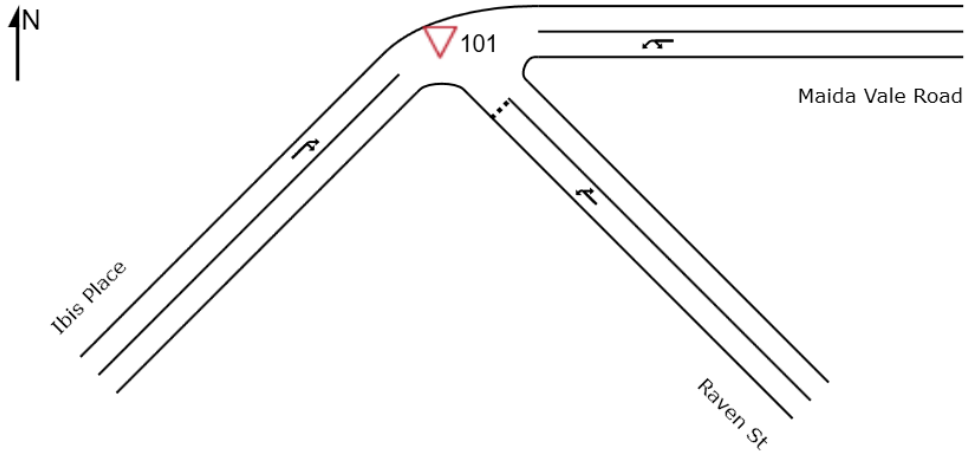


Figure 7-19: Intersection 5 – Maida Vale Road/ Raven Street for Scenario 2B and 3

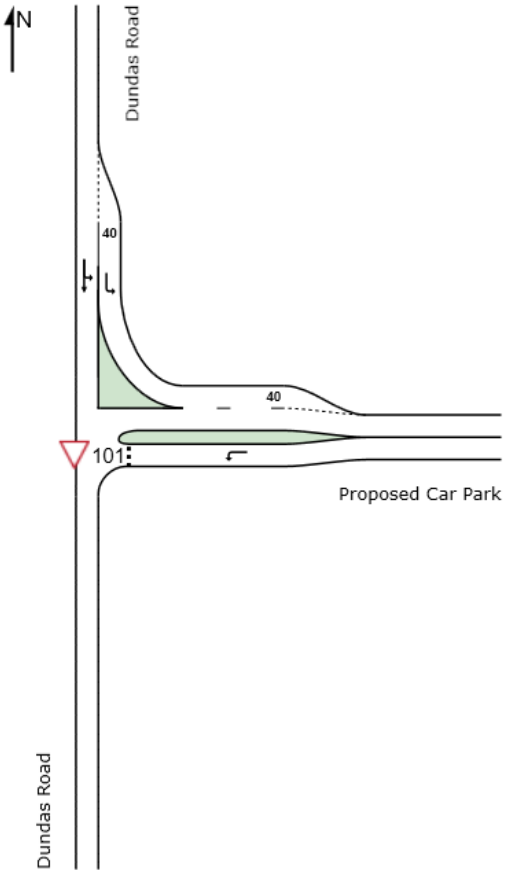


Figure 7-20: Intersection 6 – Proposed Service Road/ Proposed Access 1

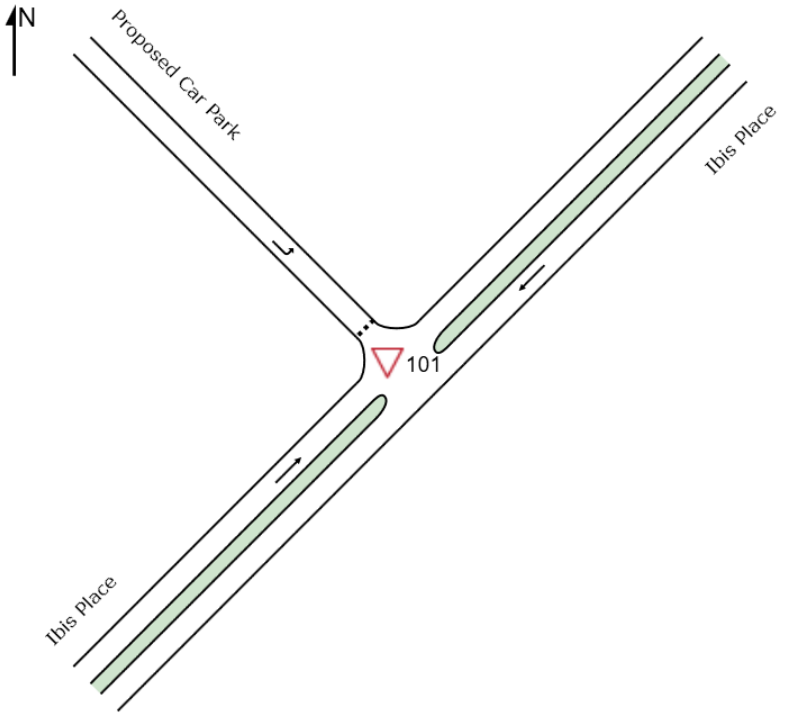


Figure 7-21: Intersection 7 – Ibis Place/ Proposed Access 2

7.9.1 Scenario 1 – Existing Conditions

Summaries of the intersection performances for Scenario 1 are shown in Figure 7-22 and Figure 7-23 for the AM and PM peak hours respectively, and show that the two key existing intersections are currently operating satisfactory with level of service (LOS) A and low degree of saturation (DOS).

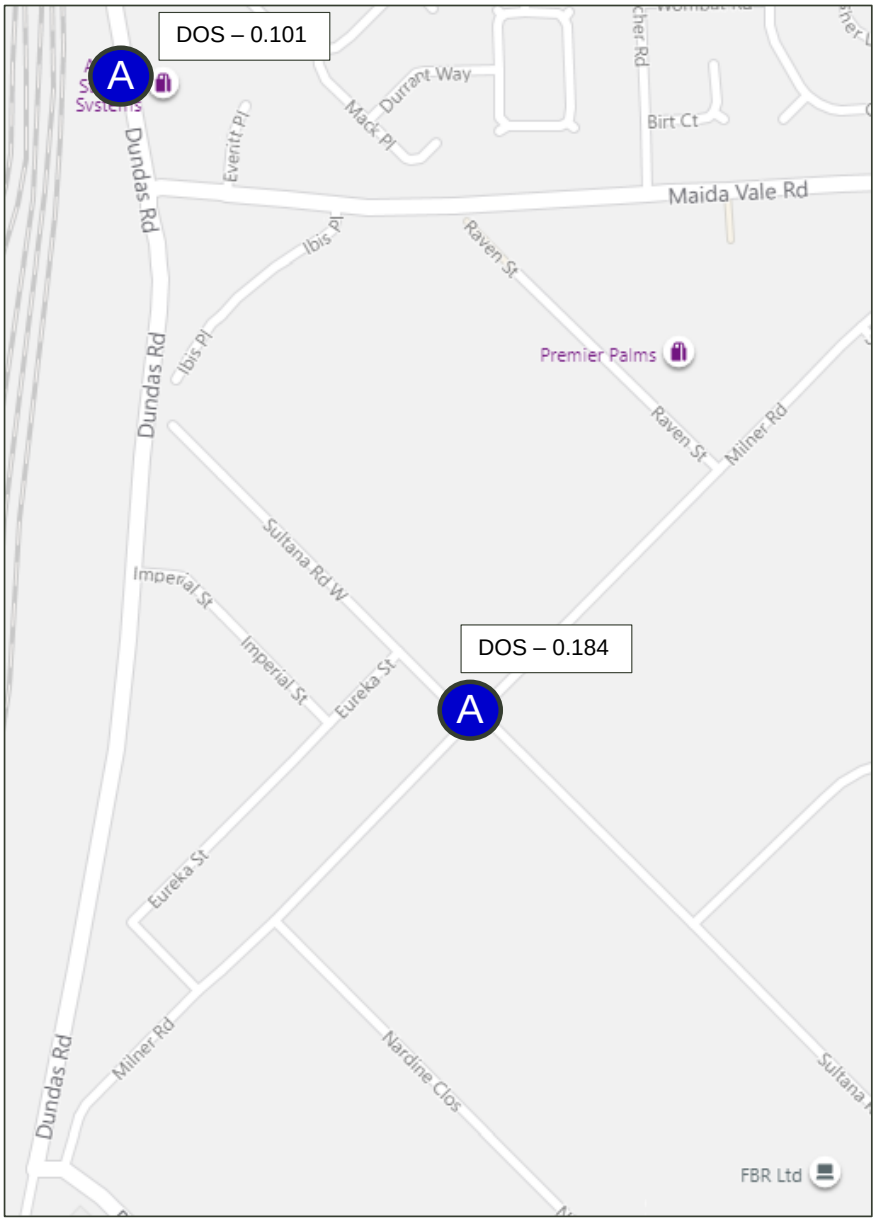


Figure 7-22: Scenario 1 – AM Peak Summary

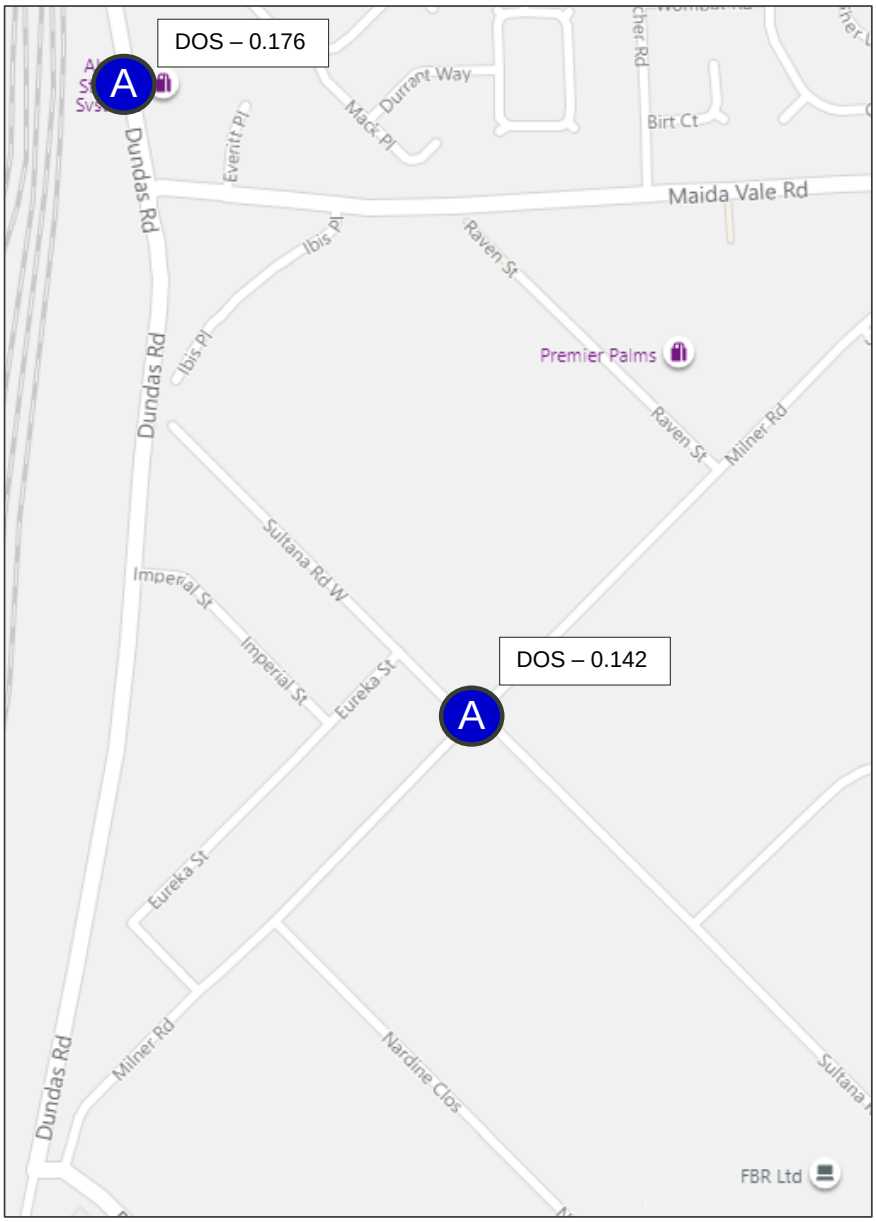


Figure 7-23: Scenario 1 – PM Peak Summary

Detailed SIDRA outputs are included in Appendix B.

7.9.2 Scenario 2A – Year of Opening 2021 without Raven Street Extension

Summaries of the intersection performances for Scenario 2A are shown in Figure 7-24 and Figure 7-25 for the 2021 AM and PM peak hours respectively and indicate that the key intersections will perform satisfactorily with LOS A and low DOS.

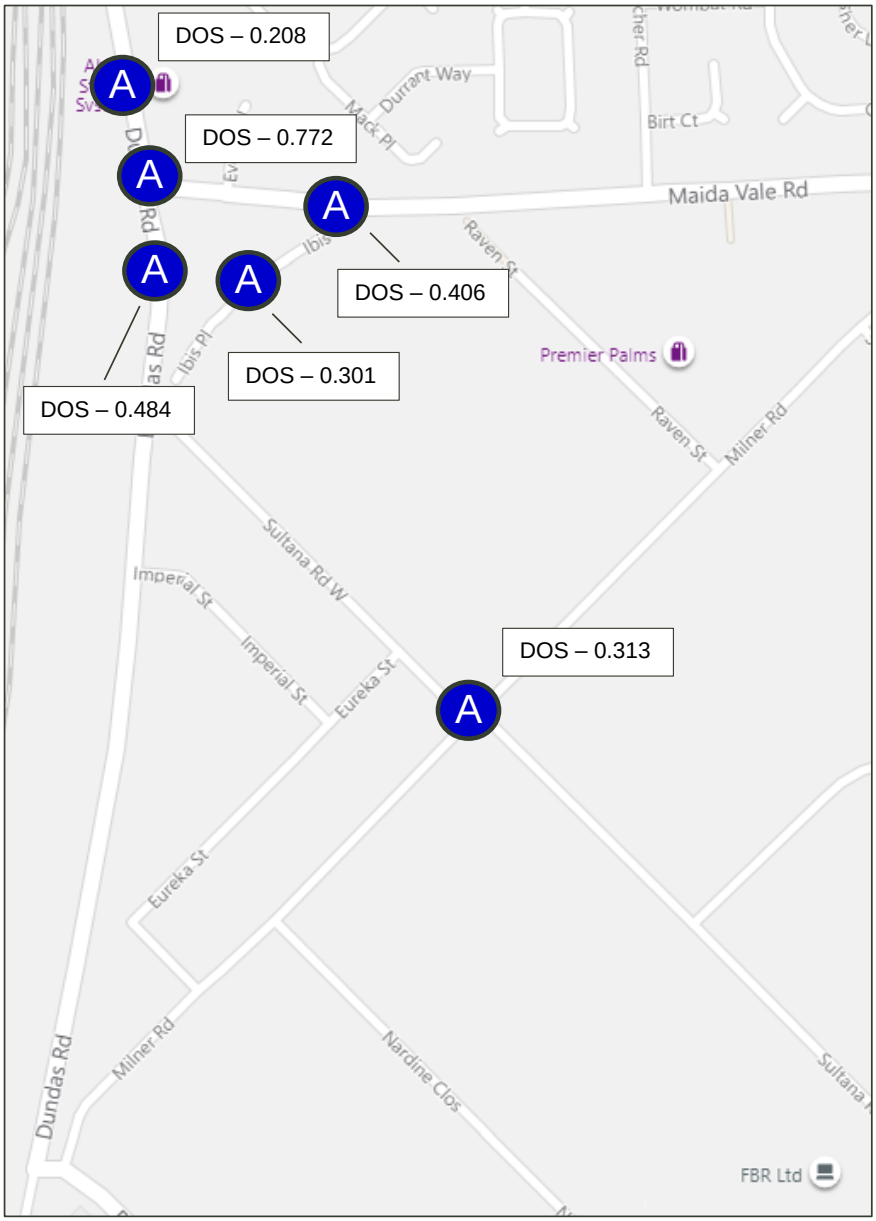


Figure 7-24: Scenario 2A – AM Peak Results Summary

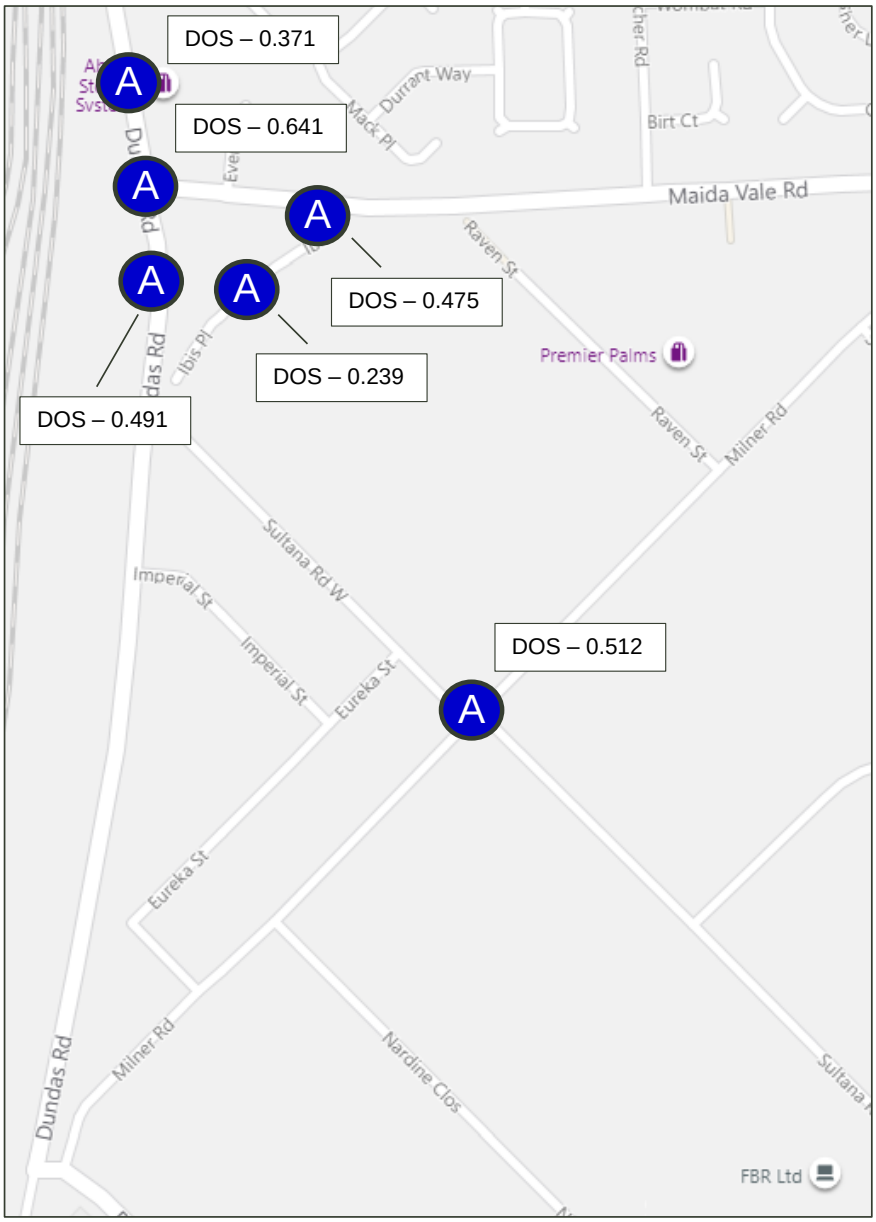


Figure 7-25: Scenario 2A – PM Peak Results Summary

Detailed SIDRA outputs are included in Appendix B.

7.9.3 Scenario 2B – Year of Opening 2021 with Raven Street Extension

Summaries of the intersection performances for Scenario 2B are shown in Figure 7-26 and Figure 7-27 for the 2021 AM and PM peak hours respectively and indicate that the key intersections will perform satisfactorily with LOS A and low DOS. Overall it is considered that there is only minor differences in the intersection performance in Scenarios 2A and 2B.

