TRAFFIX
TRAFFIC AND TRANSPORT PLANNERS

TRAFFIC IMPACT ASSESSMENT (TIA)

Planning Proposal – Mixed Use Development
187 Slade Road, Bexley North

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TRAFFIX

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1. INTRODUCTION

TRAFFIX has been commissioned by Bexley North Hotel to undertake a traffic impact assessment (TIA) in support of a Planning Proposal relating to a proposed mixed-use development located at 187 Slade Road, Bexley North. It is proposed to vary the floor space ratio and building height controls for the site under the Rockdale Local Environmental Plan 2011. This site is commonly known as the Bexley North Hotel and is located within the Bayside Council Local Government Area (LGA) and has been assessed under that council's controls.

A concept scheme has been prepared by JKM Architects, consisting of residential apartments, hotel rooms, retail, a pub, and café. This report assesses the traffic impacts and parking requirements arising from this concept scheme, which is considered to be representative of the site being developed to its full potential when incorporating the proposed planning controls.

This report documents the findings of our investigations and should be read in the context of the Planning Report prepared separately. The proposed access is located over 90 metres to a classified road and therefore does not require referral to Transport for NSW (TfNSW) under the provisions of the State Environmental Planning Policy (SEPP) (Transport and Infrastructure) 2021. Nevertheless, TfNSW will be consulted as required by the Gateway Determination dated 30th of May 2023.

The report is structured as follows:

- Section 2: Describes the site and its location
- Section 3: Documents existing traffic conditions
- Section 4: Describes the proposed development
- Section 5: Assesses the parking requirements
- Section 6: Assesses traffic impacts
- Section 7: Discusses access and internal design aspects
- Section 8: Presents the overall study conclusions

2. LOCATION AND SITE

The subject site at 187 Slade Road, Bexley North is legally known as Lot 1 in DP31941. It is situated on the north-eastern corner at the intersection of Slade Road and Sarsfield Circuit. In a regional context, it is approximately 160 metres south-east of Bexley North Railway and approximately 12 kilometres south-west of the Sydney central business district (CBD).

The site has an irregular configuration with a total site area of 4,236m^2. It has an eastern frontage of approximately 87 metres to Sarsfield Circuit and a northern site frontage of approximately 75 metres to Slade Road. The site is bound by a neighbouring council carpark (Bexley North Carpark) to the west that measures 55 metres and has an irregular southern boundary to a residential flat building (22-24 Sarsfield Circuit, Bexley North) of approximately 46 metres.

The site currently has four (4) vehicular access driveways servicing the hotel and associated accommodation. Two (2) vehicular driveways are located at the rear of the site on Sarsfield Circuit and two (2) driveways are located on Slade Road which provide access to the on-site drive-through liquor store.

A Location Plan is presented in **Figure 1** with a Site Plan presented in **Figure 2** which provide an appreciation of the site and surrounding road network.

Figure 1: Location Plan

Figure 2: Site Plan

3. EXISTING TRAFFIC CONDITIONS

3.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 3** with the following roads of particular interest:

- Bexley Road: a TfNSW Main Road (MR 169) that generally runs in a north-south direction between Canterbury Road in the north and Forest Road in the south. In the vicinity of the site, Bexley Road carries two (2) lanes of traffic in both directions within a divided carriageway and is generally subject to 60km/h speed zoning. Bexley Road.
- Slade Road: an unclassified regional road (RR 7030) that runs in an east-west direction between Darley Road in the east and Bexley Road in the west. Slade Road is subject to a 50km/h speed zoning, accommodates a single traffic lane in either direction and permits unrestricted kerbside parking along both sides.
- Sarsfield Circuit: a local road that runs in a north-south direction between Slade Road in the north and Bexley Road in the south. Sarsfield Circuit accommodates a single lane of traffic in either direction and is subject to a 50km/h speed zoning. Unrestricted kerbside parking is permitted on the western side of the road only; whilst the eastern side is subject to 'No Parking' restrictions.

It can be seen from Figure 3 that the site is conveniently located with respect to the arterial and local road systems serving the region with connections to the north and south (via Bexley Road) using Slade Road and Sarsfield Circuit. It is therefore able to effectively distribute traffic onto the wider road network, minimising traffic impacts particularly on local roads.