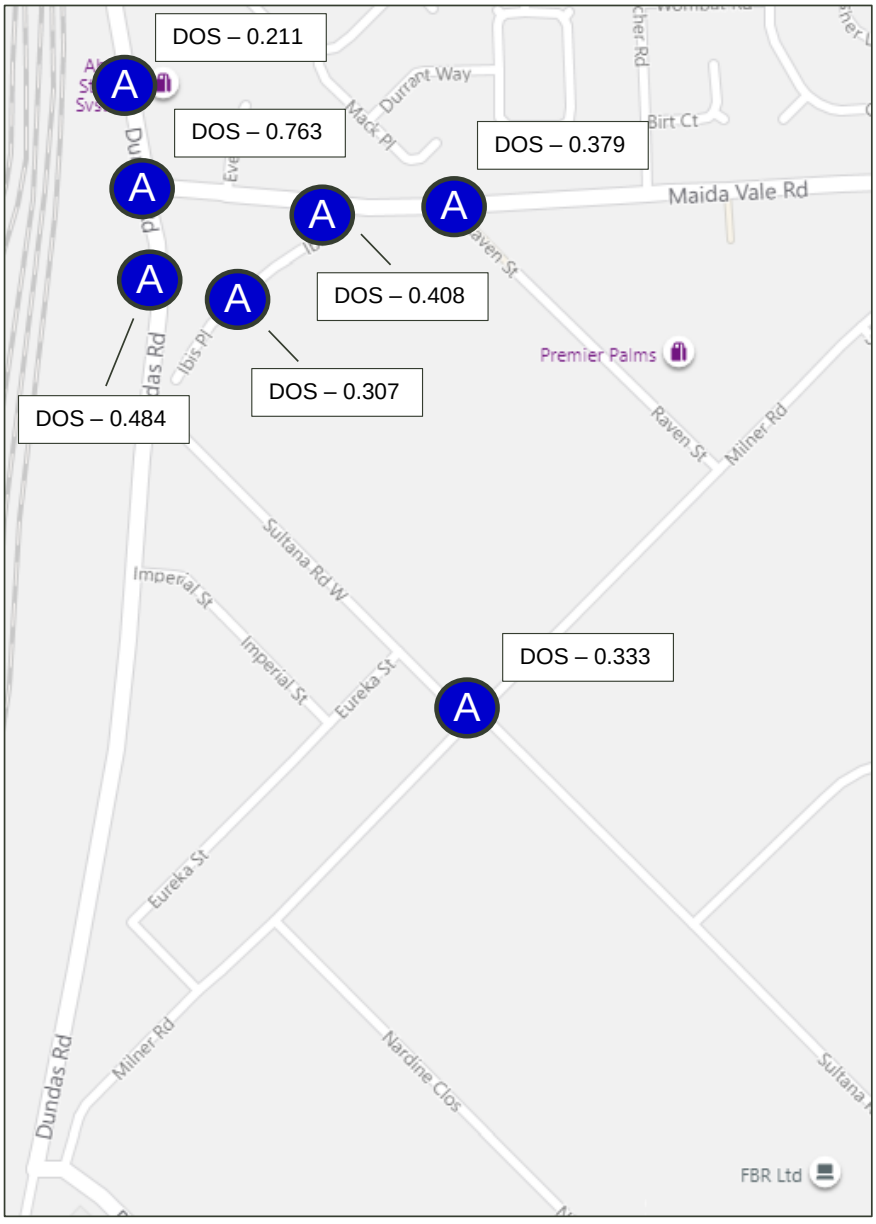


Figure 7-26: Scenario 2B – AM Peak Results Summary

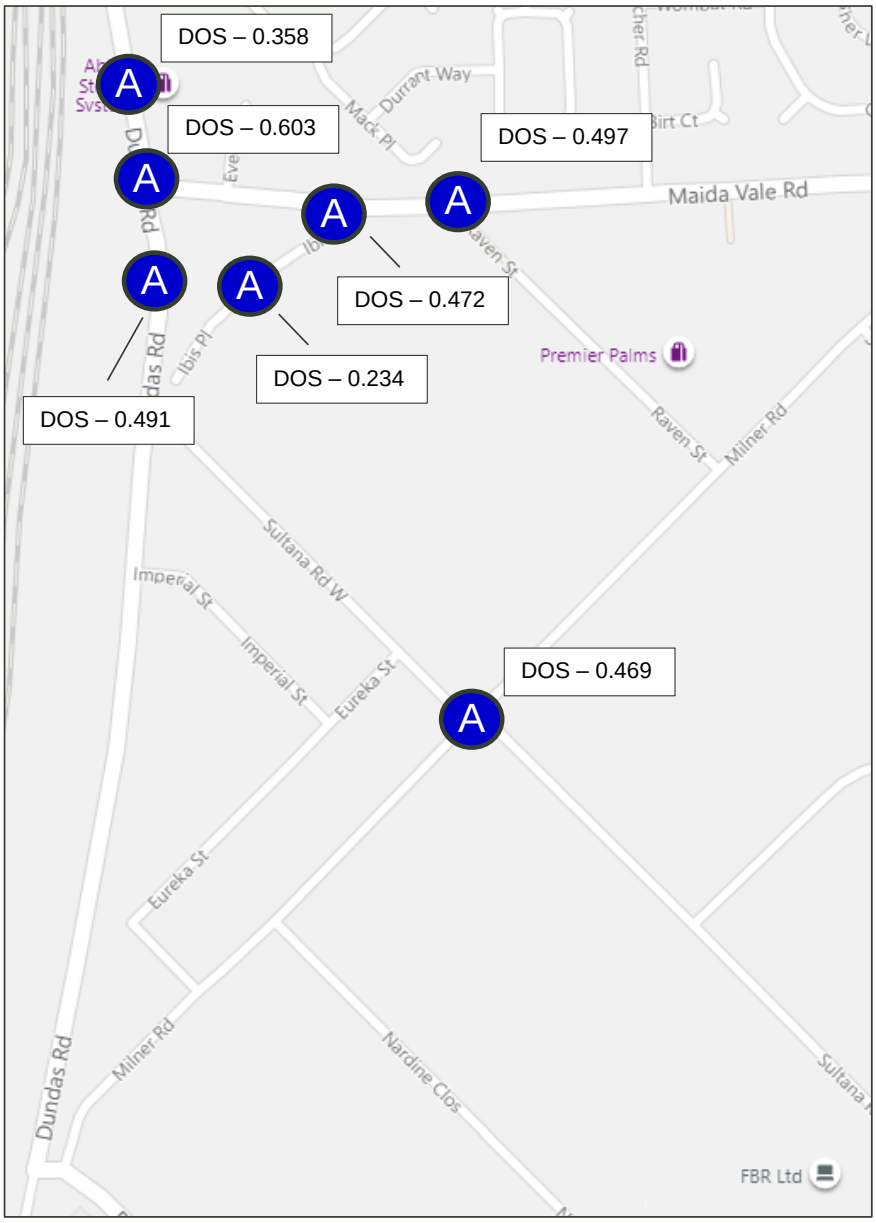


Figure 7-27: Scenario 2B – PM Peak Results Summary

Detailed SIDRA outputs are included in Appendix B.

7.9.4 Scenario 3 – 10 Years after Opening (2031)

Summaries of the intersection performances for Scenario 3 are shown in Figure 7-28 and Figure 7-29 for Scenario 3 AM and PM peak hours respectively and indicate that the intersections will perform satisfactorily, with the exception of the Milner Road/ Sultana Road West intersection. This intersection is estimated to operate with LOS E and DOS 0.934 for the 2031 AM peak hour, and LOS E and DOS 0.978 for the 2031 PM peak hour. However, it is noted that this assessment conservatively assumes that all pedestrian crossing phases will run in every cycle and therefore underestimates the performance of the intersection.

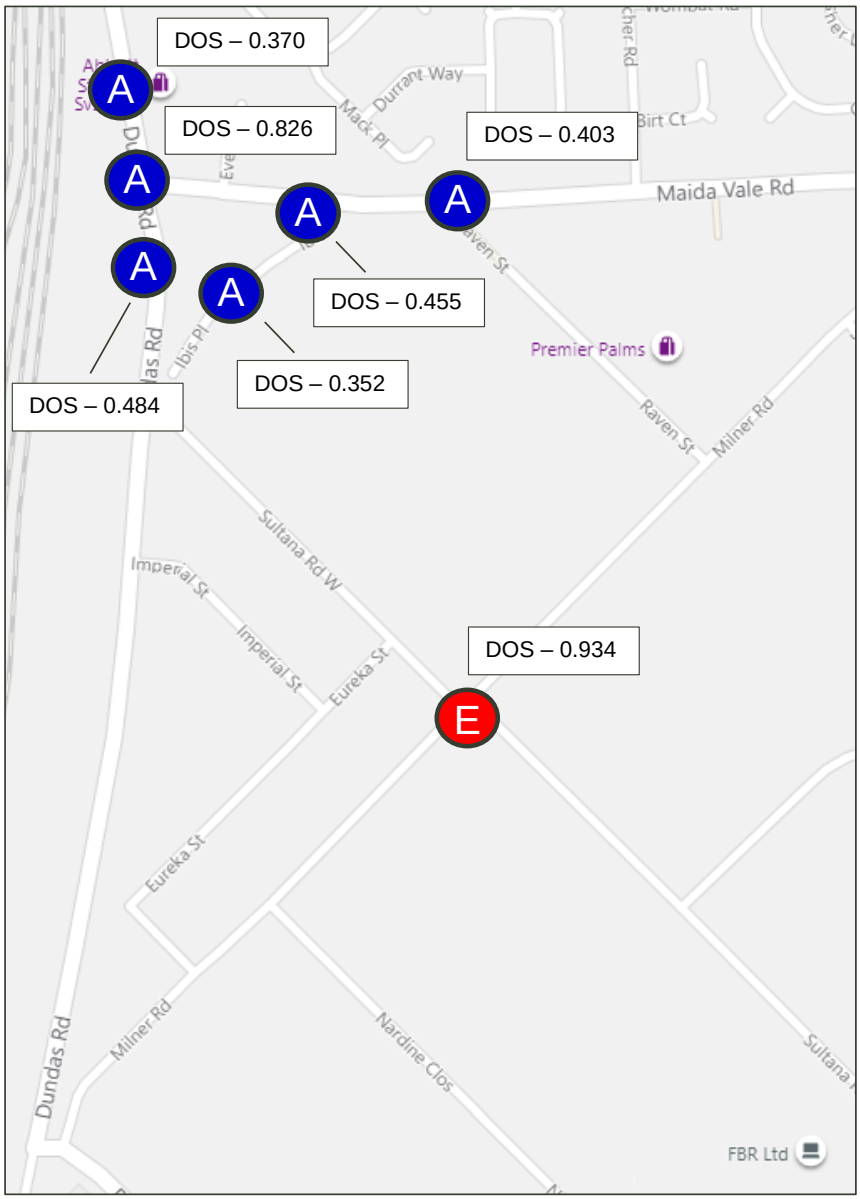


Figure 7-28: Scenario 3 – AM Peak Results Summary

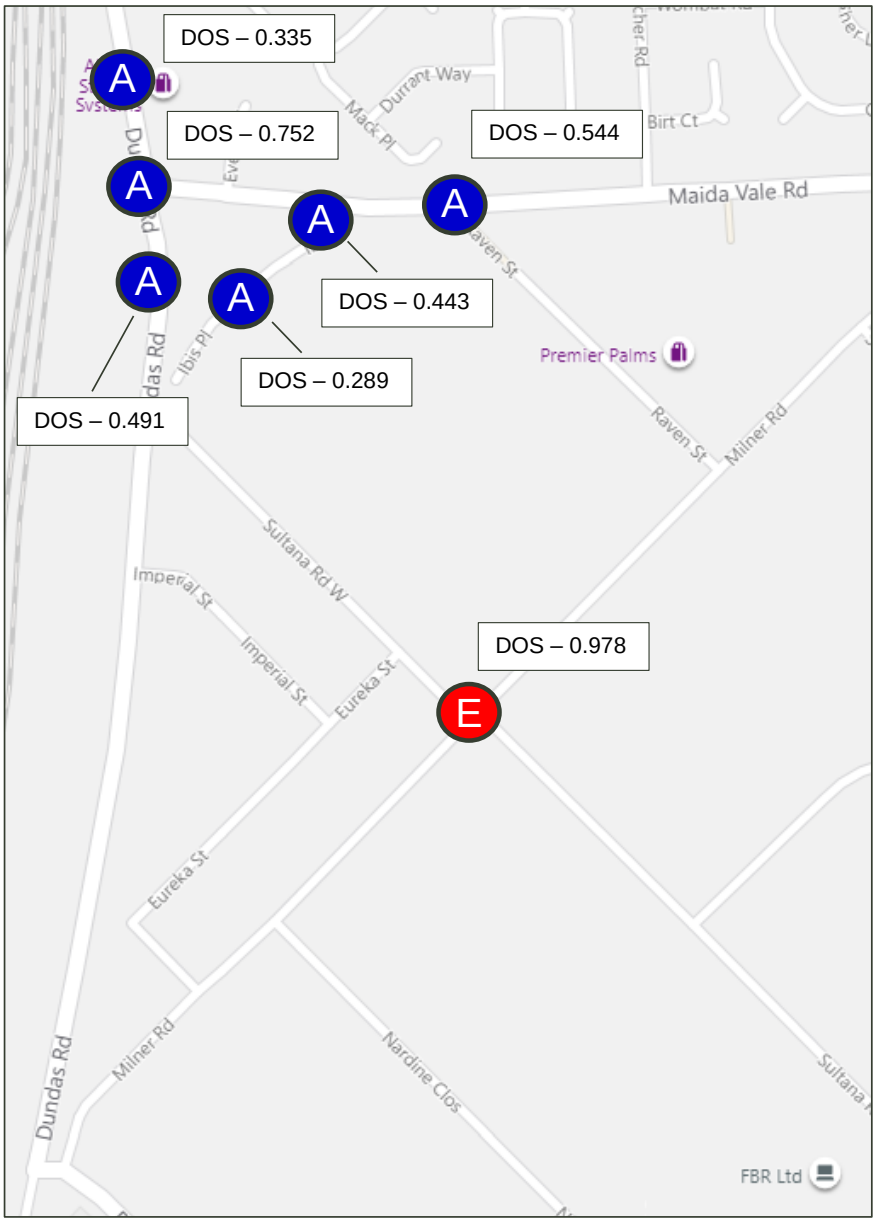


Figure 7-29: Scenario 3 – PM Peak Results Summary

The details of the SIDRA outputs are included in Appendix B.

7.10 SIDRA Results Summary

The intersection performances for the various scenarios are summarised in Table 7-8 and Table 7-9 for the AM and PM peaks respectively.

Table 7-8: Summary of Intersection Performances – AM Peak

Intersection	Output	Scenario 1	Scenario 2A	Scenario 2B	Scenario 3
Dundas Rd north/ Dundas Rd Link	LOS	A	A	A	A
	DOS	0.101	0.208	0.211	0.370
Dundas Rd/ Maida Vale Rd	LOS	-	A	A	A
	DOS	-	0.772	0.763	0.826
Maida Vale Rd/ Ibis Pl	LOS	-	A	A	A
	DOS	-	0.406	0.408	0.455
Milner Road/ Sultana Road West	LOS	A	A	A	E
	DOS	0.184	0.313	0.333	0.934
Maida Vale Rd/ Raven St	LOS	-	-	A	A
	DOS	-	-	0.379	0.403
Proposed Car Park Access 1	LOS	-	A	A	A
	DOS	-	0.484	0.484	0.484
Proposed Car Park Access 2	LOS	-	A	A	A
	DOS	-	0.301	0.307	0.352

Table 7-9: Summary of Intersection Performances – PM Peak

Intersection	Output	Scenario 1	Scenario 2A	Scenario 2B	Scenario 3
Dundas Rd north/ Dundas Rd Link	LOS	A	A	A	A
	DOS	0.176	0.371	0.358	0.335
Dundas Rd/ Maida Vale Rd	LOS	-	A	A	A
	DOS	-	0.641	0.603	0.752
Maida Vale Rd/ Ibis Pl	LOS	-	A	A	A
	DOS	-	0.475	0.472	0.443
Milner Road/ Sultana Road West	LOS	A	A	A	E
	DOS	0.142	0.512	0.469	0.978
Maida Vale Rd/ Raven St	LOS	-	-	A	A
	DOS	-	-	0.497	0.544
Proposed Car Park Access 1	LOS	-	A	A	A
	DOS	-	0.491	0.491	0.491
Proposed Car Park Access 2	LOS	-	A	A	A
	DOS	-	0.239	0.234	0.289

As shown in the above tables, all intersections are estimated to operate satisfactorily all scenarios, with the exception of the Milner Road/ Sultana Road West intersection. However, as previously noted, this assessment conservatively assumes that all pedestrian crossing phases will run in every cycle (see Figure 7-30and Figure 7-31) and therefore likely overestimates the delays at this intersection.

The details of the SIDRA outputs are included in Appendix B.

Figure 7-30: Assumed signal phasing sequence for Milner Road/ Sultana Road West for Scenario 3 (2031) AM Peak

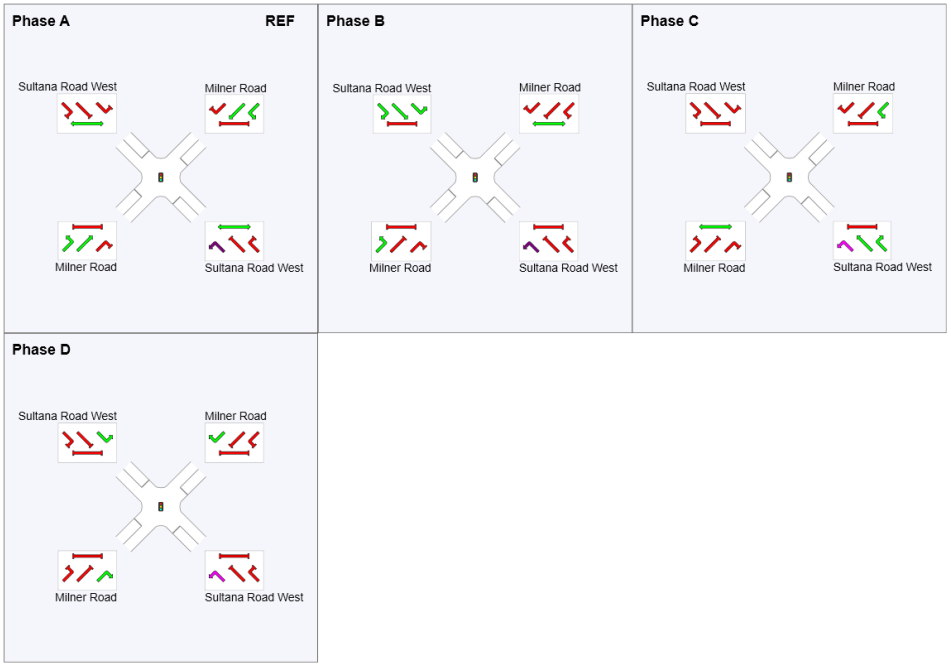


Figure 7-31: Assumed signal phasing sequence for Milner Road/ Sultana Road West for Scenario 3 (2031) PM Peak

8 Summary

The following conclusions have been reached as part of the analysis and assessment undertaken for the proposed multi-storey car park proposed as part of the Forrestfield Station:

- **Public Transport:** The existing public transport coverage in the area is considered poor as there are only limited services available within 800m walking distance. This will be substantially improved when the Forrestfield Station opens, as this will provide a high-quality rail connection, as well as a substantial increase in the number and frequencies of buses servicing the adjacent areas.
- **Pedestrian and Cycling:** The existing pedestrian and cycling network is considered adequate to accommodate the existing low-density population and employment densities in the immediate area. As part of the FNDSP, substantial upgrades of the pedestrian and cycling infrastructure is proposed in order to achieve the intended development of the area as a TOD.
- **Road Safety:** A total of six crashes that have resulted in medical attention (2 crashes) or hospitalisation (4 crashes) were recorded to have occurred in the past 5 years at either the Dundas Road/ Berkshire Road intersection, or midblock on Milner Road close to intersection at Berkshire Road. These crashes are likely to due to the intersections located relatively close. This is expected to be improved with the proposed signalisation of the intersection as part of the FNDSP.
- **Road Network:** Traffic analysis was undertaken for seven key intersections as part of this assessment. This analysis was undertaken for four scenarios; existing conditions, year of opening (2021) with and without the Raven Street extension, and 2031.
  - **Dundas Road north/ Dundas Road Link**: The model results indicate that this intersection will perform satisfactorily during both the AM and PM peak hours for all scenarios.
  - **Dundas Road/ Maida Vale Road**: The model results indicate that this intersection will perform satisfactorily during both the AM and PM peak hours for all scenarios.
  - **Maida Vale Road/ Ibis Place**: The model results indicate that this intersection will perform satisfactorily during both the AM and PM peak hours for all scenarios.
  - **Milner Road/ Sultana Road West**: While the model results indicate that this intersection will operate with LOS E for both the 2031 AM and PM peak hours, this assessment conservatively assumes that all pedestrian crossing phases will run in every cycle and therefore likely overestimates the delays at this intersection.
  - **Maida Vale Road/ Raven Street**: The model results indicate that this intersection will perform satisfactorily during both the AM and PM peak hours for all scenarios.
  - **Proposed Car park Access 1**: The model results indicate that this intersection will perform satisfactorily during both the AM and PM peak hours for all scenarios. However, it is noted that this assessment assumes that the entry lanes for the car park will not include any physical barriers to reduce the risk of vehicles queueing back to the service road. If the installation of physical barriers (such as boomgates) are to be considered at the entry lanes, it is recommended that any potential impacts of these barriers are investigated further to reduce the risk of queues spilling back to the service road.
  - **Proposed Car park Access 2:** The model results indicate that this intersection will perform satisfactorily during both the AM and PM peak hours for all scenarios.
- **Parking Demand:** If the parking demand exceeds the 1,249 parking bays available, PTA have made an allowance for an additional parking structure (adjacent to Sultana Road West) that can accommodate up to 600 additional parking bays if required. It is noted that these additional parking bays are not considered to be required until post-2031.

Appendix A: Proposed Development Plan

FORRESTFIELD STATION
MULTI STOREY CARPARK

Sheet Name	No. .
GROUND FLOOR PLAN	FAL-SINRW-MELC-AR-SKT-00003
COVERPAGE	FAL-SINRW-MELC-AR-SKT-00001
LEVEL 1 FLOOR PLAN	FAL-SINRW-MELC-AR-SKT-00004
LEVEL 2 FLOOR PLAN	FAL-SINRW-MELC-AR-SKT-00005
SECTIONS	FAL-SINRW-MELC-AR-SKT-00008
NORTH AND SOUTH ELEVATIONS	FAL-SINRW-MELC-AR-SKT-00006
EAST AND WEST ELEVATIONS	FAL-SINRW-MELC-AR-SKT-00007
SITE PLAN	FAL-SINRW-MELC-AR-SKT-00002

CONCEPT DESIGN

REV	DATE	AMENDMENT	DSN	DRN	CHKD	APP
B1	25/07/19	REVISED CONCEPT DESIGN		HS	MC	
A1	27/05/19	CONCEPT DESIGN		HS	MC	

ORIG SIZE A1

0 1 2 3 4 5 10 m

Public Transport Authority

Forrestfield-Airport Link
Connect. Fly. Grow.

salini impregilo NRW

REFERENCE DRGS

SCALE: (@A1)

DATUM:
HORIZONTAL: PCG94
VERTICAL: AHD71

DOC REVIEW NOTE No.

DESIGNED Designer
DRAWN Author
CHECKED Checker
APPROVED FOR ISSUE
EXECUTIVE DIRECTOR
PTA Division/External Company
DATE

Government of Western Australia Public Transport Authority

FORRESTFIELD - AIRPORT LINK

FORRESFIELD STATION MULTI STOREY CARPARK

COVERPAGE

PTA Drawing No: FAL-SINRW-MELC-AR-SKT-00001 REV : B1

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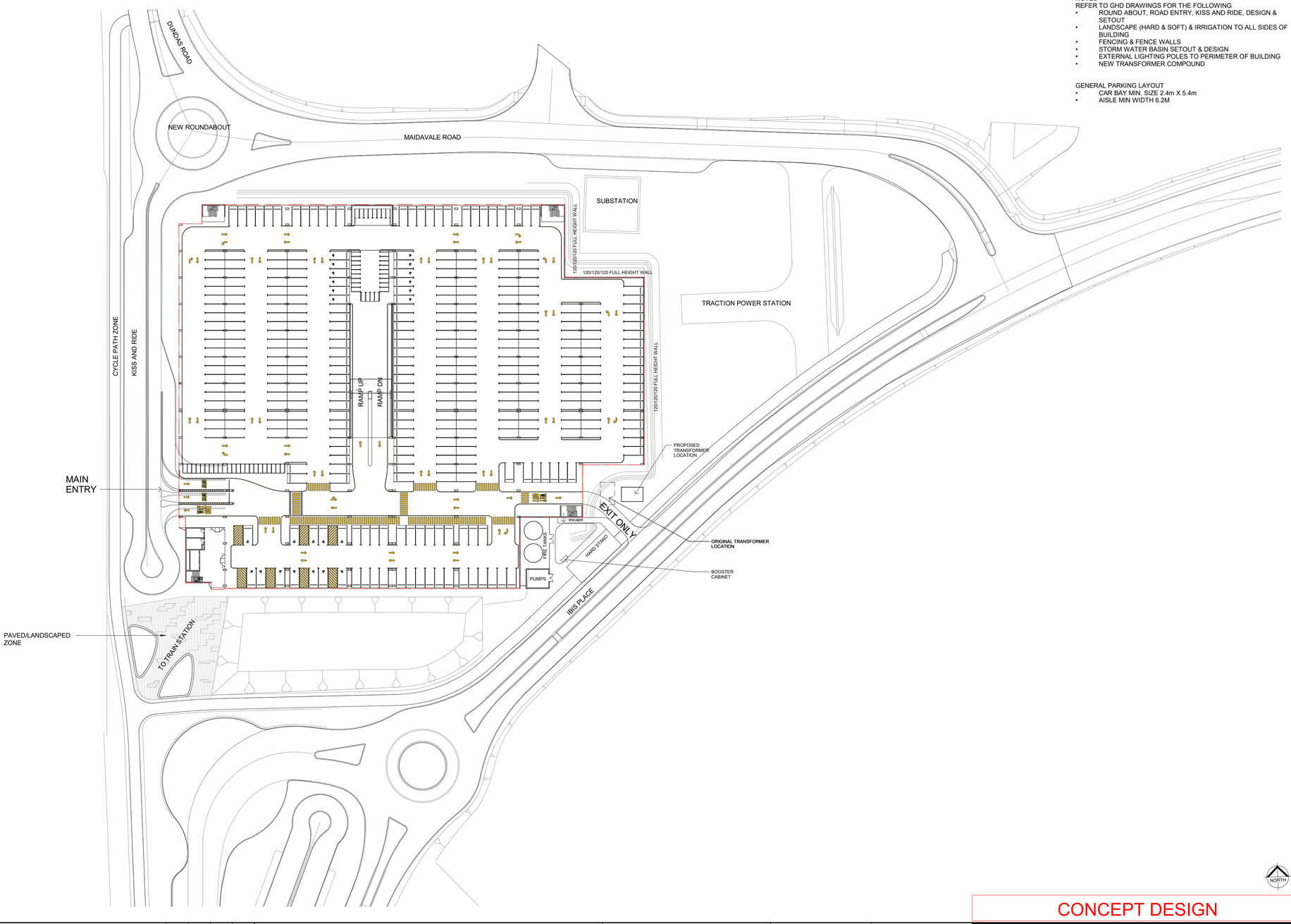
FAL-AURECON-TM-RPT-00002_0

NOTES
REFER TO GHD DRAWINGS FOR THE FOLLOWING
- ROUND ABOUT, ROAD ENTRY, KISS AND RIDE, DESIGN & SETOUT
- LANDSCAPE (HARD & SOFT) & IRRIGATION TO ALL SIDES OF BUILDING
- FENCING & FENCE WALLS
- STORM WATER BASIN SETOUT & DESIGN
- EXTERNAL LIGHTING POLES TO PERIMETER OF BUILDING
- NEW TRANSFORMER COMPOUND

GENERAL PARKING LAYOUT
- CAR BAY MIN. SIZE 2.4m X 5.4m
- AISLE MIN WIDTH 6.2M



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A1	27/05/19	CONCEPT DESIGN		HS	MC	

ORIG SIZE A1 — 0 1 2 3 4 5 10 m

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Public Transport Authority

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SCALE: 1 : 500 (@A1)
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FORRESFIELD STATION MULTI STOREY CARPARK

SITE PLAN

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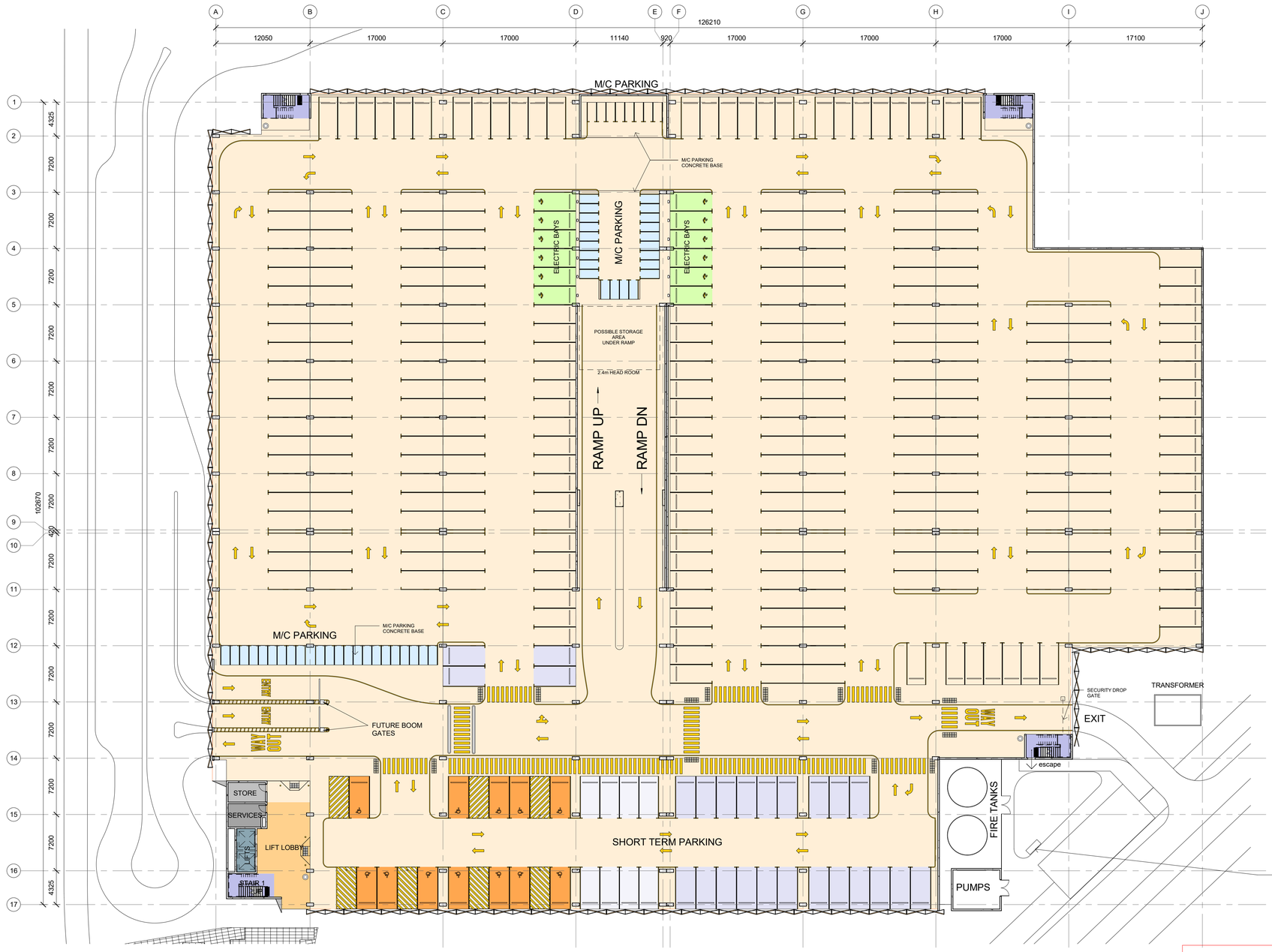

NOTES
REFER TO GHD DRAWINGS FOR THE FOLLOWING
- ROUND ABOUT, ROAD ENTRY, KISS AND RIDE, DESIGN & SETOUT
- LANDSCAPE (HARD & SOFT) & IRRIGATION TO ALL SIDES OF BUILDING
- FENCING & FENCE WALLS
- STORM WATER BASIN SETOUT & DESIGN
- EXTERNAL LIGHTING POLES TO PERIMETER OF BUILDING
- NEW TRANSFORMER COMPOUND

GENERAL PARKING LAYOUT
- CAR BAY MIN. SIZE 2.4m X 5.4m
- AISLE MIN WIDTH 6.2M

PARKING SCHEDULE- GROUND...	
Count	Description
12	ACROD BAY
12	ELECTRIC BAY
52	MOTORCYCLE BAY
25	SHORT TERM BAY
8	SMALL SHORT TERM BAY
298	STANDARD BAY

Grand total: 407

PARKING SCHEDULE- OVERALL...	
Count	Description
12	ACROD BAY
12	ELECTRIC BAY
25	SHORT TERM BAY
8	SMALL SHORT TERM BAY
1140	STANDARD BAY

Grand total: 1197
(+52 MOTORCYCLE BAYS)

CONCEPT DESIGN

REV	DATE	AMENDMENT	DSN	DRN	CHKD	APP
B1	25/07/19	REVISED CONCEPT DESIGN		HS	MC	
A1	27/05/19	CONCEPT DESIGN		HS	MC	

ORIG SIZE A1 — 0 1 2 3 4 5 10 m

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FORRESFIELD STATION MULTI STOREY CARPARK

GROUND FLOOR PLAN

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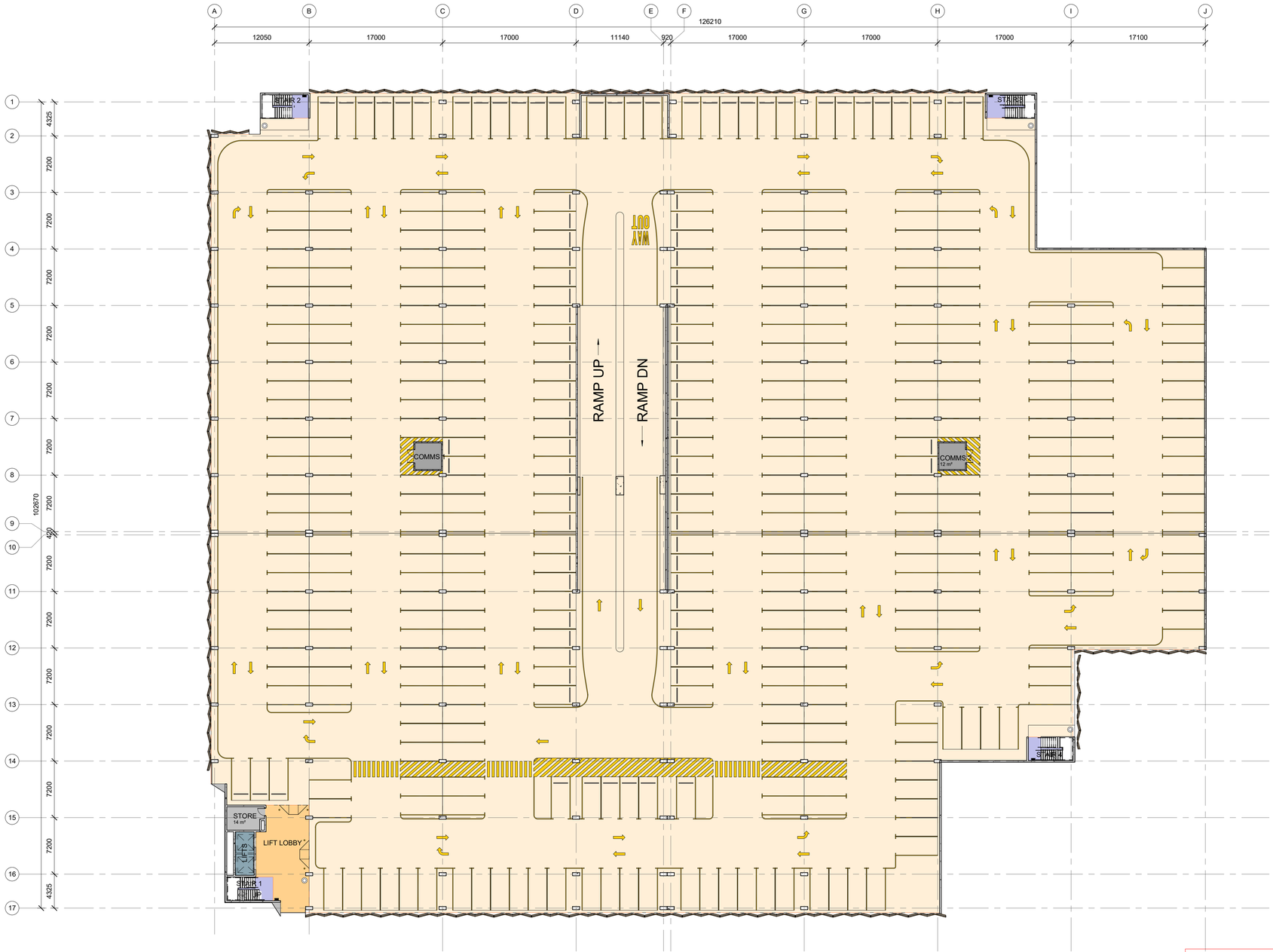

NOTES
REFER TO GHD DRAWINGS FOR THE FOLLOWING
- ROUND ABOUT, ROAD ENTRY, KISS AND RIDE, DESIGN & SETOUT
- LANDSCAPE (HARD & SOFT) & IRRIGATION TO ALL SIDES OF BUILDING
- FENCING & FENCE WALLS
- STORM WATER BASIN SETOUT & DESIGN
- EXTERNAL LIGHTING POLES TO PERIMETER OF BUILDING
- NEW TRANSFORMER COMPOUND

GENERAL PARKING LAYOUT
- CAR BAY MIN. SIZE 2.4m X 5.4m
- AISLE MIN WIDTH 6.2M

PARKING SCHEDULE- LEVEL 1	
Count	Description
410	STANDARD BAY

Grand total: 410

PARKING SCHEDULE- OVERALL...	
Count	Description
12	ACROD BAY
12	ELECTRIC BAY
25	SHORT TERM BAY
8	SMALL SHORT TERM BAY
1140	STANDARD BAY

Grand total: 1197
(+52 MOTORCYCLE BAYS)

NORTH

CONCEPT DESIGN

REV	DATE	AMENDMENT	DSN	DRN	CHKD	APP
B1	25/07/19	REVISED CONCEPT DESIGN		HS	MC	
A1	23/05/19	CONCEPT DESIGN		HS	MC	

ORIG SIZE A1

0 1 2 3 4 5 10 m

Public Transport Authority

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FORRESFIELD STATION MULTI STOREY CARPARK

LEVEL 1 FLOOR PLAN

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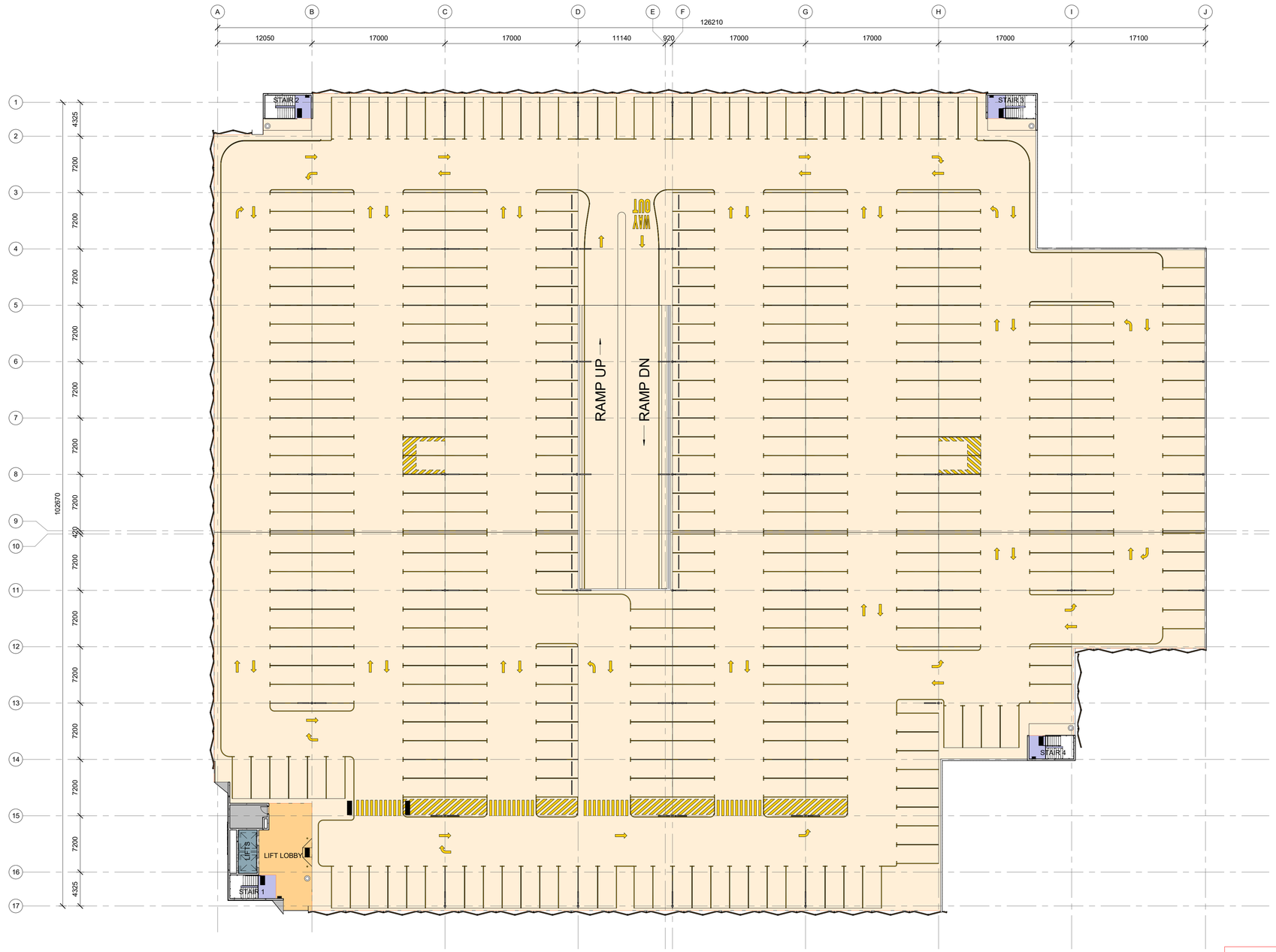

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- ROUND ABOUT, ROAD ENTRY, KISS AND RIDE, DESIGN & SETOUT
- LANDSCAPE (HARD & SOFT) & IRRIGATION TO ALL SIDES OF BUILDING
- FENCING & FENCE WALLS
- STORM WATER BASIN SETOUT & DESIGN
- EXTERNAL LIGHTING POLES TO PERIMETER OF BUILDING
- NEW TRANSFORMER COMPOUND

GENERAL PARKING LAYOUT
- CAR BAY MIN. SIZE 2.4m X 5.4m
- AISLE MIN WIDTH 6.2M

PARKING SCHEDULE- LEVEL 2	
Count	Description
432	STANDARD BAY
Grand total: 432	

PARKING SCHEDULE- OVERALL...	
Count	Description
12	ACROD BAY
12	ELECTRIC BAY
25	SHORT TERM BAY
8	SMALL SHORT TERM BAY
1140	STANDARD BAY
Grand total: 1197	
(+52 MOTORCYCLE BAYS)	

NORTH

CONCEPT DESIGN

REV	DATE	AMENDMENT	DSN	DRN	CHKD	APP
B1	25/07/19	REVISED CONCEPT DESIGN		HS	MC	
A1	27/05/19	CONCEPT DESIGN		HS	MC	

ORIG SIZE A1

0 1 2 3 4 5 10 m

Public Transport Authority

Forrestfield-Airport Link
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REFERENCE DRGS

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DATUM: HORIZONTAL: PCG94 VERTICAL: AHD71