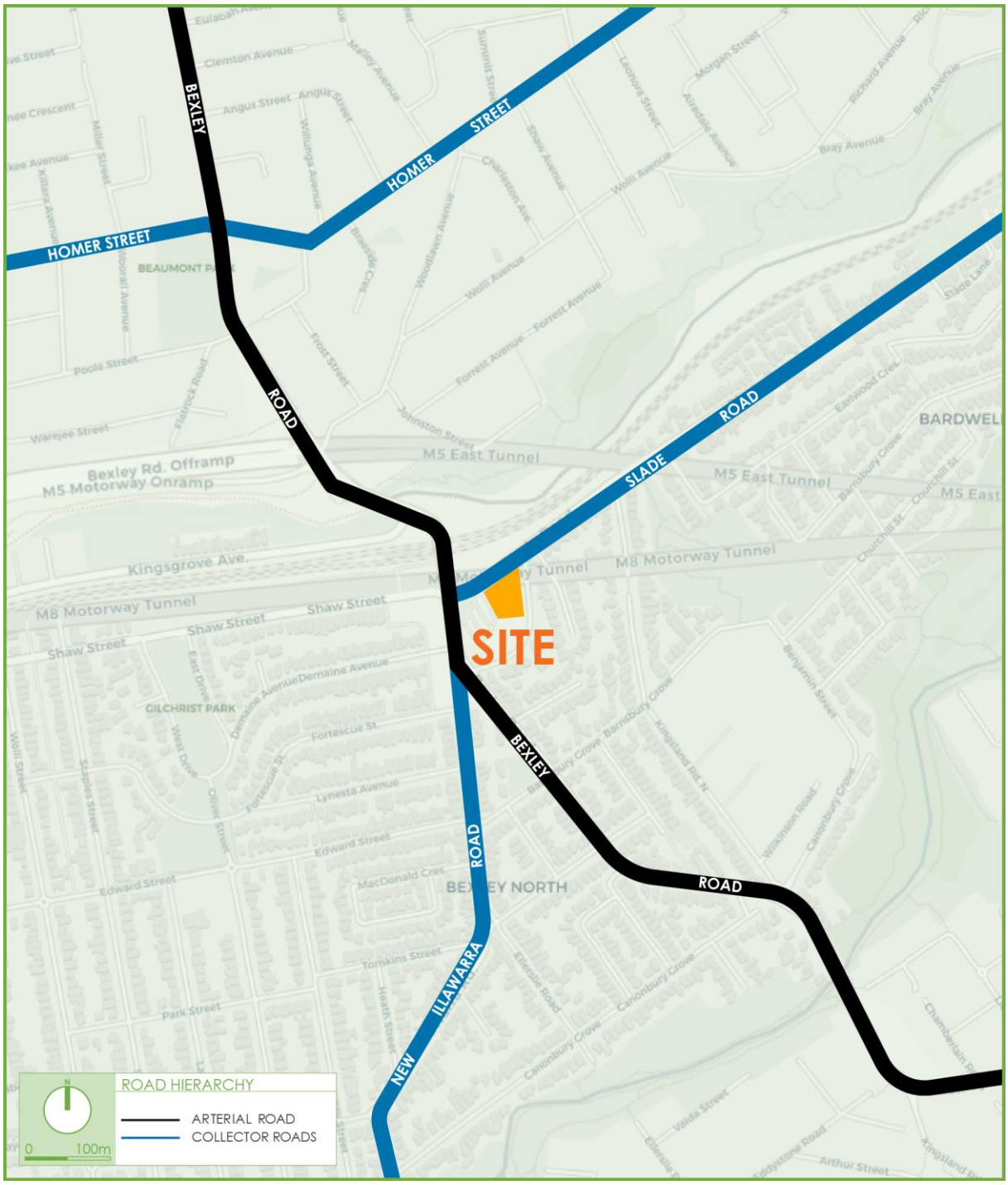

Figure 3: Road Hierarchy

3.2 Public Transport

The existing rail and bus services that operate in the locality are shown in **Figure 4**. It is evident that the site is highly accessible public transport services, notably to rail being located within 160 metre walking distance (3-minute walk) to Bexley North Railway Station. This station provides services on the T8 line, connecting the site to major attractors such as the domestic and international airports, Central Station, Wolli Creek, Campbelltown, and the wider rail network.