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FORRESFIELD STATION MULTI STOREY CARPARK

LEVEL 2 FLOOR PLAN

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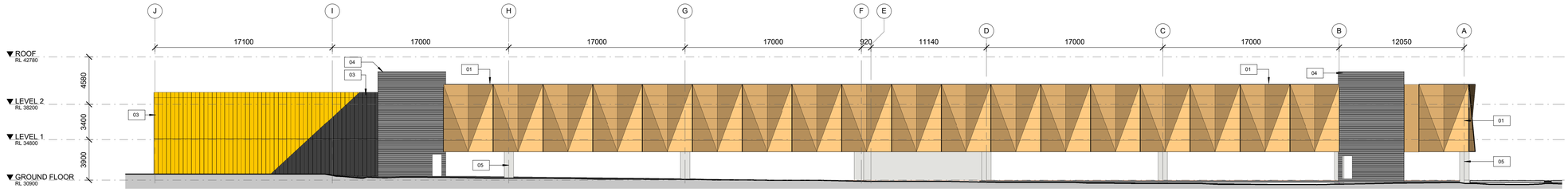

NORTH ELEVATION
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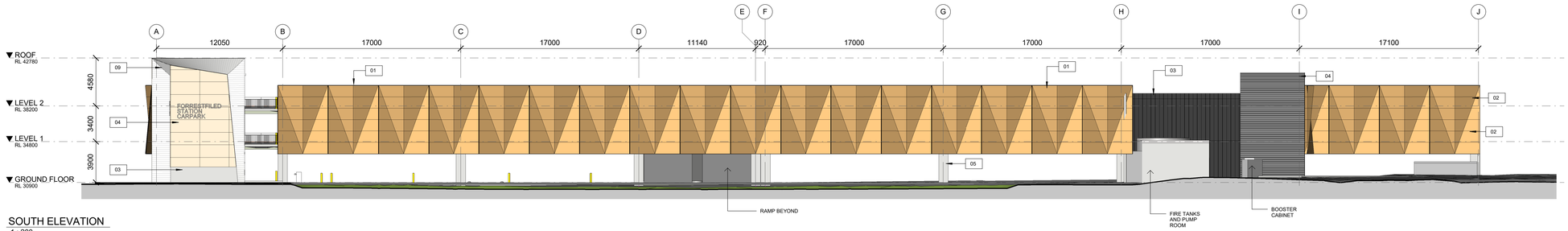

SOUTH ELEVATION
1 : 200

EXTERIOR FINISHES

01 TRIANGULATED PERFORATED ALUMINIUM SHEET CLADDING - POWDERCOAT FINISH FIXED TO STEEL FRAMING

02 RECTANGULAR PERFORATED ALUMINIUM SHEET CLADDING - POWDERCOAT FINISH FIXED TO STEEL FRAMING

03 PRECAST CONCRETE WALL WITH TEXTURE PAINT FINISH

04 PRECAST CONCRETE WALL WITH SELECT PATTERN TEXTURE PAINT FINISH

05 PRECAST COLUMNS - PAINTED

06 WELDED STEEL MESH - GALVANISED FINISH

07 ALUMINIUM BOX SECTION GLAZING - POWDERCOAT FINISH. LOW E PERFORMANCE GLASS TO MEET SECTION J

08 CFC SHEETING ON STEEL FRAME - PRE-FINISHED VITRAPANEL OR SIMILAR

09 ALUMINIUM SHEET CLADDING - POWDERCOAT FINISH

NOTE:
TYPICALLY ALUMINIUM PANEL SCREENS HAVE 50% PERFORATION FIXED TO GALV MS BOX SECTION FRAMING

CONCEPT DESIGN

REV	DATE	AMENDMENT	DSN	DRN	CHKD	APP
B1	25/07/19	REVISED CONCEPT DESIGN		HS	MC	
A1	27/05/19	CONCEPT DESIGN		HS	MC	

ORIG SIZE A1

0 1 2 3 4 5 10 m

Public Transport Authority

Forrestfield-Airport Link
Connect. Fly. Grow.

salini impregilo NRW

REFERENCE DRGS

SCALE: As indicated (@A1)

DATUM:
HORIZONTAL: PCG94
VERTICAL: AHD71

DOC REVIEW NOTE No.

DESIGNED Designer
DRAWN Author
CHECKED Checker

APPROVED FOR ISSUE
EXECUTIVE DIRECTOR
PTA Division/External Company
DATE

Government of Western Australia Public Transport Authority

FORRESTFIELD - AIRPORT LINK

FORRESFIELD STATION MULTI STOREY CARPARK

NORTH AND SOUTH ELEVATIONS

PTA Drawing No: FAL-SINRW-MELC-AR-SKT-00006 REV : B1

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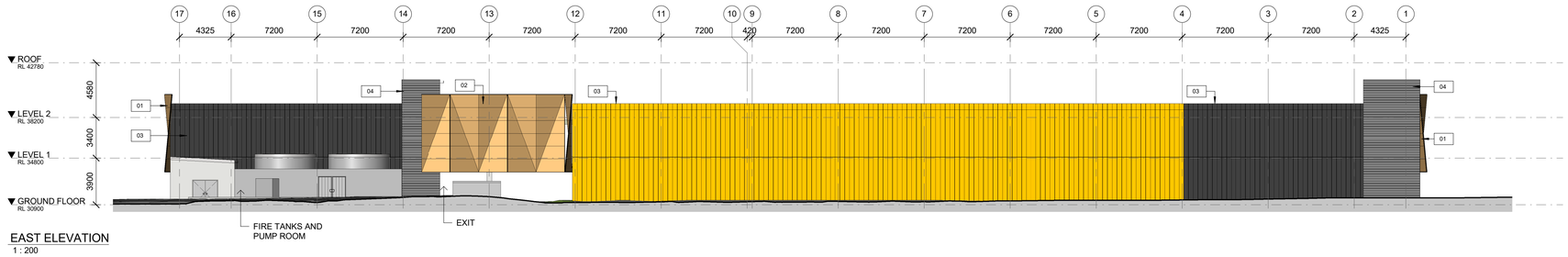
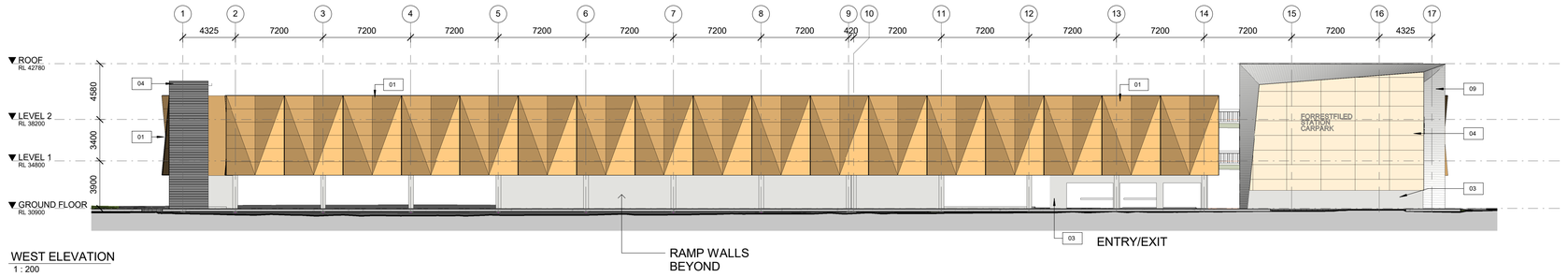


EAST ELEVATION
1 : 200



WEST ELEVATION
1 : 200

EXTERIOR FINISHES

01 TRIANGULATED PERFORATED ALUMINIUM SHEET CLADDING - POWDERCOAT FINISH FIXED TO STEEL FRAMING

02 RECTANGULAR PERFORATED ALUMINIUM SHEET CLADDING - POWDERCOAT FINISH FIXED TO STEEL FRAMING

03 PRECAST CONCRETE WALL WITH TEXTURE PAINT FINISH

04 PRECAST CONCRETE WALL WITH SELECT PATTERN TEXTURE PAINT FINISH

05 PRECAST COLUMNS - PAINTED

06 WELDED STEEL MESH - GALVANISED FINISH

07 ALUMINIUM BOX SECTION GLAZING - POWDERCOAT FINISH. LOW E PERFORMANCE GLASS TO MEET SECTION J

08 CFC SHEETING ON STEEL FRAME - PRE-FINISHED VITRAPANEL OR SIMILAR

09 ALUMINIUM SHEET CLADDING - POWDERCOAT FINISH

NOTE:
TYPICALLY ALUMINIUM PANEL SCREENS HAVE 50% PERFORATION FIXED TO GALV MS BOX SECTION FRAMING

CONCEPT DESIGN

REV	DATE	AMENDMENT	DSN	DRN	CHKD	APP
B1	25/07/19	REVISED CONCEPT DESIGN		HS	MC	
A1	27/05/19	CONCEPT DESIGN		HS	MC	

ORIG SIZE A1

0 1 2 3 4 5 10 m

Public Transport Authority

Forrestfield-Airport Link
Connect. Fly. Grow.

salini impregilo NRW

REFERENCE DRGS

SCALE: As indicated (@A1)

DATUM:
HORIZONTAL: PCG94
VERTICAL: AHD71

DOC REVIEW NOTE No.

DESIGNED Designer
DRAWN Author
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PTA Division/External Company
DATE

Government of Western Australia Public Transport Authority

FORRESTFIELD - AIRPORT LINK

FORRESFIELD STATION MULTI STOREY CARPARK

EAST AND WEST ELEVATIONS

PTA Drawing No: FAL-SINRW-MELC-AR-SKT-00007 REV : B1

CAD DRAWING PATHNAME C:\Users\p.nimma\Documents\26-ARCH-A-308-10-FORRESTFIELD MULTI STOREY CARPARK_R17_p.nimma.rvt
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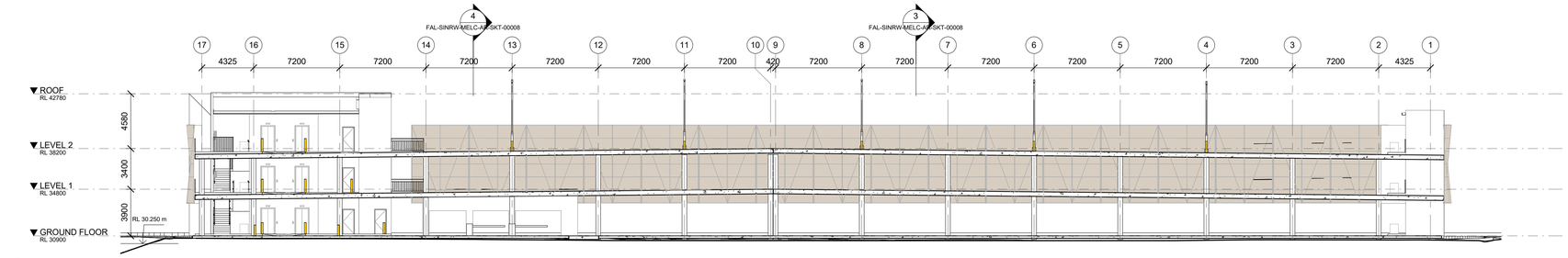
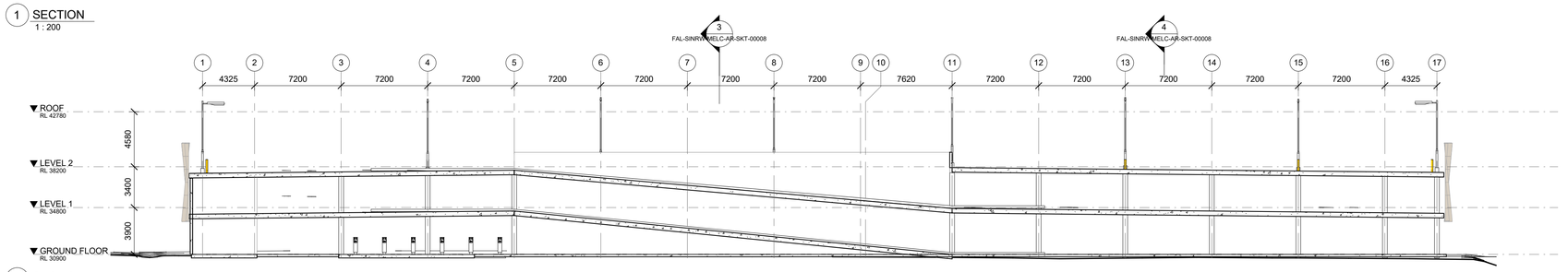


1 SECTION
1 : 200



2 SECTION
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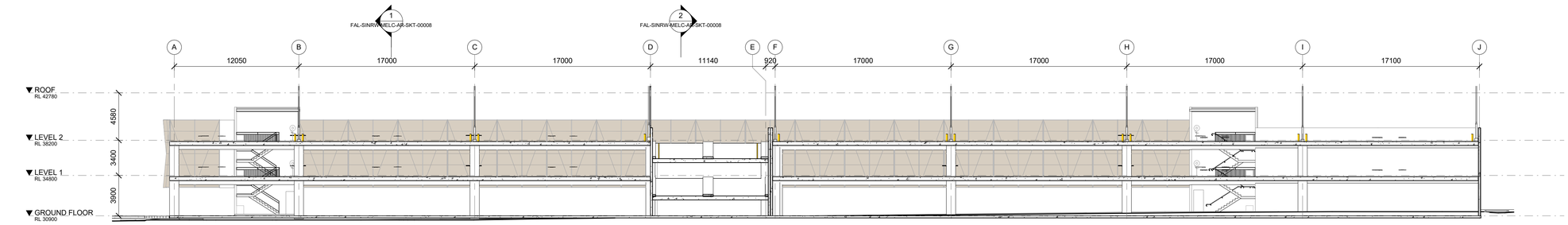
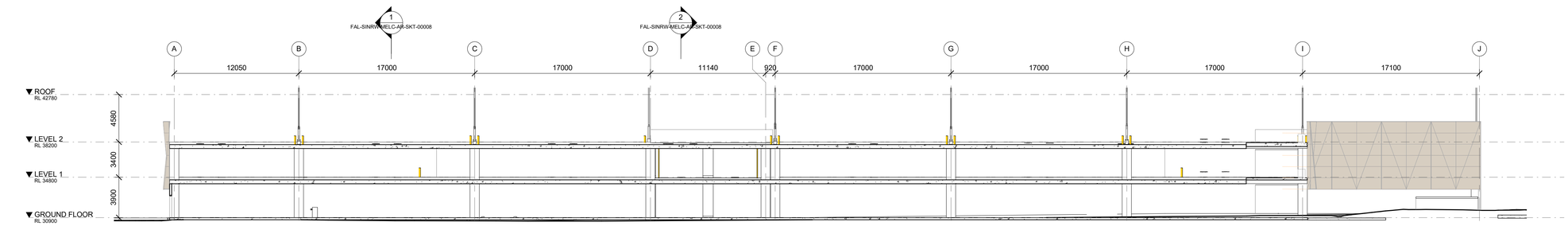


3 SECTION
1 : 200



4 SECTION
1 : 200

NOTES
REFER TO GHD DRAWINGS FOR THE FOLLOWING
- ROUND ABOUT, ROAD ENTRY, KISS AND RIDE, DESIGN & SETOUT
- LANDSCAPE (HARD & SOFT) & IRRIGATION TO ALL SIDES OF BUILDING
- FENCING & FENCE WALLS
- STORM WATER BASIN SETOUT & DESIGN
- EXTERNAL LIGHTING POLES TO PERIMETER OF BUILDING
- NEW TRANSFORMER COMPOUND

GENERAL PARKING LAYOUT
- CAR BAY MIN. SIZE 2.4m X 5.4m
- AISLE MIN WIDTH 6.2M

NOTE:
TYPICALLY ALUMINIUM
PANEL SCREENS HAVE
50% PERFORATION FIXED
TO GALV MS BOX
SECTION FRAMING

CONCEPT DESIGN

REV	DATE	AMENDMENT	DSN	DRN	CHKD	APP
B1	25/07/19	REVISED CONCEPT DESIGN		HS	MC	
A1	27/05/19	CONCEPT DESIGN		HS	MC	

ORIG SIZE A1

0 1 2 3 4 5 10 m

Public Transport Authority

Forrestfield-Airport Link
Connect. Fly. Grow.

salini impregilo NRW

REFERENCE DRGS

SCALE: As indicated (@A1)

DATUM:
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FORRESTFIELD - AIRPORT LINK

FORRESFIELD STATION MULTI STOREY CARPARK

SECTIONS

PTA Drawing No: FAL-SINRW-MELC-AR-SKT-00008 REV : B1

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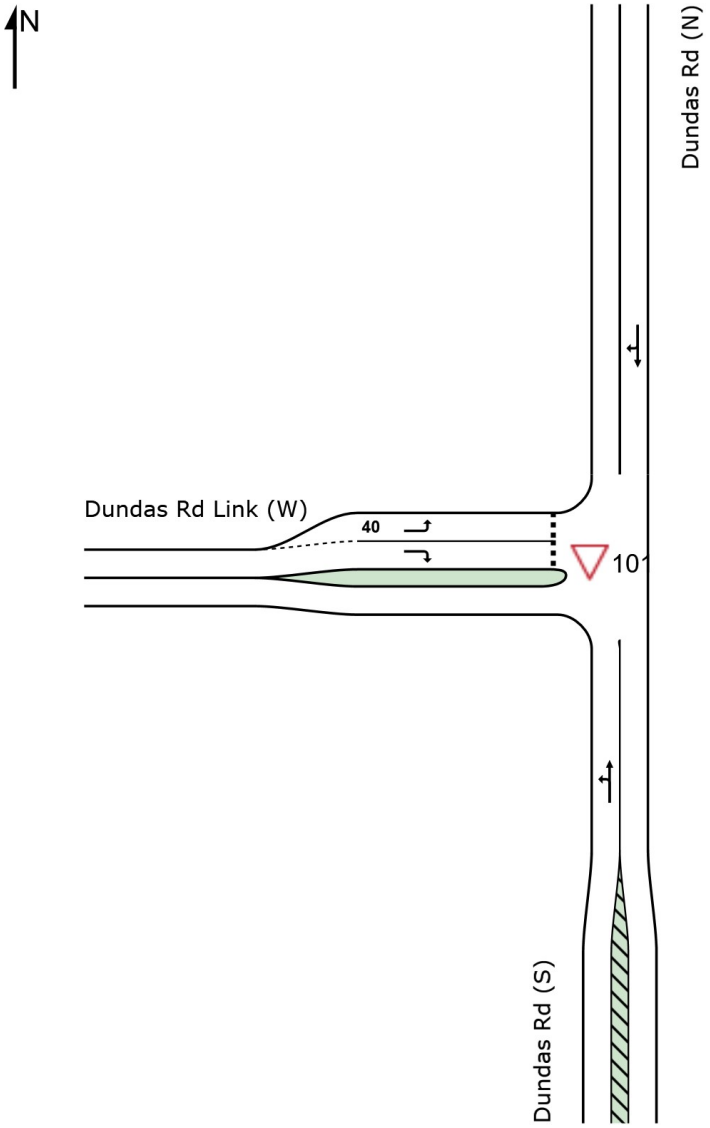
FAL-AURECON-TM-RPT-00002_0

Appendix B: SIDRA Results

SITE LAYOUT

▽ Site: 101 [Dundas Road North/ Dundas Road Link_2018_AM]

Dundas Road/ Dundas Road Link_2018_AM
Site Category: (None)
Giveway / Yield (Two-Way)



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Forrestfield Station Multi-Storey Car Park Page 76 of 128

MOVEMENT SUMMARY

Site: 101 [Dundas Road North/ Dundas Road Link_2018_AM]

Dundas Road/ Dundas Road Link_2018_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Rd (S)												
1	L2	11	0.0	0.081	5.5	LOS A	0.0	0.0	0.00	0.04	0.00	56.9
2	T1	145	0.8	0.081	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.4
Approach		156	0.7	0.081	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.2
North: Dundas Rd (N)												
8	T1	69	0.0	0.101	0.3	LOS A	0.5	4.0	0.27	0.37	0.27	53.5
9	R2	135	1.7	0.101	5.9	LOS A	0.5	4.0	0.27	0.37	0.27	53.9
Approach		203	1.1	0.101	4.0	NA	0.5	4.0	0.27	0.37	0.27	53.8
West: Dundas Rd Link (W)												
10	L2	94	4.8	0.067	6.1	LOS A	0.3	2.1	0.24	0.55	0.24	52.5
12	R2	85	93.4	0.079	7.6	LOS A	0.2	3.0	0.28	0.64	0.28	40.7
Approach		180	46.9	0.079	6.8	LOS A	0.3	3.0	0.26	0.60	0.26	47.4
All Vehicles		539	16.3	0.101	3.9	NA	0.5	4.0	0.19	0.35	0.19	52.5

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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Forrestfield Station Multi-Storey Car Park Page 77 of 128

MOVEMENT SUMMARY

▽ Site: 101 [Dundas Road North/ Dundas Road Link_2018_PM]

Dundas Road/ Dundas Road Link_2018_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Rd (S)												
1	L2	10	0.0	0.059	5.5	LOS A	0.0	0.0	0.00	0.05	0.00	56.8
2	T1	104	0.0	0.059	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.3
Approach		115	0.0	0.059	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.0
North: Dundas Rd (N)												
8	T1	131	0.0	0.176	0.3	LOS A	1.0	7.2	0.24	0.35	0.24	53.9
9	R2	231	0.5	0.176	5.8	LOS A	1.0	7.2	0.24	0.35	0.24	54.2
Approach		363	0.3	0.176	3.8	NA	1.0	7.2	0.24	0.35	0.24	54.1
West: Dundas Rd Link (W)												
10	L2	213	2.6	0.144	5.9	LOS A	0.6	4.8	0.21	0.55	0.21	52.7
12	R2	29	80.8	0.028	7.6	LOS A	0.1	1.0	0.32	0.65	0.32	41.5
Approach		243	12.0	0.144	6.1	LOS A	0.6	4.8	0.23	0.56	0.23	51.6
All Vehicles		720	4.2	0.176	4.1	NA	1.0	7.2	0.20	0.38	0.20	53.7