In additional there are multiple bus stops within 400m of the subject site, notably on Slade Road and Bexley Road, that are serviced by several bus routes providing connections to urban centres such as Rockdale, Drummoyne, Roselands, Kogarah, Five Dock, Hurstville, Burwood, and Bondi Junction. These bus routes are provided below

- 410 - Macquarie Park to Hurstville
- 420 - Mascot Station to Burwood
- 446 - St George Hospital to Roselands
- 491 - Hurstville to Five Dock
- 493 - Roselands to Rockdale

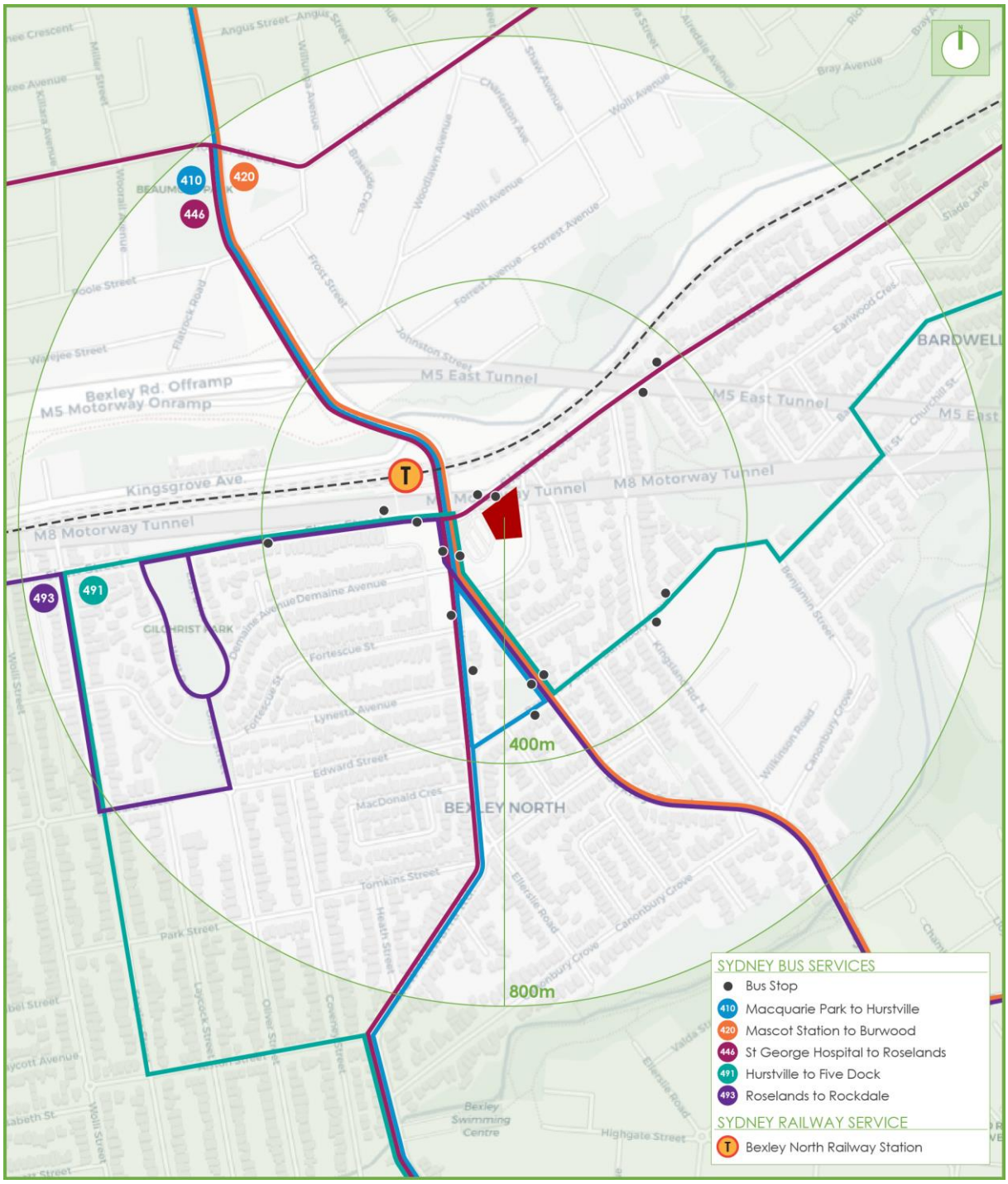

Figure 4: Public Transport

3.3 Pedestrian Access

There are a number of key pedestrian activity generators in the vicinity of the site including Bexley North Railway Station and the Bexley mixed use area located along Bexley Road, Shaw Street and New Illawarra Road. A number of pedestrian facilities enable these movements as discussed below.

3.3.1 Bexley North Railway Station

Bexley Road and Slade Road link the subject site and the Railway Station, providing a pedestrian footpath along either side of the road. The signalised intersection of Bexley Road, Shaw Street and Slade Road provides a signalised pedestrian crossing on all legs of the intersection.

3.3.2 Mixed Use Zone

The roads within the vicinity of the mixed-use area including Bexley Road, Shaw Street, New Illawarra Road, and Slade Street all provide pedestrian footpaths along either side of the road with the signalised intersection at Bexley Road, Shaw Street and Slade Road providing a signalised pedestrian crossing on all legs.

As such, these pedestrian routes allow for safe and convenient access to key pedestrian activity centres.

3.4 Key Intersections

Three (3) key intersections have been identified in the vicinity of the site. These intersections are located at the junction of main thoroughfares that will be utilised by users associated with the future development.

3.4.1 Bexley Road, Slade Road, and Shaw Street

Figure 5: Intersection of Bexley Road and Slade Road

It can be seen from **Figure 5** that the intersection of Slade Road and Bexley Road is a signalised intersection with all approaches providing signalised pedestrian crossings. The main attributes of each approach are outlined below:

- Bexley Road (north and south legs)
  - The northbound approach provides two (2) through lanes with the left lane permitting left turns onto Slade Road and the right lane permitting right turns onto Slade Road.
  - The southbound approach provides two (2) through lanes with the left lane permitting left turns onto Slade Road. No right turns are permitted from the southbound direction from Bexley Road onto Shaw Road.
- Slade Road (east leg)
  - The westbound approach provides two (2) through lanes with the left lane permitting left turns onto Bexley Road and right lane permitting right turns onto Bexley Road.
- Shaw Street (west leg)
  - The eastbound approach provides two (2) through lanes with the left lane permitting left turns onto Bexley Road and right lane permitting right turns onto Bexley Road.

3.4.2 Slade Road and Sarsfield Circuit

Figure 6: Intersection of Slade Road and Sarsfield Circuit

It can be seen from **Figure 6** that the intersection of Slade Road and Sarsfield Circuit is a three-legged T-intersection. The intersection is priority-controlled with Sarsfield Circuit being the minor leg. The main attributes of each approach are outlined below:

- Sarsfield Circuit (south leg)
  - The northbound approach provides a single lane and permitting left and right turns onto Slade Road.
- Slade Road (east and west legs)
  - The eastbound approach provides a single through lane and permitting right turns onto Sarsfield Circuit.
  - The westbound approach provides a single through lane and permitting left turns onto Sarsfield Circuit.

3.4.3 Bexley Road and Sarsfield Circuit

Figure 7: Intersection of Bexley Road and Sarsfield Circuit

It can be seen from **Figure 7** that the intersection of Bexley Road and Sarsfield Circuit is a four-legged intersection. The intersection is priority-controlled with Sarsfield Circuit the minor leg. The main attributes of each approach are outlined below:

- Bexley Road (north and south legs)
  - The northbound approach provides two (2) through lanes. Right turns onto Sarsfield Circuit are not permitted.
  - The southbound approach provides two (2) through lane with the left lane permitting left turns onto Sarsfield Circuit.
- Sarsfield Circuit (east leg)
  - The westbound approach provides a single lane and permitting left turns onto Bexley Road only. Right turns onto Bexley Road are not permitted.
- Illawarra Road (west leg)
  - The northbound approach provides a single lane permitting through movements onto Bexley Road only. Right turns onto Bexley Road are not permitted.

4. DESCRIPTION OF PROPOSED DEVELOPMENT

A detailed description of the proposed development is provided in the Planning Report prepared separately. In summary, approval is sort to change the current floor space ratio and building height controls of the site.

For the purpose of assessment, a concept development scheme for a mixed-use development has been prepared, which is representative of the full development potential of the site under the planning proposal. The concept development comprises the following:

- 92 residential apartments comprising the following:
  - 24 x one-bedroom apartments;
  - 49 x two-bedroom apartments; and
  - 19 x three-bedroom apartments.
- 1,800m^2 of hotel GFA (50 rooms);
- 1,550m^2 of pub GFA;
- 1,225m^2 of retail/café GFA;
- Three (3) levels of car parking accommodating approximately 241 parking spaces.