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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Forrestfield Station Multi-Storey Car Park Page 78 of 128

MOVEMENT SUMMARY

▽ Site: 101 [Dundas Road North/ Dundas Road Link_2021_AM_noRavenSt]

Dundas Road/ Dundas Road Link_2021_AM_noRavenSt
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Rd (S)												
1	L2	48	0.0	0.118	5.5	LOS A	0.0	0.0	0.00	0.14	0.00	55.6
2	T1	162	10.4	0.118	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	57.9
Approach		210	8.0	0.118	1.3	NA	0.0	0.0	0.00	0.14	0.00	57.4
North: Dundas Rd (N)												
8	T1	191	2.9	0.208	0.5	LOS A	1.1	8.4	0.33	0.29	0.33	54.3
9	R2	197	7.4	0.208	6.3	LOS A	1.1	8.4	0.33	0.29	0.33	53.9
Approach		388	5.2	0.208	3.4	NA	1.1	8.4	0.33	0.29	0.33	54.0
West: Dundas Rd Link (W)												
10	L2	256	8.3	0.190	6.3	LOS A	0.9	6.8	0.30	0.58	0.30	52.0
12	R2	240	1.9	0.160	6.2	LOS A	0.4	3.2	0.32	0.68	0.32	48.6
Approach		497	5.2	0.190	6.3	LOS A	0.9	6.8	0.31	0.63	0.31	50.7
All Vehicles		1094	5.7	0.208	4.3	NA	1.1	8.4	0.26	0.41	0.26	52.9

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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Forrestfield Station Multi-Storey Car Park Page 79 of 128

MOVEMENT SUMMARY

▽ Site: 101 [Dundas Road North/ Dundas Road Link_2021_PM_noRavenSt]

Dundas Road/ Dundas Road Link_2021_PM_noRavenSt
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Rd (S)												
1	L2	236	0.0	0.245	5.5	LOS A	0.0	0.0	0.00	0.31	0.00	53.6
2	T1	220	4.1	0.245	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	55.8
Approach		456	2.0	0.245	2.9	NA	0.0	0.0	0.00	0.31	0.00	54.7
North: Dundas Rd (N)												
8	T1	155	2.9	0.217	1.3	LOS A	1.2	9.2	0.52	0.39	0.52	52.9
9	R2	208	2.2	0.217	7.1	LOS A	1.2	9.2	0.52	0.39	0.52	53.4
Approach		363	2.5	0.217	4.7	NA	1.2	9.2	0.52	0.39	0.52	53.2
West: Dundas Rd Link (W)												
10	L2	482	5.8	0.371	6.7	LOS A	1.9	15.1	0.40	0.62	0.40	51.9
12	R2	53	2.1	0.037	6.3	LOS A	0.1	0.7	0.33	0.66	0.33	48.5
Approach		535	5.5	0.371	6.7	LOS A	1.9	15.1	0.40	0.62	0.40	51.7
All Vehicles		1354	3.5	0.371	4.9	NA	1.9	15.1	0.30	0.45	0.30	52.9

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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Forrestfield Station Multi-Storey Car Park Page 80 of 128

MOVEMENT SUMMARY

Site: 101 [Dundas Road North/ Dundas Road Link_2021_AM]

Dundas Road/ Dundas Road Link_2021_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Rd (S)												
1	L2	49	0.0	0.119	5.5	LOS A	0.0	0.0	0.00	0.14	0.00	55.6
2	T1	162	11.1	0.119	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	57.9
Approach		211	8.5	0.119	1.3	NA	0.0	0.0	0.00	0.14	0.00	57.3
North: Dundas Rd (N)												
8	T1	189	3.0	0.211	0.5	LOS A	1.1	8.7	0.34	0.30	0.34	54.2
9	R2	204	7.1	0.211	6.3	LOS A	1.1	8.7	0.34	0.30	0.34	53.8
Approach		393	5.1	0.211	3.5	NA	1.1	8.7	0.34	0.30	0.34	54.0
West: Dundas Rd Link (W)												
10	L2	265	8.5	0.197	6.3	LOS A	0.9	7.1	0.30	0.58	0.30	52.0
12	R2	240	1.9	0.160	6.3	LOS A	0.4	3.2	0.33	0.68	0.33	48.6
Approach		506	5.3	0.197	6.3	LOS A	0.9	7.1	0.31	0.63	0.31	50.7
All Vehicles		1110	5.9	0.211	4.4	NA	1.1	8.7	0.26	0.42	0.26	52.8

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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Forrestfield Station Multi-Storey Car Park Page 81 of 128

MOVEMENT SUMMARY

▽ Site: 101 [Dundas Road North/ Dundas Road Link_2021_PM]

Dundas Road/ Dundas Road Link_2021_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Rd (S)												
1	L2	237	0.0	0.238	5.5	LOS A	0.0	0.0	0.00	0.32	0.00	53.5
2	T1	206	4.4	0.238	0.0	LOS A	0.0	0.0	0.00	0.32	0.00	55.7
Approach		443	2.0	0.238	3.0	NA	0.0	0.0	0.00	0.32	0.00	54.5
North: Dundas Rd (N)												
8	T1	170	2.0	0.222	1.3	LOS A	1.2	9.4	0.50	0.37	0.50	53.1
9	R2	207	2.2	0.222	7.1	LOS A	1.2	9.4	0.50	0.37	0.50	53.5
Approach		376	2.1	0.222	4.5	NA	1.2	9.4	0.50	0.37	0.50	53.4
West: Dundas Rd Link (W)												
10	L2	472	5.7	0.358	6.6	LOS A	1.9	14.5	0.39	0.61	0.39	52.0
12	R2	48	2.3	0.034	6.3	LOS A	0.1	0.6	0.33	0.66	0.33	48.5
Approach		520	5.4	0.358	6.6	LOS A	1.9	14.5	0.38	0.62	0.38	51.7
All Vehicles		1339	3.4	0.358	4.8	NA	1.9	14.5	0.29	0.45	0.29	52.9

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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MOVEMENT SUMMARY

Site: 101 [Dundas Road North/ Dundas Road Link_2031_AM]

Dundas Road/ Dundas Road Link_2031_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Rd (S)												
1	L2	60	1.9	0.171	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	55.2
2	T1	216	25.0	0.171	0.0	LOS A	0.0	0.0	0.00	0.13	0.00	57.8
Approach		275	20.0	0.171	1.2	NA	0.0	0.0	0.00	0.13	0.00	57.2
North: Dundas Rd (N)												
8	T1	274	4.9	0.308	0.9	LOS A	1.8	13.9	0.43	0.31	0.43	53.9
9	R2	266	9.7	0.308	6.8	LOS A	1.8	13.9	0.43	0.31	0.43	53.4
Approach		540	7.3	0.308	3.8	NA	1.8	13.9	0.43	0.31	0.43	53.6
West: Dundas Rd Link (W)												
10	L2	461	9.8	0.370	6.9	LOS A	1.9	15.5	0.42	0.63	0.42	51.5
12	R2	257	0.4	0.195	6.7	LOS A	0.5	3.9	0.40	0.74	0.40	48.4
Approach		718	6.4	0.370	6.8	LOS A	1.9	15.5	0.42	0.67	0.42	50.7
All Vehicles		1534	9.2	0.370	4.7	NA	1.9	15.5	0.35	0.45	0.35	52.6

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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MOVEMENT SUMMARY

▽ Site: 101 [Dundas Road North/ Dundas Road Link_2031_PM]

Dundas Road/ Dundas Road Link_2031_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Rd (S)												
1	L2	242	0.0	0.327	5.5	LOS A	0.0	0.0	0.00	0.24	0.00	54.3
2	T1	349	9.6	0.327	0.0	LOS A	0.0	0.0	0.00	0.24	0.00	56.5
Approach		591	5.7	0.327	2.3	NA	0.0	0.0	0.00	0.24	0.00	55.5
North: Dundas Rd (N)												
8	T1	222	5.1	0.297	2.1	LOS A	1.8	14.2	0.60	0.40	0.63	52.8
9	R2	226	4.0	0.297	8.2	LOS A	1.8	14.2	0.60	0.40	0.63	53.2
Approach		448	4.5	0.297	5.2	NA	1.8	14.2	0.60	0.40	0.63	53.0
West: Dundas Rd Link (W)												
10	L2	379	4.2	0.335	7.5	LOS A	1.7	12.8	0.49	0.71	0.52	51.8
12	R2	52	0.0	0.041	6.7	LOS A	0.1	0.8	0.39	0.71	0.39	48.5
Approach		430	3.7	0.335	7.4	LOS A	1.7	12.8	0.48	0.71	0.50	51.5
All Vehicles		1470	4.7	0.335	4.7	NA	1.8	14.2	0.32	0.43	0.34	53.3

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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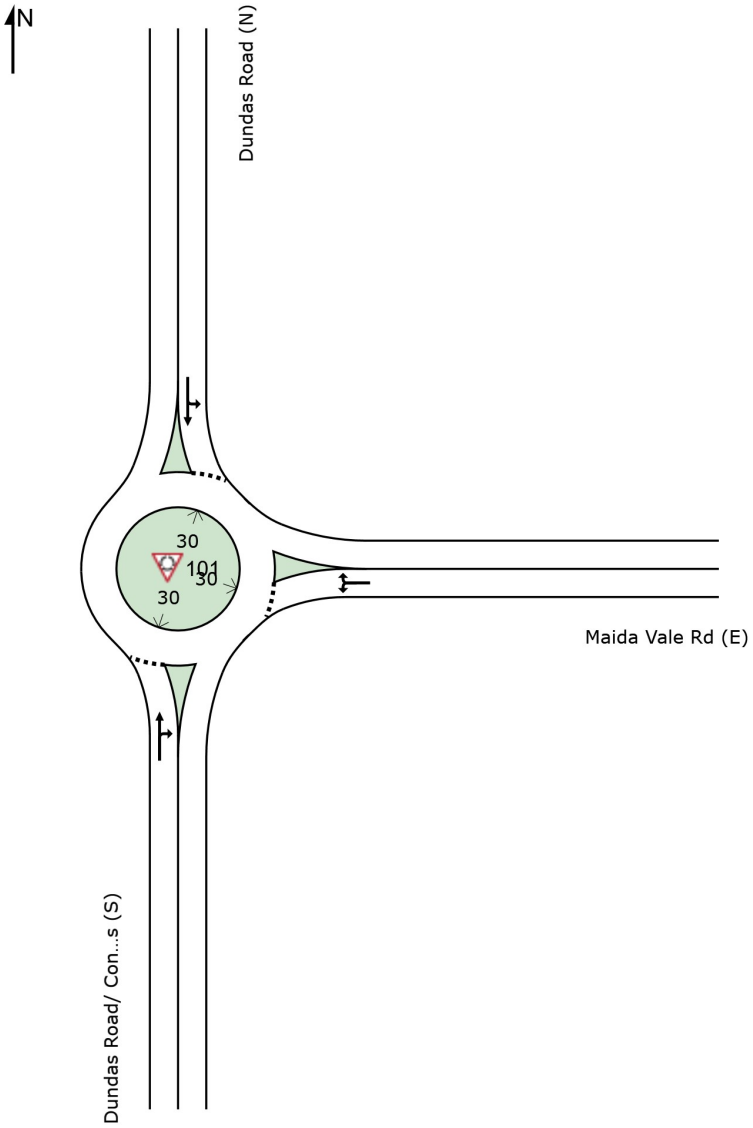
SITE LAYOUT

Site: 101 [Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_AM]

Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_AM
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 101 [Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_AM_noRavenSt]

Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_AM_noRavenSt
Site Category: (None)
Roundabout

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Road/ Construction Site Access (S)												
2	T1	101	0.0	0.156	0.7	LOS A	1.0	7.4	0.33	0.34	0.33	42.3
3	R2	112	0.0	0.156	5.7	LOS A	1.0	7.4	0.33	0.34	0.33	45.4
Approach		213	0.0	0.156	3.3	LOS A	1.0	7.4	0.33	0.34	0.33	44.0
East: Maida Vale Rd (E)												
4	L2	773	0.0	0.772	9.9	LOS A	11.3	84.9	0.90	0.92	1.15	41.4
6	R2	109	15.5	0.772	16.3	LOS B	11.3	84.9	0.90	0.92	1.15	35.1
Approach		882	1.9	0.772	10.7	LOS B	11.3	84.9	0.90	0.92	1.15	40.5
North: Dundas Road (N)												
7	L2	47	21.4	0.303	4.3	LOS A	2.0	14.8	0.32	0.40	0.32	44.4
8	T1	384	0.0	0.303	4.1	LOS A	2.0	14.8	0.32	0.40	0.32	50.9
Approach		431	2.3	0.303	4.1	LOS A	2.0	14.8	0.32	0.40	0.32	50.0
All Vehicles		1527	1.8	0.772	7.8	LOS A	11.3	84.9	0.66	0.69	0.80	43.1

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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MOVEMENT SUMMARY

Site: 101 [Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_PM_noRavenSt]

Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_PM_noRavenSt
Site Category: (None)
Roundabout

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Road/ Construction Site Access (S)												
2	T1	384	0.0	0.641	0.8	LOS A	6.8	49.6	0.39	0.38	0.39	41.4
3	R2	620	0.0	0.641	5.8	LOS A	6.8	49.6	0.39	0.38	0.39	44.5
Approach		1004	0.0	0.641	3.9	LOS A	6.8	49.6	0.39	0.38	0.39	43.4
East: Maida Vale Rd (E)												
4	L2	112	0.0	0.134	3.8	LOS A	0.8	6.3	0.29	0.51	0.29	47.0
6	R2	70	12.9	0.134	9.8	LOS A	0.8	6.3	0.29	0.51	0.29	39.5
Approach		182	4.9	0.134	6.1	LOS A	0.8	6.3	0.29	0.51	0.29	43.9
North: Dundas Road (N)												
7	L2	107	5.3	0.229	6.9	LOS A	1.5	11.2	0.70	0.70	0.70	44.4
8	T1	101	0.0	0.229	6.8	LOS A	1.5	11.2	0.70	0.70	0.70	46.8
Approach		208	2.7	0.229	6.9	LOS A	1.5	11.2	0.70	0.70	0.70	45.4
All Vehicles		1394	1.0	0.641	4.6	LOS A	6.8	49.6	0.42	0.44	0.42	43.7

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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MOVEMENT SUMMARY

Site: 101 [Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_AM]

Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_AM
Site Category: (None)
Roundabout

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Road/ Construction Site Access (S)												
2	T1	101	0.0	0.148	0.7	LOS A	1.0	7.0	0.33	0.33	0.33	42.5
3	R2	101	0.0	0.148	5.7	LOS A	1.0	7.0	0.33	0.33	0.33	45.5
Approach		202	0.0	0.148	3.2	LOS A	1.0	7.0	0.33	0.33	0.33	44.1
East: Maida Vale Rd (E)												
4	L2	762	0.0	0.763	9.7	LOS A	10.9	81.7	0.88	0.91	1.12	41.7
6	R2	110	16.3	0.763	16.1	LOS B	10.9	81.7	0.88	0.91	1.12	35.2
Approach		872	2.1	0.763	10.5	LOS B	10.9	81.7	0.88	0.91	1.12	40.7
North: Dundas Road (N)												
7	L2	45	22.5	0.297	4.2	LOS A	1.9	14.5	0.30	0.40	0.30	44.4
8	T1	384	0.0	0.297	4.0	LOS A	1.9	14.5	0.30	0.40	0.30	51.2
Approach		429	2.4	0.297	4.0	LOS A	1.9	14.5	0.30	0.40	0.30	50.2
All Vehicles		1503	1.9	0.763	7.7	LOS A	10.9	81.7	0.64	0.68	0.78	43.3

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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MOVEMENT SUMMARY

Site: 101 [Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_PM]

Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2021_PM
Site Category: (None)
Roundabout

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Road/ Construction Site Access (S)												
2	T1	384	0.0	0.630	0.7	LOS A	6.6	48.4	0.35	0.37	0.35	41.6
3	R2	620	0.0	0.630	5.7	LOS A	6.6	48.4	0.35	0.37	0.35	44.7
Approach		1004	0.0	0.630	3.8	LOS A	6.6	48.4	0.35	0.37	0.35	43.6
East: Maida Vale Rd (E)												
4	L2	101	0.0	0.119	3.8	LOS A	0.7	5.5	0.29	0.50	0.29	47.2
6	R2	58	15.4	0.119	9.8	LOS A	0.7	5.5	0.29	0.50	0.29	39.4
Approach		160	5.6	0.119	6.0	LOS A	0.7	5.5	0.29	0.50	0.29	44.1
North: Dundas Road (N)												
7	L2	117	3.8	0.236	6.9	LOS A	1.5	11.5	0.70	0.70	0.70	44.7
8	T1	101	0.0	0.236	6.9	LOS A	1.5	11.5	0.70	0.70	0.70	46.8
Approach		218	2.1	0.236	6.9	LOS A	1.5	11.5	0.70	0.70	0.70	45.6
All Vehicles		1382	1.0	0.630	4.5	LOS A	6.6	48.4	0.40	0.43	0.40	43.9

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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MOVEMENT SUMMARY

Site: 101 [Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2031_AM]

Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2031_AM
Site Category: (None)
Roundabout

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Road/ Construction Site Access (S)												
2	T1	101	0.0	0.160	1.0	LOS A	1.0	7.7	0.42	0.37	0.42	41.9
3	R2	101	0.0	0.160	6.0	LOS A	1.0	7.7	0.42	0.37	0.42	45.0
Approach		202	0.0	0.160	3.5	LOS A	1.0	7.7	0.42	0.37	0.42	43.5
East: Maida Vale Rd (E)												
4	L2	762	0.0	0.826	11.8	LOS B	14.2	111.1	0.96	1.01	1.33	39.1
6	R2	157	32.9	0.826	19.0	LOS B	14.2	111.1	0.96	1.01	1.33	32.6
Approach		919	5.6	0.826	13.0	LOS B	14.2	111.1	0.96	1.01	1.33	37.8
North: Dundas Road (N)												
7	L2	133	10.2	0.357	4.1	LOS A	2.5	19.2	0.33	0.41	0.33	46.5
8	T1	384	0.0	0.357	4.0	LOS A	2.5	19.2	0.33	0.41	0.33	51.0
Approach		517	2.6	0.357	4.0	LOS A	2.5	19.2	0.33	0.41	0.33	49.6
All Vehicles		1638	4.0	0.826	9.0	LOS A	14.2	111.1	0.70	0.74	0.90	41.3

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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MOVEMENT SUMMARY

Site: 101 [Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2031_PM]

Dundas Road/ Maida Vale Road/ Proposed Carpark Service Road_2031_PM
Site Category: (None)
Roundabout

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Dundas Road/ Construction Site Access (S)												
2	T1	384	0.0	0.752	2.9	LOS A	9.4	69.4	0.75	0.61	0.79	39.2
3	R2	620	0.0	0.752	7.9	LOS A	9.4	69.4	0.75	0.61	0.79	42.4
Approach		1004	0.0	0.752	6.0	LOS A	9.4	69.4	0.75	0.61	0.79	41.3
East: Maida Vale Rd (E)												
4	L2	101	0.0	0.225	3.9	LOS A	1.5	12.4	0.32	0.55	0.32	41.5
6	R2	200	16.3	0.225	9.9	LOS A	1.5	12.4	0.32	0.55	0.32	32.3
Approach		301	10.8	0.225	7.9	LOS A	1.5	12.4	0.32	0.55	0.32	35.0
North: Dundas Road (N)												
7	L2	166	6.8	0.320	7.1	LOS A	2.3	17.9	0.79	0.75	0.79	43.7
8	T1	101	0.0	0.320	7.0	LOS A	2.3	17.9	0.79	0.75	0.79	42.3
Approach		267	4.2	0.320	7.1	LOS A	2.3	17.9	0.79	0.75	0.79	43.2
All Vehicles		1573	2.8	0.752	6.5	LOS A	9.4	69.4	0.67	0.62	0.70	40.1