The parking and traffic impacts arising from the development are discussed in **Section 5** and **Section 6**. Reference should be made to the plans submitted separately which are presented at reduced scale in **Appendix A**.

5. PARKING REQUIREMENTS

5.1 Car Parking

5.1.1 Residential – Council Controls

The Bayside Council Development Control Plan (DCP) 2022, Part 3.5 provides nominal car parking rates for high density residential developments in accordance with **Table 1** below:

Table 1: Council Parking Rates

Type	Units	Parking Rate	Spaces Required
1 Bed	24	1.0 space per unit	24
2 Bed	49	2.0 spaces per unit	98
3+ Bed	19	2.0 spaces per unit	38
Residential Visitor	92	1.0 space per 5 units	18.4 (19)
		Total	**179**

5.1.2 Residential - SEPP 65 Controls

The State Environmental Planning Policy 65 Apartment Design Guide provides parking requirements for high density apartment developments within accessible locations (defined as being located within 800 metres of a railway station). SEPP 65 permits the use of the parking rates provided in the Transport for New South Wales Guide to Traffic Generating Developments (TfNSW Guide) for high density residential developments within 'metropolitan sub-regional centres'. TfNSW Guide parking requirements are outlined in the **Table 2** below:

Table 2: TfNSW (SEPP 65) Parking Rates

Type	Units	Minimum Parking Rate	Minimum Spaces Required
1 Bed	24	0.6 spaces per unit	14.4 (15)
2 Bed	49	0.9 spaces per unit	44.1 (45)
3+ Bed	19	1.4 spaces per unit	26.6 (27)
Residential Visitor	92	1.0 space per 5 units	18.4 (19)
		Total	**106**

It can be seen from Table 1 and Table 2 that the proposed development is required to provide a minimum of 106 residential parking spaces, being the lesser of the DCP and TfNSW Guide requirements, in accordance with SEPP 65.

5.1.3 Hotel / Pub / Retail / Café

Council's DCP requires mixed-use developments (non-residential components) to provide car parking in accordance with the rates shown in **Table 3**.

With regards to parking rates relating to 'pub' uses, the Transport for New South Wales (TfNSW) Guide to Traffic Generating Developments (2002) provides the following advice regarding parking provisions for 'club' developments which are comparable to 'pub' uses.

> *"Off-street car parking must be provided to satisfy the average maximum demand. Research has indicated that the demand for parking varies substantially depending on the type of club and cannot readily be related to building floor areas or to the membership. The determination of the number of parking spaces required is therefore based on the characteristics of the proposed development. Comparisons must be drawn with similar clubs." (RMS Guide to Traffic Generating Developments)*

TRAFFIX has undertaken parking surveys of a club located in the Fairfield City Council LGA, within 500m of a Railway Station. This club has similar characteristics, being within walking distance of a Railway Station and town centre. As such, an average parking demand rate has

been derived from this comparable development based on the existing parking demand surveys

Application of the Council rates and survey-based demand rate for pubs results in the following:

Table 3: Council Parking Rates

Type	Rooms / GFA	Parking Rate	Minimum Spaces Required[2]
Hotel Rooms	50	1 space per 4 rooms	12.5 (13)
Pub	1,550m^2	1 space per 26m^2 GFA[1]	59.6 (60)
Retail / Café	1,225m^2	1 space per 40m^2 GFA	30.6 (31)
		Total	**104**

[1] Based on survey data of similar developments.

[2] Parking numbers rounded up to next whole number as per DCP

It can be seen from Table 3 that a minimum of 104 parking spaces are required for the hotel, pub, retail, and café components of the development, in accordance with Council's DCP.

5.1.4 Total Car Parking Provision

In summary, the minimum car parking allowance for the entire development is outlined in **Table 4** below:

Table 4: Overall Car Parking Requirements

Type	Units / Rooms / GFA	Parking Rate	Spaces Required[2]
Residential Component (SEPP 65)			
1 Bed	24	0.6 spaces per unit	15
2 Bed	49	0.9 spaces per unit	45
3+ Bed	19	1.4 spaces per unit	27
Residential Visitor	92	1.0 space per 5 units	19
		Sub-Total	**106**
Other Land Uses (DCP)			
Hotel Rooms	50	1 space per 4 rooms	13
Pub	1,550m^2	1 space per 26m^2 GFA[1]	60
Retail / Café	1,225m^2	1 space per 40m^2 GFA	31
		Sub-Total	**104**
		Total	**210**

[1] Based on survey data of similar developments.

[2] Parking numbers rounded up to next whole number as per DCP

It can be seen from Table 4 that overall; the development is required to provide a minimum car parking provision for 210 spaces, in compliance with the SEPP 65 and Council's DCP. In response, the concept plans show approximately 241 parking spaces throughout three (3) basement levels, thus demonstrating that the site is capable of accommodating all required parking. Nevertheless, this will be further assessed at development application stage/s.

5.2 Accessible Parking

Accessible parking requirements will be determined at a future development application stage, at which time, the parking arrangement will be optimised. Accessible parking requirements will be assessed against Section 3.5.5 of Council's DCP and the Building Code of Australia.

5.3 Motorcycle Parking

Motorcycle parking requirements will be determined at a future development application stage, at which time, the parking arrangement will be optimised. Motorcycle parking requirements will be assessed against Section 3.5.4 of Council's DCP.

5.4 Bicycle Parking

Bicycle parking requirements will be determined at a future development application stage, at which time, the parking arrangement will be optimised. Bicycle parking requirements will be assessed against Section 3.5.4 of Council's DCP.

5.5 Car Wash Bay

Council's DCP requires 1 car wash bay for every 60 dwellings or part thereof. Car wash bay requirements will be determined at a future development application stage, at which time, the parking arrangement will be optimised. Car wash requirements will be assessed against Section 3.5.3 of Council's DCP.

5.6 Car Share

Council's DCP requires residential developments with more than 25 dwellings and commercial developments with more then 1,000m^2 and are located within 800m from a railway station, to provide one (1) car share space per 25 car parking spaces. Car share requirements will be determined at a future development application stage, at which time, the parking arrangement will be optimised. Car share requirements will be assessed against Section 3.5.9 of Council's DCP.

5.7 Electric Vehicle (EV) Charging

Council's DCP requires car parking spaces to be 'EV-Ready' as per the below:

- All multi-unit residential car spaces must be 'EV Ready' and enable future installation of a smart EV charger; and
- Non-residential developments with greater than 1,000m^2 GFA are to have a minimum of 20% of all parking spaces to be 'EV Equipped', with an EV faster charger installed.

EV requirements will be determined at a future development application stage, at which time, the parking arrangement will be optimised. EV requirements will be assessed against Section 3.5.9 of Council's DCP.

5.8 Passenger Drop-off/Pick-up

Council's DCP requires hotel accommodation to provide one (1) taxi pick-up and set-down space per 100 rooms within an on-site porte-cochere. The provision of an on-site porte-cochere is not considered warranted in this situation due to the highly accessible location of the hotel with regards to public transport, particularly the Bexley North Railway Station located within a 3-minute walk of the site. The T8 line provides convenient connections to Sydney City and the International/Domestic Airport Stations (4 stops away). In addition, it is not considered feasible to allow taxi/ride share vehicles into the secured basement area.

As such, it is proposed that all taxis, ride share, and private light vehicles would drop-off and pick-up passengers within the existing 'No Parking' zones adjacent the site along Slade Road and Sarsfield Circuit. This arrangement is permitted under NSW Road Rules 2014, Rule 168 which state the following regarding 'No Parking' signs:

(1) The driver of a vehicle must not stop on a length of road or in an area to which a no parking sign applies, unless the driver:

(a) is dropping off, or picking up, passengers or goods, and

(b) does not leave the vehicle unattended, and

(c) completes the dropping off, or picking up, of the passengers or goods, and drives on, as soon as possible and, in any case within the required time after stopping.

(2) For this rule, a driver leaves a vehicle unattended if the driver leaves the vehicle so that the driver is over 3 metres from the closest point of the vehicle.

(3) In this rule:

Required time means:

(a) if information on or with the sign indicates a time – the indicated time, or

(b) if there is no indicated time – 2 minutes, or

(c) if there is no indicated time, or the indicated time is less than 5 minutes, and rule 206 applies to the driver – 5 minutes.

As can be seen from NSW Road Rules 168, the 'No Parking' restrictions located on Slade Road and Sarsfield Circuit are viable options for guest drop-offs and pick-ups (via taxis, ride share etc.).