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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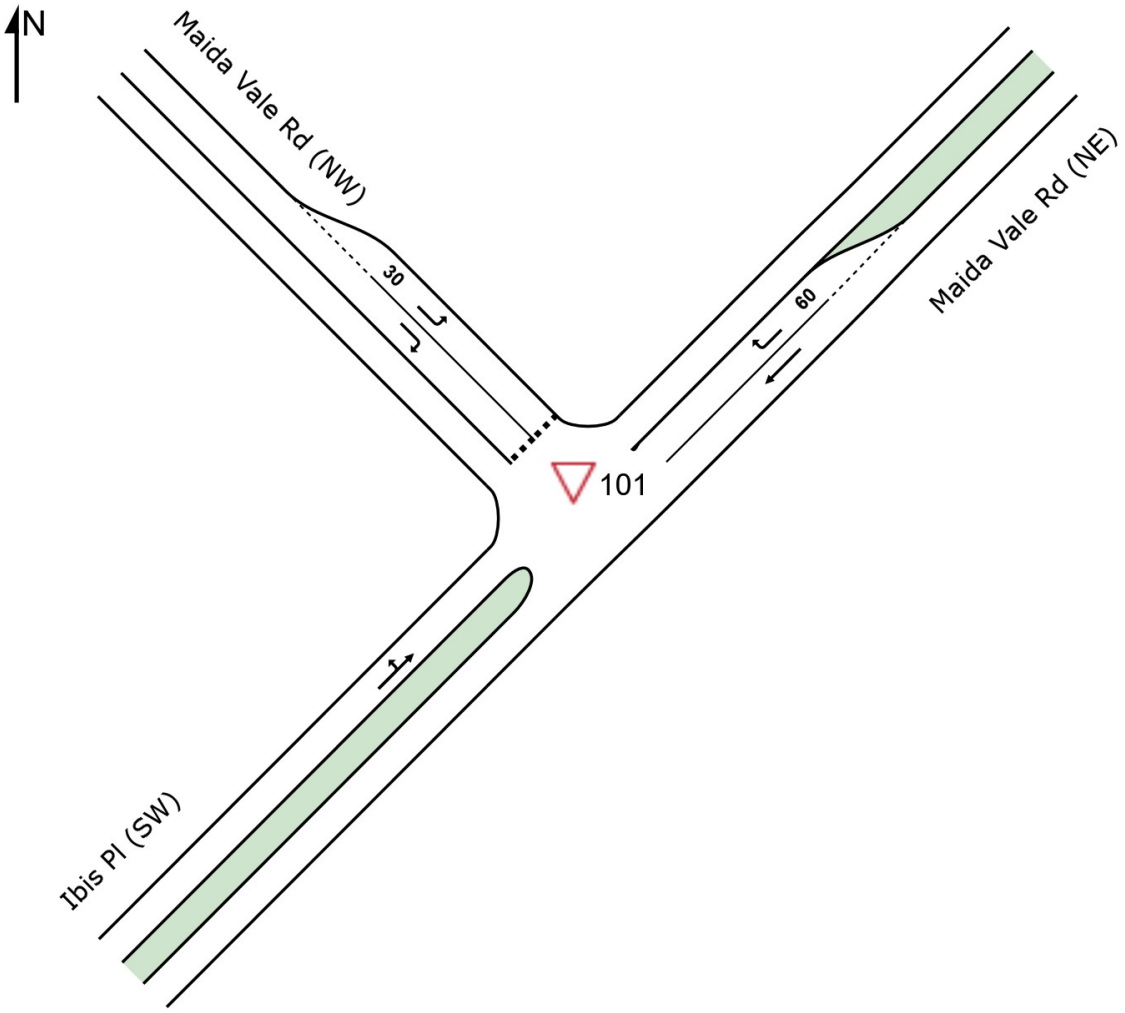
Forrestfield Station Multi-Storey Car Park Page 91 of 128

SITE LAYOUT

Site: 101 [Maida Vale Road/ Ibis Place_2021_AM]

Maida Vale Road/ Ibis Place_2021_AM
Site Category: (None)
Giveway / Yield (Two-Way)



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MOVEMENT SUMMARY

Site: 101 [Maida Vale Road/ Ibis Place_2021_AM_noRavenSt]

Maida Vale Road/ Ibis Place_2021_AM_noRavenSt
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Maida Vale Rd (NE)												
25	T1	113	25.7	0.074	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
26	R2	649	0.3	0.406	8.3	LOS A	3.0	22.1	0.59	0.75	0.67	42.9
Approach		763	4.1	0.406	7.0	NA	3.0	22.1	0.50	0.64	0.57	45.0
NorthWest: Maida Vale Rd (NW)												
27	L2	136	0.0	0.100	6.2	LOS A	0.4	3.0	0.30	0.58	0.30	43.9
29	R2	24	42.9	0.050	12.2	LOS B	0.2	1.7	0.69	0.88	0.69	32.8
Approach		160	6.3	0.100	7.1	LOS A	0.4	3.0	0.36	0.62	0.36	41.9
SouthWest: Ibis Pl (SW)												
30	L2	233	6.3	0.245	6.4	LOS A	0.0	0.0	0.00	0.34	0.00	51.4
31	T1	197	10.9	0.245	0.0	LOS A	0.0	0.0	0.00	0.34	0.00	57.4
Approach		429	8.4	0.245	3.5	NA	0.0	0.0	0.00	0.34	0.00	53.7
All Vehicles		1352	5.7	0.406	5.9	NA	3.0	22.1	0.33	0.54	0.36	46.9

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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MOVEMENT SUMMARY

▽ Site: 101 [Maida Vale Road/ Ibis Place_2021_PM_noRavenSt]

Maida Vale Road/ Ibis Place_2021_PM_noRavenSt
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Maida Vale Rd (NE)												
25	T1	93	25.3	0.060	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
26	R2	142	0.0	0.090	7.6	LOS A	0.5	3.3	0.50	0.66	0.50	43.4
Approach		235	10.0	0.090	4.6	NA	0.5	3.3	0.30	0.40	0.30	50.1
NorthWest: Maida Vale Rd (NW)												
27	L2	521	0.0	0.475	8.6	LOS A	3.3	24.1	0.57	0.84	0.76	41.6
29	R2	216	2.1	0.205	7.6	LOS A	0.8	5.8	0.51	0.77	0.51	41.5
Approach		737	0.6	0.475	8.3	LOS A	3.3	24.1	0.56	0.82	0.69	41.6
SouthWest: Ibis Pl (SW)												
30	L2	40	22.2	0.246	6.6	LOS A	0.0	0.0	0.00	0.06	0.00	52.4
31	T1	411	3.8	0.246	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	68.0
Approach		452	5.5	0.246	0.6	NA	0.0	0.0	0.00	0.06	0.00	65.8
All Vehicles		1424	3.7	0.475	5.2	NA	3.3	24.1	0.34	0.51	0.41	47.9

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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MOVEMENT SUMMARY

Site: 101 [Maida Vale Road/ Ibis Place_2021_AM]

Maida Vale Road/ Ibis Place_2021_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Maida Vale Rd (NE)												
25	T1	74	39.4	0.054	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
26	R2	656	0.3	0.408	8.3	LOS A	3.0	22.3	0.59	0.75	0.67	42.9
Approach		730	4.3	0.408	7.4	NA	3.0	22.3	0.53	0.67	0.60	44.3
NorthWest: Maida Vale Rd (NW)												
27	L2	149	0.0	0.111	6.3	LOS A	0.5	3.4	0.31	0.58	0.31	43.9
29	R2	19	52.9	0.043	12.7	LOS B	0.1	1.6	0.70	0.88	0.70	31.7
Approach		169	6.0	0.111	7.0	LOS A	0.5	3.4	0.36	0.62	0.36	42.0
SouthWest: Ibis Pl (SW)												
30	L2	216	7.3	0.243	6.4	LOS A	0.0	0.0	0.00	0.32	0.00	51.5
31	T1	208	10.3	0.243	0.0	LOS A	0.0	0.0	0.00	0.32	0.00	58.1
Approach		424	8.8	0.243	3.3	NA	0.0	0.0	0.00	0.32	0.00	54.2
All Vehicles		1322	5.9	0.408	6.0	NA	3.0	22.3	0.34	0.55	0.38	46.6

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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MOVEMENT SUMMARY

Site: 101 [Maida Vale Road/ Ibis Place_2021_PM]

Maida Vale Road/ Ibis Place_2021_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Maida Vale Rd (NE)												
25	T1	42	51.4	0.033	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
26	R2	129	0.9	0.082	7.6	LOS A	0.4	3.1	0.50	0.65	0.50	43.2
Approach		171	13.2	0.082	5.7	NA	0.4	3.1	0.38	0.49	0.38	47.0
NorthWest: Maida Vale Rd (NW)												
27	L2	517	0.0	0.472	8.6	LOS A	3.2	23.8	0.57	0.84	0.76	41.6
29	R2	220	2.0	0.198	7.3	LOS A	0.7	5.6	0.49	0.75	0.49	41.8
Approach		737	0.6	0.472	8.2	LOS A	3.2	23.8	0.55	0.81	0.68	41.7
SouthWest: Ibis Pl (SW)												
30	L2	30	25.9	0.243	6.6	LOS A	0.0	0.0	0.00	0.04	0.00	51.5
31	T1	409	6.0	0.243	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	68.4
Approach		439	7.4	0.243	0.5	NA	0.0	0.0	0.00	0.04	0.00	66.6
All Vehicles		1347	4.4	0.472	5.4	NA	3.2	23.8	0.35	0.52	0.42	47.5

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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MOVEMENT SUMMARY

Site: 101 [Maida Vale Road/ Ibis Place_2031_AM]

Maida Vale Road/ Ibis Place_2031_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Maida Vale Rd (NE)												
25	T1	106	16.0	0.063	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
26	R2	675	4.8	0.455	9.0	LOS A	3.8	29.4	0.63	0.82	0.81	41.3
Approach		781	6.3	0.455	7.8	NA	3.8	29.4	0.55	0.71	0.70	43.3
NorthWest: Maida Vale Rd (NW)												
27	L2	147	6.1	0.115	6.5	LOS A	0.5	3.7	0.33	0.59	0.33	42.9
29	R2	81	5.6	0.129	10.2	LOS B	0.4	3.4	0.67	0.87	0.67	38.1
Approach		228	5.9	0.129	7.8	LOS A	0.5	3.7	0.45	0.69	0.45	41.1
SouthWest: Ibis Pl (SW)												
30	L2	243	7.4	0.267	6.4	LOS A	0.0	0.0	0.00	0.32	0.00	51.4
31	T1	224	10.1	0.267	0.0	LOS A	0.0	0.0	0.00	0.32	0.00	57.9
Approach		466	8.7	0.267	3.4	NA	0.0	0.0	0.00	0.32	0.00	54.0
All Vehicles		1475	7.0	0.455	6.4	NA	3.8	29.4	0.36	0.58	0.44	45.6

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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MOVEMENT SUMMARY

Site: 101 [Maida Vale Road/ Ibis Place_2031_PM]

Maida Vale Road/ Ibis Place_2031_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Maida Vale Rd (NE)												
25	T1	35	41.9	0.025	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
26	R2	226	12.9	0.168	8.3	LOS A	0.9	7.3	0.57	0.72	0.57	40.3
Approach		261	16.8	0.168	7.2	NA	0.9	7.3	0.49	0.62	0.49	42.3
NorthWest: Maida Vale Rd (NW)												
27	L2	474	0.2	0.443	8.5	LOS A	2.8	20.9	0.57	0.84	0.74	41.6
29	R2	204	1.1	0.206	7.9	LOS A	0.8	5.7	0.53	0.80	0.53	41.3
Approach		679	0.5	0.443	8.3	LOS A	2.8	20.9	0.56	0.83	0.68	41.5
SouthWest: Ibis Pl (SW)												
30	L2	76	5.9	0.271	6.4	LOS A	0.0	0.0	0.00	0.09	0.00	57.0
31	T1	435	2.1	0.271	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	66.2
Approach		511	2.6	0.271	1.0	NA	0.0	0.0	0.00	0.09	0.00	64.3
All Vehicles		1451	4.2	0.443	5.5	NA	2.8	20.9	0.35	0.53	0.40	46.9

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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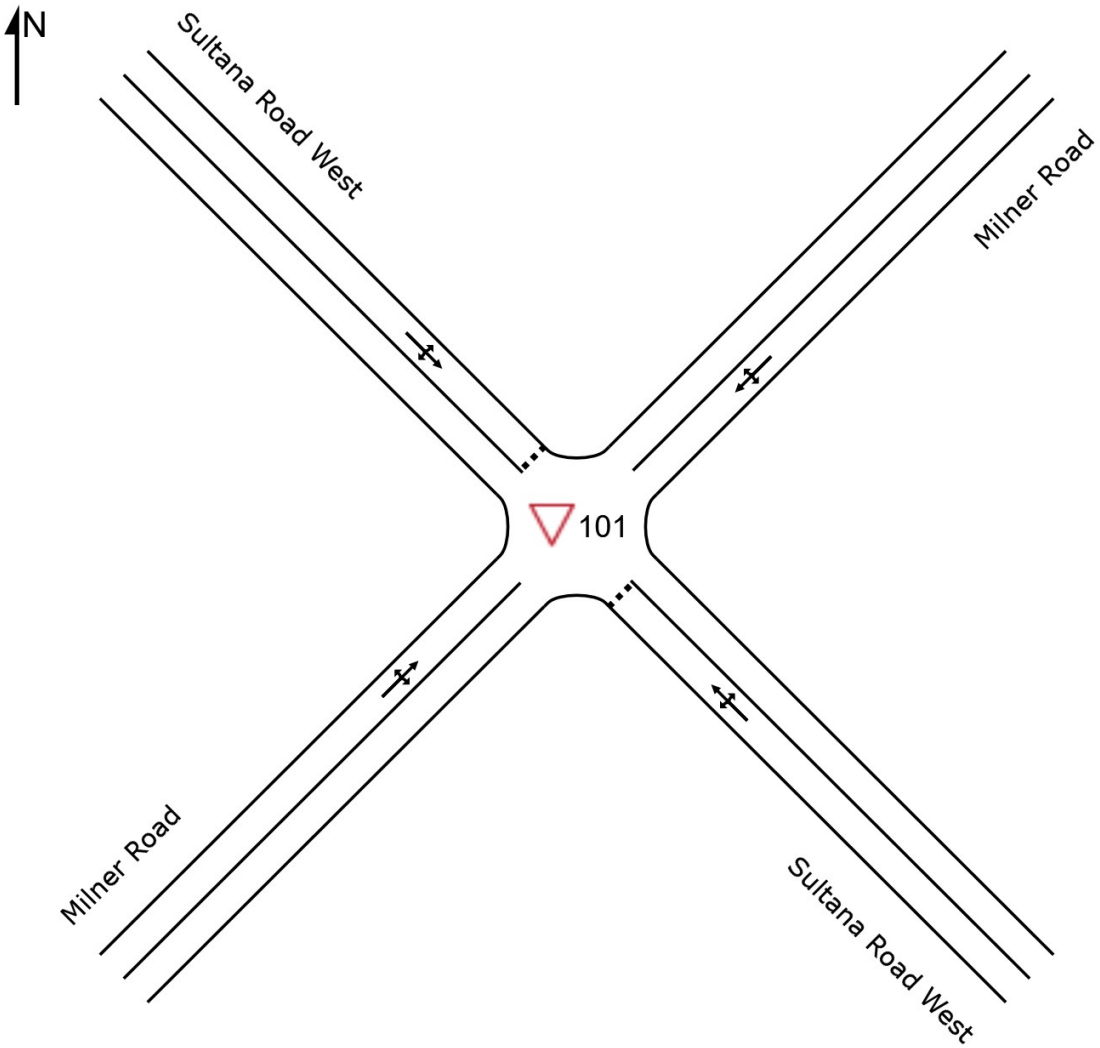
SITE LAYOUT

▽ Site: 101 [Milner Road/ Sultana Road West_2018_AM]

Milner Road/ Sultana Road West_2018_AM
Site Category: (None)
Giveway / Yield (Two-Way)



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MOVEMENT SUMMARY

Site: 101 [Milner Road/ Sultana Road West_2018_AM]

Milner Road/ Sultana Road West_2018_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Sultana Road West												
21	L2	44	0.0	0.060	6.6	LOS A	0.2	1.5	0.34	0.61	0.34	55.3
22	T1	1	0.0	0.060	4.9	LOS A	0.2	1.5	0.34	0.61	0.34	52.8
23	R2	30	0.0	0.060	6.2	LOS A	0.2	1.5	0.34	0.61	0.34	54.9
Approach		75	0.0	0.060	6.4	LOS A	0.2	1.5	0.34	0.61	0.34	55.1
NorthEast: Milner Road												
24	L2	4	0.0	0.184	6.5	LOS A	0.0	0.5	0.01	0.03	0.01	62.3
25	T1	267	30.7	0.184	0.0	LOS A	0.0	0.5	0.01	0.03	0.01	69.5
26	R2	7	0.0	0.184	6.3	LOS A	0.0	0.5	0.01	0.03	0.01	61.6
Approach		279	29.4	0.184	0.3	NA	0.0	0.5	0.01	0.03	0.01	69.1
NorthWest: Sultana Road West												
27	L2	13	0.0	0.018	5.7	LOS A	0.1	0.4	0.12	0.57	0.12	56.1
28	T1	1	0.0	0.018	4.9	LOS A	0.1	0.4	0.12	0.57	0.12	53.5
29	R2	11	0.0	0.018	6.2	LOS A	0.1	0.4	0.12	0.57	0.12	55.6
Approach		26	0.0	0.018	5.9	LOS A	0.1	0.4	0.12	0.57	0.12	55.8
SouthWest: Milner Road												
30	L2	9	0.0	0.048	7.0	LOS A	0.1	1.1	0.23	0.20	0.23	59.6
31	T1	60	1.9	0.048	0.3	LOS A	0.1	1.1	0.23	0.20	0.23	66.1
32	R2	21	0.0	0.048	6.9	LOS A	0.1	1.1	0.23	0.20	0.23	58.9
Approach		90	1.3	0.048	2.5	NA	0.1	1.1	0.23	0.20	0.23	63.5
All Vehicles		470	17.7	0.184	2.0	NA	0.2	1.5	0.11	0.18	0.11	64.5

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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MOVEMENT SUMMARY

▽ Site: 101 [Milner Road/ Sultana Road West_2018_PM]

Milner Road/ Sultana Road West_2018_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Sultana Road West												
21	L2	40	0.0	0.060	6.0	LOS A	0.2	1.5	0.25	0.59	0.25	55.6
22	T1	1	0.0	0.060	5.0	LOS A	0.2	1.5	0.25	0.59	0.25	53.1
23	R2	38	0.0	0.060	6.3	LOS A	0.2	1.5	0.25	0.59	0.25	55.2
Approach		80	0.0	0.060	6.2	LOS A	0.2	1.5	0.25	0.59	0.25	55.4
NorthEast: Milner Road												
24	L2	19	0.0	0.108	6.6	LOS A	0.1	0.7	0.05	0.10	0.05	61.2
25	T1	151	20.9	0.108	0.0	LOS A	0.1	0.7	0.05	0.10	0.05	68.1
26	R2	10	0.0	0.108	6.7	LOS A	0.1	0.7	0.05	0.10	0.05	60.5
Approach		180	17.5	0.108	1.1	NA	0.1	0.7	0.05	0.10	0.05	66.8
NorthWest: Sultana Road West												
27	L2	11	0.0	0.022	6.1	LOS A	0.1	0.5	0.27	0.59	0.27	55.6
28	T1	2	0.0	0.022	5.0	LOS A	0.1	0.5	0.27	0.59	0.27	53.1
29	R2	15	0.0	0.022	6.3	LOS A	0.1	0.5	0.27	0.59	0.27	55.2
Approach		28	0.0	0.022	6.1	LOS A	0.1	0.5	0.27	0.59	0.27	55.2
SouthWest: Milner Road												
30	L2	22	0.0	0.142	6.8	LOS A	0.4	3.0	0.16	0.18	0.16	60.1
31	T1	192	2.9	0.142	0.2	LOS A	0.4	3.0	0.16	0.18	0.16	66.7
32	R2	58	0.0	0.142	6.6	LOS A	0.4	3.0	0.16	0.18	0.16	59.4
Approach		273	2.1	0.142	2.1	NA	0.4	3.0	0.16	0.18	0.16	64.4
All Vehicles		561	6.6	0.142	2.5	NA	0.4	3.0	0.15	0.23	0.15	63.1

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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Forrestfield Station Multi-Storey Car Park Page 101 of 128

MOVEMENT SUMMARY

▽ Site: 101 [Milner Road/ Sultana Road West_2021_AM_noRavenSt]

Milner Road/ Sultana Road West_2021_AM_noRavenSt
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Sultana Road West												
21	L2	8	0.0	0.299	6.6	LOS A	1.1	7.7	0.44	0.75	0.49	56.0
22	T1	310	0.0	0.299	6.0	LOS A	1.1	7.7	0.44	0.75	0.49	53.4
23	R2	7	0.0	0.299	7.4	LOS A	1.1	7.7	0.44	0.75	0.49	55.5
Approach		325	0.0	0.299	6.0	LOS A	1.1	7.7	0.44	0.75	0.49	53.5
NorthEast: Milner Road												
24	L2	115	0.0	0.269	6.7	LOS A	1.3	9.4	0.24	0.31	0.24	58.3
25	T1	231	3.4	0.269	0.3	LOS A	1.3	9.4	0.24	0.31	0.24	64.4
26	R2	176	0.6	0.269	6.6	LOS A	1.3	9.4	0.24	0.31	0.24	57.6
Approach		522	1.7	0.269	3.8	NA	1.3	9.4	0.24	0.31	0.24	60.6
NorthWest: Sultana Road West												
27	L2	10	0.0	0.313	5.9	LOS A	1.1	8.9	0.40	0.76	0.47	54.9
28	T1	118	0.0	0.313	6.1	LOS A	1.1	8.9	0.40	0.76	0.47	52.4
29	R2	174	8.4	0.313	8.4	LOS A	1.1	8.9	0.40	0.76	0.47	52.0
Approach		302	4.8	0.313	7.4	LOS A	1.1	8.9	0.40	0.76	0.47	52.2
SouthWest: Milner Road												
30	L2	93	9.6	0.093	6.7	LOS A	0.2	1.4	0.16	0.38	0.16	56.9
31	T1	49	6.8	0.093	0.3	LOS A	0.2	1.4	0.16	0.38	0.16	63.9
32	R2	20	0.0	0.093	7.1	LOS A	0.2	1.4	0.16	0.38	0.16	57.2
Approach		163	7.6	0.093	4.8	NA	0.2	1.4	0.16	0.38	0.16	58.9
All Vehicles		1312	2.7	0.313	5.3	NA	1.3	9.4	0.32	0.53	0.34	56.5

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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MOVEMENT SUMMARY

▽ Site: 101 [Milner Road/ Sultana Road West_2021_PM_noRavenSt]