5.9 Bus/Coach Parking

Council's DCP requires hotel accommodation to provide two (2) coach pick-up and set-down spaces within an on-site port-cochere, plus an hourly shuttle bus service between the site, Sydney Airport and the City during airport operating hours. Again, the provision of an on-site porte-cochere or shuttle bus service is not considered warranted in this situation due to the highly accessible location of the hotel with regards to public transport, particularly the Bexley North Railway Station located within a 3-minute walk of the site. The proposed hotel will not be targeted at large groups travelling by coach and will not be marketed to this type of guest. Accordingly, the resulting hotel guest profile will be predominately business and leisure based.

With the above in mind, it is expected that the majority of guests will arrive via public transport (train), taxis, or ride share, and this can be communicated with prospective guests prior to their arrival/booking. The provision of on an on-site porte-cochere that can accommodate two (2) coaches (12.5m heavy rigid vehicles) would also significantly impact the frontage of the development, noting a 4.5m head height clearance and the requirement for coaches to enter and exit the development in a forward direction.

Noting the above, no on-site porte-cochere is provided.

5.10 Loading/Unloading Facilities & Waste Collection

Council's DCP requires mixed-use developments to provide off-street service bays in accordance with the below:

5.10.1 Residential Servicing

- 2 x medium rigid vehicle bays.

5.10.2 Hotel Servicing

- 2 x van bays;

- 1 x small rigid vehicle bay; and
- 1 x medium rigid vehicle bay.

5.10.3 Pub / Retail / Café Servicing

- 1 x van bay; and
- 1 x medium rigid vehicle bay.

5.10.4 Total Requirement

- 3 x van bays;
- 1 x small rigid vehicle bay; and
- 4 x medium rigid vehicle bays.

In accordance with Council's DCP, three (3) van bays, one (1) SRV bay and four (4) MRV bays are required.

The above requirement assumes independent provision for each land use component (a cumulative assessment) and therefore takes no account of a 'managed' approach, with shared loading arrangements subject to a loading dock management plan. It also does not reflect the likely operational requirements of the proposed uses.

The development proposes a single service bay that can accommodate an 8.8m long medium rigid vehicle. The development proposes to engage a private contractor for waste collection. The loading area also provides a turntable to ensure that service vehicles can enter and leave the site in a forward direction.

A Loading Dock Management Plan (LDMP) could be prepared prior to the release of an occupation certificate in response to a future condition of consent. The LDMP would outline the requirements of the site in relation of deliveries and servicing activities, anticipated vehicle sizes and frequencies, noting that this detailed information will be available in the later stages of the project. The LDMP could include the following information:

- Details of all delivery and servicing activities to be carried out for all uses on-site;
- Details of how waste services will be accommodated to meet service requirements;

- Details of vehicle types required to conduct expected activities; and
- Details of frequency of vehicles accessing the dock.

In summary, the detailed information regarding the servicing arrangements with a LDMP will be provided at subsequent development application stage/s, based on the operational characteristics of the proposed development.

6. TRAFFIC AND TRANSPORT IMPACTS

6.1 Existing Site Generation

The subject site currently accommodates a hotel known as the Bexley North Hotel. The development includes a bar, bistro, 17 motel style rooms and a drive-thru liquor store. The estimated GFA of the current Bexley North Hotel including the drive-through bottle shop is approximately 1,500m^2.

6.1.1 Pub

The Transport for New South Wales Guide to Traffic Generating Developments (TfNSW Guide) 2002 recommends the analysis of traffic generation for a proposed 'Hotel – Traditional' development be based on surveys of similar existing hotels.

In addition to the above, the utilisation of this component the proposed development is more akin to a 'club' development. As such, the TfNSW Guide provides the following similar advice for 'club' developments:

> *"Surveys of licenced clubs conducted by the RTA in 1978 indicate that it is difficult to generalise on their traffic generation because of the diversified nature of clubs. Traffic generation is affected by such factors as the provision of live entertainment, gambling facilities, number of members and club location. Behavioural changes since 1978, such as the introduction of random breathing testing, also make such generalisations more difficult."*

Traffic generation rates are therefore not specified in the TfNSW Guide for this type of development and in any event, such a rate would not be as accurate or reliable. As such, the TfNSW Guide prefers a methodology-based survey assessment of comparable developments. TRAFFIX has had extensive experience with developments of this nature and has identified an average traffic generation rate, based on traffic surveys undertaken at the comparable development within the Fairfield City Council LGA, referred to in Section 5. This average rate is summarised as follows:

- 2.34 vehicle trips per 100m^2 GFA in the evening peak hour.