Milner Road/ Sultana Road West_2021_PM_noRavenSt
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Sultana Road West												
21	L2	47	0.0	0.178	6.2	LOS A	0.6	4.2	0.37	0.68	0.37	55.6
22	T1	118	0.0	0.178	6.3	LOS A	0.6	4.2	0.37	0.68	0.37	53.1
23	R2	16	0.0	0.178	8.2	LOS A	0.6	4.2	0.37	0.68	0.37	55.2
Approach		181	0.0	0.178	6.4	LOS A	0.6	4.2	0.37	0.68	0.37	53.9
NorthEast: Milner Road												
24	L2	122	0.0	0.271	7.3	LOS A	1.4	10.5	0.42	0.32	0.42	57.4
25	T1	199	1.7	0.271	0.8	LOS A	1.4	10.5	0.42	0.32	0.42	63.4
26	R2	175	0.0	0.271	7.4	LOS A	1.4	10.5	0.42	0.32	0.42	56.8
Approach		497	0.7	0.271	4.7	NA	1.4	10.5	0.42	0.32	0.42	59.4
NorthWest: Sultana Road West												
27	L2	16	0.0	0.513	7.3	LOS A	2.5	18.7	0.58	0.90	0.87	54.2
28	T1	309	0.0	0.513	7.7	LOS A	2.5	18.7	0.58	0.90	0.87	51.7
29	R2	158	4.3	0.513	9.3	LOS A	2.5	18.7	0.58	0.90	0.87	52.5
Approach		483	1.4	0.513	8.2	LOS A	2.5	18.7	0.58	0.90	0.87	52.1
SouthWest: Milner Road												
30	L2	148	0.8	0.210	6.6	LOS A	0.3	2.5	0.12	0.26	0.12	59.2
31	T1	211	3.2	0.210	0.2	LOS A	0.3	2.5	0.12	0.26	0.12	65.6
32	R2	33	0.0	0.210	7.1	LOS A	0.3	2.5	0.12	0.26	0.12	58.6
Approach		392	2.0	0.210	3.2	NA	0.3	2.5	0.12	0.26	0.12	62.4
All Vehicles		1553	1.2	0.513	5.6	NA	2.5	18.7	0.39	0.53	0.48	56.9

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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MOVEMENT SUMMARY

▽ Site: 101 [Milner Road/ Sultana Road West_2021_AM]

Milner Road/ Sultana Road West_2021_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Sultana Road West												
21	L2	8	0.0	0.327	7.2	LOS A	1.2	8.8	0.49	0.79	0.59	55.5
22	T1	309	0.0	0.327	6.5	LOS A	1.2	8.8	0.49	0.79	0.59	52.9
23	R2	7	0.0	0.327	8.0	LOS A	1.2	8.8	0.49	0.79	0.59	55.1
Approach		324	0.0	0.327	6.6	LOS A	1.2	8.8	0.49	0.79	0.59	53.0
NorthEast: Milner Road												
24	L2	124	0.0	0.333	6.7	LOS A	1.5	11.1	0.22	0.27	0.22	58.8
25	T1	337	2.3	0.333	0.2	LOS A	1.5	11.1	0.22	0.27	0.22	65.1
26	R2	189	0.6	0.333	6.6	LOS A	1.5	11.1	0.22	0.27	0.22	58.1
Approach		649	1.4	0.333	3.3	NA	1.5	11.1	0.22	0.27	0.22	61.7
NorthWest: Sultana Road West												
27	L2	1	0.0	0.291	5.9	LOS A	1.0	7.8	0.53	0.82	0.61	54.5
28	T1	117	0.0	0.291	6.5	LOS A	1.0	7.8	0.53	0.82	0.61	52.1
29	R2	131	11.1	0.291	9.1	LOS A	1.0	7.8	0.53	0.82	0.61	50.9
Approach		249	5.9	0.291	7.9	LOS A	1.0	7.8	0.53	0.82	0.61	51.5
SouthWest: Milner Road												
30	L2	78	0.0	0.086	6.7	LOS A	0.2	1.5	0.20	0.34	0.20	57.9
31	T1	56	8.0	0.086	0.5	LOS A	0.2	1.5	0.20	0.34	0.20	63.9
32	R2	20	0.0	0.086	7.5	LOS A	0.2	1.5	0.20	0.34	0.20	57.2
Approach		154	2.9	0.086	4.5	NA	0.2	1.5	0.20	0.34	0.20	59.8
All Vehicles		1376	2.0	0.333	5.0	NA	1.5	11.1	0.34	0.50	0.38	57.2

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 (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 101 [Milner Road/ Sultana Road West_2021_PM]

Milner Road/ Sultana Road West_2021_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Sultana Road West												
21	L2	48	0.0	0.183	6.3	LOS A	0.6	4.3	0.39	0.69	0.39	55.5
22	T1	117	0.0	0.183	6.4	LOS A	0.6	4.3	0.39	0.69	0.39	53.0
23	R2	16	0.0	0.183	8.5	LOS A	0.6	4.3	0.39	0.69	0.39	55.1
Approach		181	0.0	0.183	6.6	LOS A	0.6	4.3	0.39	0.69	0.39	53.8
NorthEast: Milner Road												
24	L2	122	0.0	0.289	7.3	LOS A	1.5	11.2	0.41	0.31	0.41	57.6
25	T1	227	1.5	0.289	0.8	LOS A	1.5	11.2	0.41	0.31	0.41	63.6
26	R2	184	0.0	0.289	7.3	LOS A	1.5	11.2	0.41	0.31	0.41	57.0
Approach		534	0.6	0.289	4.5	NA	1.5	11.2	0.41	0.31	0.41	59.7
NorthWest: Sultana Road West												
27	L2	1	0.0	0.469	7.3	LOS A	2.1	15.4	0.60	0.91	0.87	54.3
28	T1	309	0.0	0.469	7.7	LOS A	2.1	15.4	0.60	0.91	0.87	51.8
29	R2	110	3.1	0.469	9.2	LOS A	2.1	15.4	0.60	0.91	0.87	52.9
Approach		420	0.8	0.469	8.1	LOS A	2.1	15.4	0.60	0.91	0.87	52.1
SouthWest: Milner Road												
30	L2	96	0.0	0.203	6.7	LOS A	0.3	2.6	0.13	0.20	0.13	59.9
31	T1	249	3.2	0.203	0.2	LOS A	0.3	2.6	0.13	0.20	0.13	66.5
32	R2	34	0.0	0.203	7.2	LOS A	0.3	2.6	0.13	0.20	0.13	59.3
Approach		379	2.1	0.203	2.4	NA	0.3	2.6	0.13	0.20	0.13	64.0
All Vehicles		1513	1.0	0.469	5.2	NA	2.1	15.4	0.39	0.49	0.47	57.6

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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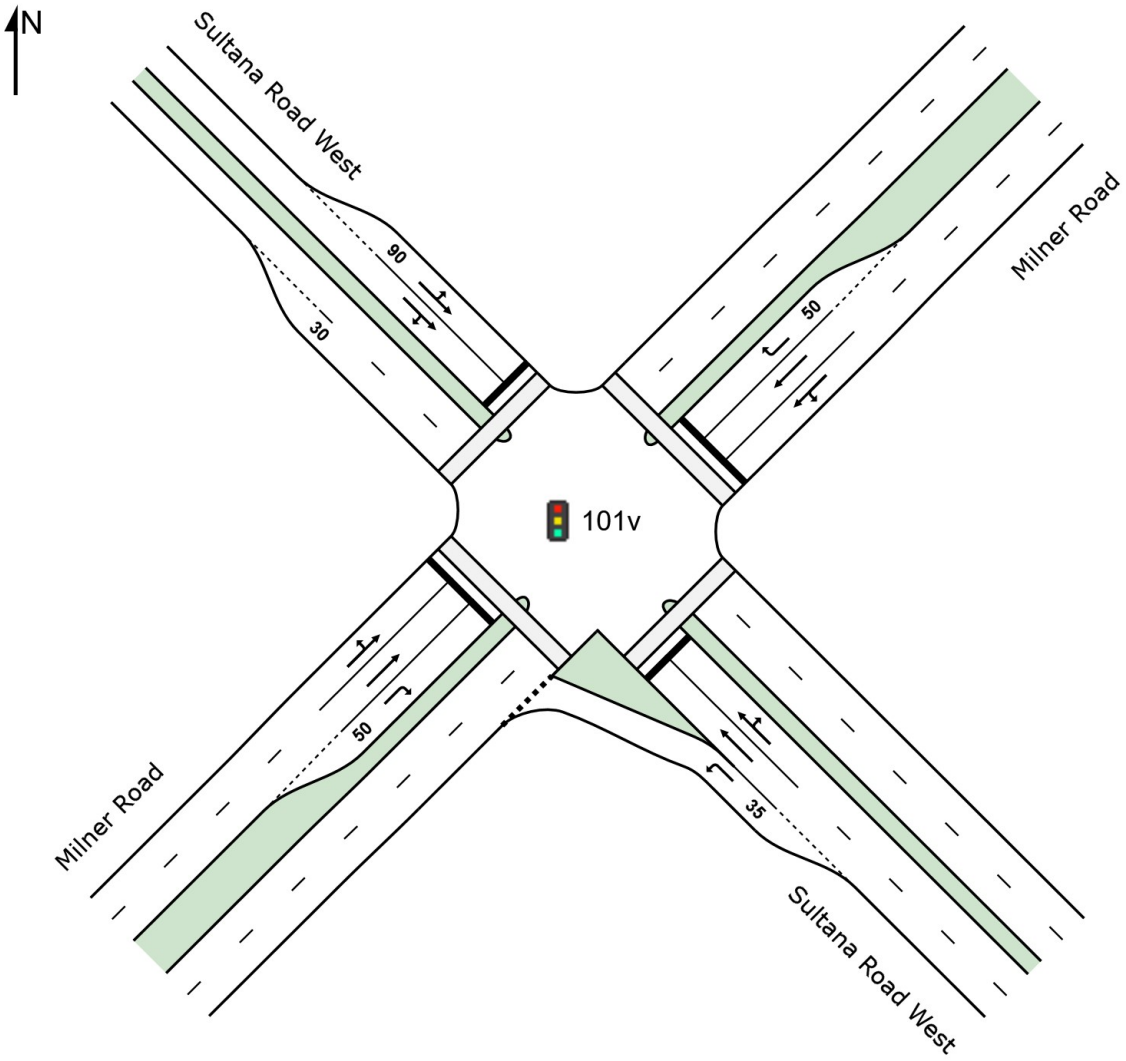
SITE LAYOUT

Site: 101v [Milner Road/ Sultana Road West_2031_AM]

Milner Road/ Sultana Road West_2031_AM
Site Category: (None)
Signals - Fixed Time Isolated



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MOVEMENT SUMMARY

Site: 101v [Milner Road/ Sultana Road West_2031_AM]

Milner Road/ Sultana Road West_2031_AM
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 85 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Sultana Road West												
21	L2	276	4.9	0.276	10.7	LOS B	4.2	32.8	0.47	0.69	0.47	51.6
22	T1	371	4.5	0.856	41.6	LOS D	13.9	107.5	0.98	0.93	1.19	35.7
23	R2	8	0.0	0.856	49.6	LOS D	13.9	107.5	1.00	1.00	1.27	35.5
Approach		655	4.6	0.856	28.6	LOS C	13.9	107.5	0.76	0.83	0.89	41.0
NorthEast: Milner Road												
24	L2	117	0.0	0.821	37.2	LOS D	23.2	184.5	0.97	0.95	1.09	40.5
25	T1	861	9.1	0.821	30.4	LOS C	23.2	184.5	0.92	0.90	1.07	43.9
26	R2	376	1.5	0.901	50.0	LOS D	17.7	132.2	0.95	0.97	1.30	33.7
Approach		1354	6.2	0.901	36.4	LOS D	23.2	184.5	0.93	0.93	1.13	40.3
NorthWest: Sultana Road West												
27	L2	1	0.0	0.798	53.7	LOS D	5.1	37.2	1.00	0.90	1.31	34.1
28	T1	115	0.0	0.798	48.2	LOS D	5.1	37.2	1.00	0.90	1.31	33.5
29	R2	97	2.3	0.798	54.1	LOS D	4.8	35.8	1.00	0.90	1.32	32.2
Approach		212	1.1	0.798	50.9	LOS D	5.1	37.2	1.00	0.90	1.32	32.9
SouthWest: Milner Road												
30	L2	208	1.1	0.900	56.2	LOS E	13.2	101.3	1.00	1.02	1.39	32.3
31	T1	318	12.4	0.900	50.0	LOS D	13.2	101.3	1.00	1.03	1.40	35.5
32	R2	124	4.5	0.848	56.3	LOS E	5.9	45.3	1.00	0.93	1.39	32.0
Approach		649	7.3	0.900	53.2	LOS D	13.2	106.5	1.00	1.00	1.39	33.7
All Vehicles		2871	5.7	0.901	39.5	LOS D	23.2	184.5	0.91	0.92	1.15	38.1

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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PHASING SUMMARY

Site: 101v [Milner Road/ Sultana Road West_2031_AM]

Milner Road/ Sultana Road West_2031_AM
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 85 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

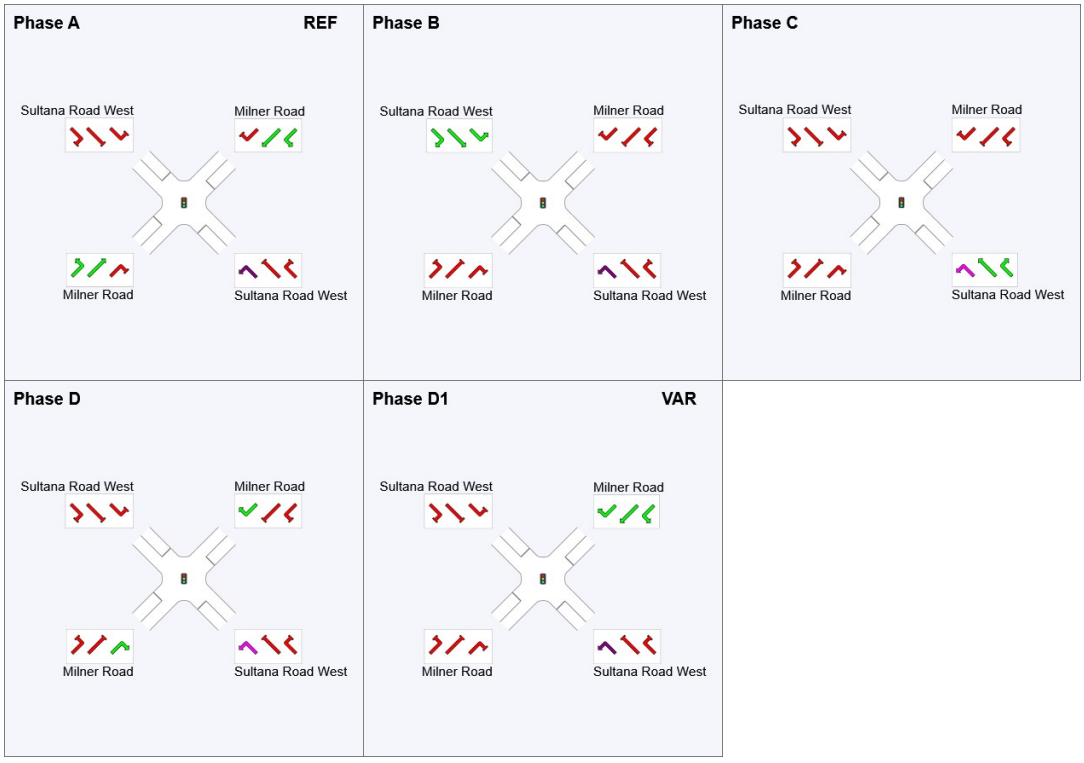
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Opposed Turns - Copy
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D, D1*, D2*
Output Phase Sequence: A, B, C, D, D1*
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C	D	D1
Phase Change Time (sec)	0	20	32	54	67
Green Time (sec)	14	6	16	7	12
Phase Time (sec)	20	12	22	13	18
Phase Split	24%	14%	26%	15%	21%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

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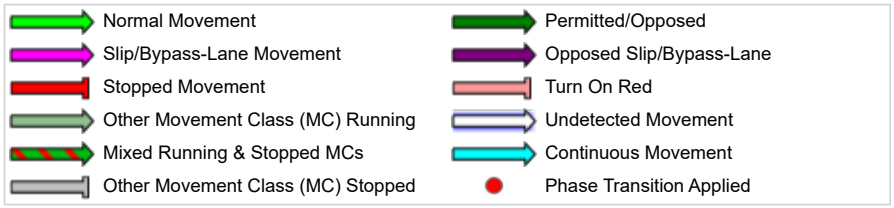
VAR: Variable Phase



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MOVEMENT SUMMARY

Site: 101v [Milner Road/ Sultana Road West_2031_PM]

Milner Road/ Sultana Road West_2031_PM
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Sultana Road West												
21	L2	237	2.4	0.249	12.2	LOS B	4.1	30.8	0.50	0.70	0.50	51.1
22	T1	118	1.9	0.784	49.6	LOS D	4.8	36.3	1.00	0.84	1.22	33.0
23	R2	8	0.0	0.784	56.3	LOS E	4.8	36.3	1.00	0.88	1.29	33.3
Approach		363	2.2	0.784	25.3	LOS C	4.8	36.3	0.67	0.75	0.75	43.0
NorthEast: Milner Road												
24	L2	126	0.0	0.900	53.3	LOS D	22.7	173.4	1.00	1.04	1.29	34.2
25	T1	688	4.9	0.900	47.0	LOS D	22.7	173.4	1.00	1.04	1.30	36.6
26	R2	182	0.6	0.444	39.6	LOS D	7.0	52.1	0.91	0.80	0.91	37.4
Approach		996	3.5	0.900	46.5	LOS D	22.7	173.4	0.98	1.00	1.23	36.4
NorthWest: Sultana Road West												
27	L2	147	0.0	0.899	56.0	LOS E	16.7	122.4	1.00	1.04	1.34	32.6
28	T1	322	0.0	0.899	50.5	LOS D	16.7	122.4	1.00	1.04	1.34	32.1
29	R2	176	0.0	0.899	56.0	LOS E	16.6	122.0	1.00	1.04	1.34	32.5
Approach		646	0.0	0.899	53.2	LOS D	16.7	122.4	1.00	1.04	1.34	32.3
SouthWest: Milner Road												
30	L2	76	1.5	0.580	36.1	LOS D	10.3	79.3	0.92	0.81	1.08	40.7
31	T1	482	4.9	0.580	31.1	LOS C	10.8	83.4	0.93	0.79	0.99	43.5
32	R2	318	2.5	0.892	54.7	LOS D	16.0	120.8	1.00	0.97	1.33	32.5
Approach		876	3.7	0.892	40.1	LOS D	16.0	120.8	0.95	0.86	1.12	38.5
All Vehicles		2881	2.6	0.900	43.4	LOS D	22.7	173.4	0.94	0.93	1.16	36.7

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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PHASING SUMMARY

Site: 101v [Milner Road/ Sultana Road West_2031_PM]

Milner Road/ Sultana Road West_2031_PM
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

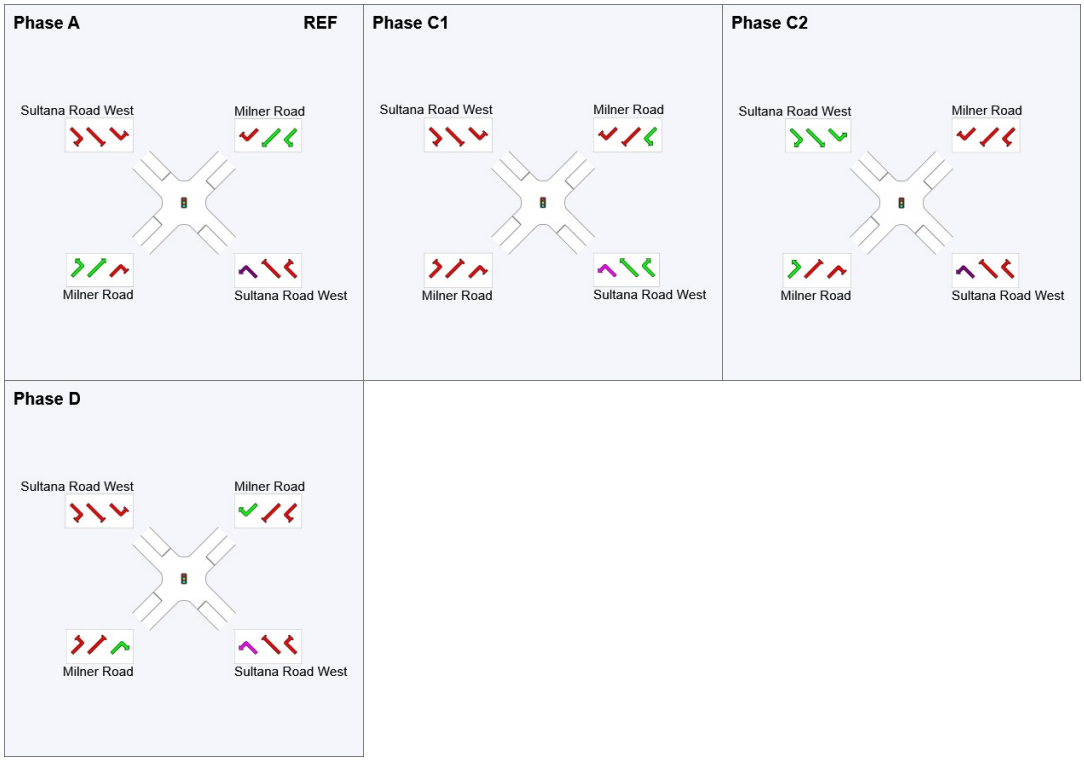
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Opposed Turns - Copy - Copy
Reference Phase: Phase A
Input Phase Sequence: A, C1, C2, D, D1*, D2*
Output Phase Sequence: A, C1, C2, D
(* Variable Phase)

Phase Timing Summary

Phase	A	C1	C2	D
Phase Change Time (sec)	0	29	41	64
Green Time (sec)	23	6	17	20
Phase Time (sec)	29	12	23	26
Phase Split	32%	13%	26%	29%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

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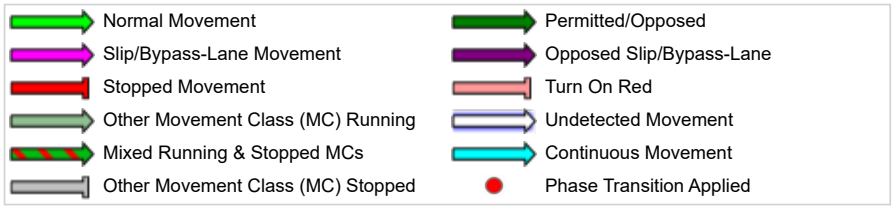
VAR: Variable Phase



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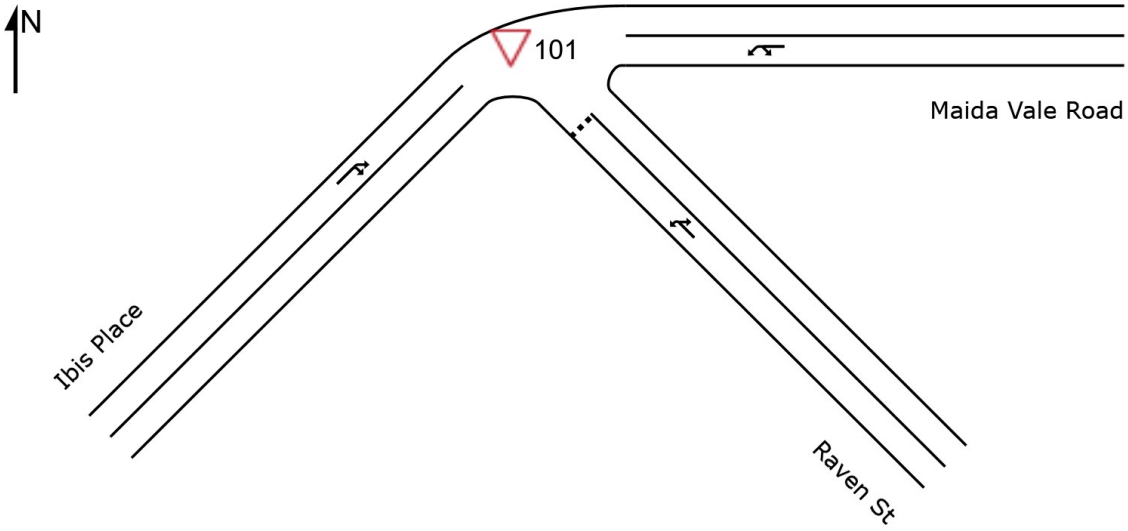
SITE LAYOUT

Site: 101 [Ibis Place/ Raven Street/ Maida Vale Road_2021_AM]

Ibis Place/ Raven Street/ Maida Vale Road_2021_AM
Site Category: (None)
Giveway / Yield (Two-Way)



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MOVEMENT SUMMARY

Site: 101 [Ibis Place/ Raven Street/ Maida Vale Road_2021_AM]

Ibis Place/ Raven Street/ Maida Vale Road_2021_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Raven St												
21	L2	70	1.6	0.076	7.7	LOS A	0.3	2.2	0.52	0.73	0.52	48.7
23b	R3	17	0.0	0.076	7.5	LOS A	0.3	2.2	0.52	0.73	0.52	54.1
Approach		87	1.3	0.076	7.7	LOS A	0.3	2.2	0.52	0.73	0.52	50.0
East: Maida Vale Road												
4b	L3	48	0.0	0.379	7.4	LOS A	0.0	0.0	0.00	0.60	0.00	60.7
4a	L1	635	5.0	0.379	5.6	LOS A	0.0	0.0	0.00	0.60	0.00	55.4
Approach		683	4.6	0.379	5.8	NA	0.0	0.0	0.00	0.60	0.00	55.9
SouthWest: Ibis Place												
32a	R1	304	8.9	0.206	6.0	LOS A	0.4	3.3	0.19	0.48	0.19	52.4
32	R2	37	3.0	0.206	9.2	LOS A	0.4	3.3	0.19	0.48	0.19	50.4
Approach		342	8.2	0.206	6.3	NA	0.4	3.3	0.19	0.48	0.19	52.2
All Vehicles		1111	5.5	0.379	6.1	NA	0.4	3.3	0.10	0.58	0.10	54.2

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 (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 101 [Ibis Place/ Raven Street/ Maida Vale Road_2021_PM]

Ibis Place/ Raven Street/ Maida Vale Road_2021_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Raven St												
21	L2	4	0.0	0.053	5.9	LOS A	0.1	1.0	0.40	0.77	0.40	48.9
23b	R3	53	0.0	0.053	7.8	LOS A	0.1	1.0	0.40	0.77	0.40	54.1
Approach		57	0.0	0.053	7.7	LOS A	0.1	1.0	0.40	0.77	0.40	53.8
East: Maida Vale Road												
4b	L3	45	0.0	0.128	7.4	LOS A	0.0	0.0	0.00	0.61	0.00	60.5
4a	L1	167	14.1	0.128	5.7	LOS A	0.0	0.0	0.00	0.61	0.00	54.1
Approach		212	11.1	0.128	6.1	NA	0.0	0.0	0.00	0.61	0.00	55.8
SouthWest: Ibis Place												
32a	R1	838	2.9	0.497	5.5	LOS A	0.9	6.7	0.12	0.51	0.12	55.2
32	R2	89	1.3	0.497	7.2	LOS A	0.9	6.7	0.12	0.51	0.12	51.0
Approach		927	2.8	0.497	5.7	NA	0.9	6.7	0.12	0.51	0.12	54.8
All Vehicles		1197	4.1	0.497	5.8	NA	0.9	6.7	0.11	0.54	0.11	54.9

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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MOVEMENT SUMMARY

Site: 101 [Ibis Place/ Raven Street/ Maida Vale Road_2031_AM]

Ibis Place/ Raven Street/ Maida Vale Road_2031_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Raven St												
21	L2	107	16.8	0.135	8.8	LOS A	0.5	4.4	0.58	0.79	0.58	46.7
23b	R3	20	16.7	0.135	8.4	LOS A	0.5	4.4	0.58	0.79	0.58	48.9
Approach		127	16.8	0.135	8.7	LOS A	0.5	4.4	0.58	0.79	0.58	47.2
East: Maida Vale Road												
4b	L3	46	19.5	0.403	7.7	LOS A	0.0	0.0	0.00	0.60	0.00	54.4
4a	L1	673	4.7	0.403	5.6	LOS A	0.0	0.0	0.00	0.60	0.00	55.5
Approach		719	5.6	0.403	5.8	NA	0.0	0.0	0.00	0.60	0.00	55.4
SouthWest: Ibis Place												
32a	R1	311	7.2	0.241	6.6	LOS A	0.9	6.7	0.32	0.44	0.32	52.0
32	R2	64	12.3	0.241	10.2	LOS B	0.9	6.7	0.32	0.44	0.32	48.4
Approach		375	8.1	0.241	7.2	NA	0.9	6.7	0.32	0.44	0.32	51.3
All Vehicles		1221	7.5	0.403	6.5	NA	0.9	6.7	0.16	0.57	0.16	53.1

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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MOVEMENT SUMMARY

Site: 101 [Ibis Place/ Raven Street/ Maida Vale Road_2031_PM]

Ibis Place/ Raven Street/ Maida Vale Road_2031_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Raven St												
21	L2	80	21.1	0.073	6.4	LOS A	0.3	2.4	0.26	0.60	0.26	47.9
23b	R3	22	0.0	0.073	8.3	LOS A	0.3	2.4	0.26	0.60	0.26	55.0
Approach		102	16.5	0.073	6.8	LOS A	0.3	2.4	0.26	0.60	0.26	49.9
East: Maida Vale Road												
4b	L3	43	2.6	0.136	7.4	LOS A	0.0	0.0	0.00	0.61	0.00	59.6
4a	L1	181	14.3	0.136	5.7	LOS A	0.0	0.0	0.00	0.61	0.00	54.1
Approach		224	12.1	0.136	6.1	NA	0.0	0.0	0.00	0.61	0.00	55.5
SouthWest: Ibis Place												
32a	R1	854	1.6	0.544	5.8	LOS A	2.2	16.1	0.21	0.48	0.23	55.3
32	R2	166	3.4	0.544	7.5	LOS A	2.2	16.1	0.21	0.48	0.23	50.3
Approach		1020	1.9	0.544	6.0	NA	2.2	16.1	0.21	0.48	0.23	54.4
All Vehicles		1346	4.7	0.544	6.1	NA	2.2	16.1	0.18	0.51	0.19	54.2

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 (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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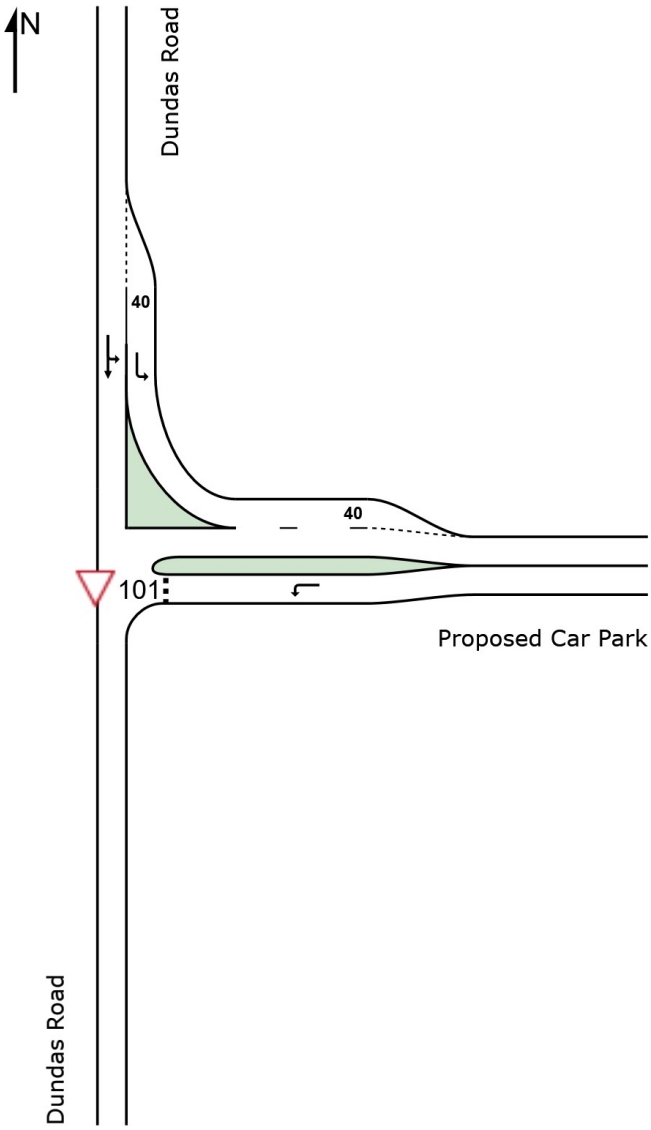
SITE LAYOUT

Site: 101 [Dundas Road_Proposed Car Park Access 1_AM]

Dundas Road_Proposed Car Park Access 1_AM
Site Category: (None)
Giveway / Yield (Two-Way)



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MOVEMENT SUMMARY

Site: 101 [Dundas Road_Proposed Car Park Access 1_AM]

Dundas Road_Proposed Car Park Access 1_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Proposed Car Park												
4	L2	1	0.0	0.002	5.6	LOS A	0.0	0.1	0.69	0.52	0.69	25.7
Approach		1	0.0	0.002	5.6	LOS A	0.0	0.1	0.69	0.52	0.69	25.7
North: Dundas Road												
7	L2	202	0.0	0.109	4.9	LOS A	0.0	0.0	0.00	0.55	0.00	34.8
8	T1	944	0.0	0.484	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		1146	0.0	0.484	0.9	NA	0.0	0.0	0.00	0.10	0.00	39.0
All Vehicles		1147	0.0	0.484	0.9	NA	0.0	0.1	0.00	0.10	0.00	39.0

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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Forrestfield Station Multi-Storey Car Park Page 119 of 128

MOVEMENT SUMMARY

▽ Site: 101 [Dundas Road_Proposed Car Park Access 1_PM]

Dundas Road_Proposed Car Park Access 1_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Proposed Car Park												
4	L2	802	0.0	0.491	0.0	LOS A	3.4	25.2	0.02	0.00	0.02	30.2
Approach		802	0.0	0.491	0.0	LOS A	3.4	25.2	0.02	0.00	0.02	30.2
North: Dundas Road												
7	L2	202	0.0	0.081	4.9	LOS A	0.0	0.0	0.00	0.54	0.00	34.8
8	T1	1	0.0	0.081	0.0	LOS A	0.0	0.0	0.00	0.54	0.00	33.6
Approach		203	0.0	0.081	4.8	NA	0.0	0.0	0.00	0.54	0.00	34.8
All Vehicles		1006	0.0	0.491	1.0	NA	3.4	25.2	0.02	0.11	0.02	31.0

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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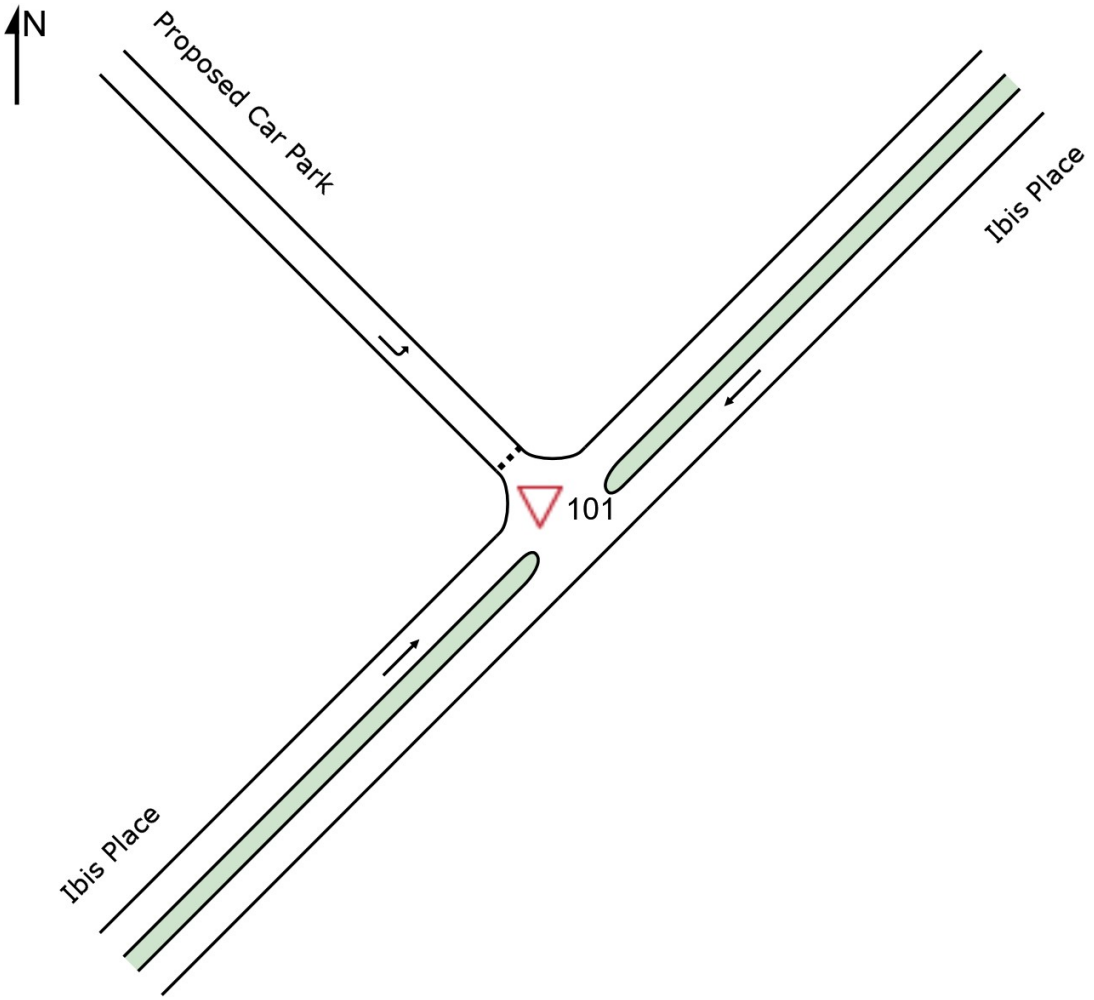
SITE LAYOUT

▽ Site: 101 [Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_AM]

Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_AM
Site Category: (None)
Giveway / Yield (Two-Way)



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MOVEMENT SUMMARY

Site: 101 [Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_AM _noRavenSt]

Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_AM_noRavenSt
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Ibis Place												
25	T1	148	34.1	0.102	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
Approach		148	34.1	0.102	0.0	NA	0.0	0.0	0.00	0.00	0.00	70.0
NorthWest: Proposed Car Park												
27	L2	1	0.0	0.001	2.2	LOS A	0.0	0.0	0.50	0.28	0.50	28.7
Approach		1	0.0	0.001	2.2	LOS A	0.0	0.0	0.50	0.28	0.50	28.7
SouthWest: Ibis Place												
31	T1	565	3.8	0.301	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach		565	3.8	0.301	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.9
All Vehicles		715	10.1	0.301	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.7

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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MOVEMENT SUMMARY

Site: 101 [Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_PM_noRavenSt]

Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_PM_noRavenSt
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Ibis Place												
25	T1	309	9.1	0.173	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach		309	9.1	0.173	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.9
NorthWest: Proposed Car Park												
27	L2	142	0.0	0.135	1.9	LOS A	0.5	3.9	0.47	0.39	0.47	28.9
Approach		142	0.0	0.135	1.9	LOS A	0.5	3.9	0.47	0.39	0.47	28.9
SouthWest: Ibis Place												
31	T1	449	3.5	0.239	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach		449	3.5	0.239	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.9
All Vehicles		900	4.9	0.239	0.3	NA	0.5	3.9	0.07	0.06	0.07	56.3

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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MOVEMENT SUMMARY

Site: 101 [Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_AM]

Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Ibis Place												
25	T1	104	48.4	0.080	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
Approach		104	48.4	0.080	0.0	NA	0.0	0.0	0.00	0.00	0.00	70.0
NorthWest: Proposed Car Park												
27	L2	1	0.0	0.001	2.2	LOS A	0.0	0.0	0.50	0.29	0.50	28.6
Approach		1	0.0	0.001	2.2	LOS A	0.0	0.0	0.50	0.29	0.50	28.6
SouthWest: Ibis Place												
31	T1	576	3.7	0.307	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach		576	3.7	0.307	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.9
All Vehicles		682	10.5	0.307	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.7

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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MOVEMENT SUMMARY

Site: 101 [Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_PM]

Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2021_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Ibis Place												
25	T1	262	9.9	0.148	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
Approach		262	9.9	0.148	0.0	NA	0.0	0.0	0.00	0.00	0.00	70.0
NorthWest: Proposed Car Park												
27	L2	142	0.0	0.133	1.8	LOS A	0.5	3.9	0.47	0.38	0.47	28.9
Approach		142	0.0	0.133	1.8	LOS A	0.5	3.9	0.47	0.38	0.47	28.9
SouthWest: Ibis Place												
31	T1	439	3.8	0.234	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach		439	3.8	0.234	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.9
All Vehicles		843	5.1	0.234	0.3	NA	0.5	3.9	0.08	0.06	0.08	55.5

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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MOVEMENT SUMMARY

Site: 101 [Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2031_AM]

Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2031_AM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Ibis Place												
25	T1	187	11.4	0.107	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
Approach		187	11.4	0.107	0.0	NA	0.0	0.0	0.00	0.00	0.00	70.0
NorthWest: Proposed Car Park												
27	L2	1	0.0	0.001	2.8	LOS A	0.0	0.0	0.54	0.33	0.54	28.2
Approach		1	0.0	0.001	2.8	LOS A	0.0	0.0	0.54	0.33	0.54	28.2
SouthWest: Ibis Place												
31	T1	646	6.3	0.352	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach		646	6.3	0.352	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.9
All Vehicles		834	7.4	0.352	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.7

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.
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Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 101 [Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2031_PM]

Proposed Car Park/ Ibis Place_Proposed Carpark Access 2_2031_PM
Site Category: (None)
Giveway / 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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
NorthEast: Ibis Place												
25	T1	239	7.0	0.131	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
Approach		239	7.0	0.131	0.0	NA	0.0	0.0	0.00	0.00	0.00	70.0
NorthWest: Proposed Car Park												
27	L2	142	0.0	0.152	2.5	LOS A	0.6	4.3	0.53	0.48	0.53	28.4
Approach		142	0.0	0.152	2.5	LOS A	0.6	4.3	0.53	0.48	0.53	28.4
SouthWest: Ibis Place												
31	T1	549	2.5	0.289	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach		549	2.5	0.289	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.9
All Vehicles		930	3.3	0.289	0.4	NA	0.6	4.3	0.08	0.07	0.08	56.3

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.
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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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Aurecon Australasia Pty Ltd
ABN 54 005 139 873
Level 5, 863 Hay Street
Perth WA 6000
Australia

T +61 8 6145 9300
F +61 8 6145 5020
E perth@aurecongroup.com
W aurecongroup.com