It should be noted that a large majority of staff arrive to the pub after the morning peak and therefore do not contribute to traffic generation in the morning peak period. Application of the average traffic generation rate to the existing 1,500m^2 GFA and assuming a modal split of 50:50 for this type of development, will result in the following anticipated traffic generation:

- 35 vehicle trips during the evening peak hour (18 in, 17 out)

6.1.2 Hotel

The TfNSW Guide specifies an evening trip rate of 0.4 veh/hr per unit/room for motels (applicable for assessment purposes). Application of this rate to the existing 17 hotel rooms and adopting a spit of 80:20 provides the following generation:

- 7 vehicle trips during the morning peak hour (1 in, 6 out)
- 7 vehicle trips during the evening peak hour (6 in, 1 out)

6.1.3 Combined Existing Generation

The combined trip generation of the existing land use is summarised below:

- 7 vehicle trips during the morning peak hour (1 in, 6 out)
- 42 vehicle trips during the evening peak hour (24 in, 18 out)

6.2 Development Trip Generation

The impacts of the proposed mixed-use development on the external road network have been assessed having regard for the indicative yield scenarios as summarised in **Section 4** above. This assessment has been undertaken in accordance with the requirements of the TfNSW Guide and as such, the traffic generation rates published in the TfNSW Guide have been adopted for each individual land use. The result of this assessment is summarised below.

6.2.1 Residential

In August 2013, TfNSW released Technical Direction TDT 2013/04a, which provides revised trip generation advice for a number of land uses based on survey data obtained since 2009. One

of the land uses covered by TDT 2013/04a is high density residential development. The average Sydney weekday trip rates provided by TDT 2013/04a have been adopted for assessing the traffic generating potential of the subject development. The relevant trip rates are as follows:

- 0.19 vehicle trips per unit during the morning peak hour; and
- 0.15 vehicle trips per unit during the evening peak hour.

Application of these trip rates to the 92 residential units proposed, and adopting an 80:20 split, results in the following generation:

- 17 vehicle trips during the morning peak hour (3 in, 14 out)
- 14 vehicle trips during the evening peak hour. (11 in, 3 out)

6.2.2 Hotel

The TfNSW Guide specifies an evening trip rate of 0.4 veh/hr per unit/room for motels (applicable for assessment purposes). A morning trip rate is not specified within the TfNSW Guide; therefore, a morning trip rate equal to the evening trip rate has been assumed. Application of this rate to the proposed 50 hotel rooms and adopting an 80:20 split provides the following generation:

- 20 vehicle trips during the morning peak hour (4 in, 16 out)
- 20 vehicle trips during the evening peak hour (16 in, 4 out)

It is noted that the anticipated trip generation above is considered a conservative assessment as it does not factor the proximity of the Bexley North Railway Station and proposed operation (including clientele) of the hotel which would likely reduce the trip generation. Noting that Bexley North Railway Station is on the T8 – City to Macarthur line and is an 8 - 11 minute train ride from the International and Domestic Airports, respectively. Moreover, it is reasonable to expect that most hotel patrons would either be travelling by rail or taxi/uber given the site's proximity to railway services and Sydney City.

6.2.3 Pub

As discussed in **Section 6.1.1**, a rate of 2.34 trips per 100m^2 GFA in the evening peak hour has been used for the intended pub use to calculate trip generation, based on other developments of a similar nature. A majority of staff arrive to the pub after the morning peak period and therefore do not generate contribute to traffic generation in the morning peak period.

Application of this rate to the proposed 1,550m^2 of pub GFA and adopting a 50:50 split results in the following generation:

- 36 vehicle trips during the evening peak period (18 in, 18 out)

6.2.4 Retail / Café (Commercial)

The TfNSW Guide provides traffic generation rates for secondary retail developments, which it defines as retail stores tending not to be the primary attractor to the development and thus are applicable to the commercial component of the development. The TfNSW Guide recommends an evening weekday peak traffic generation rate of 4.6 veh/hr per 100 m^2 gross floor leasable area (GLFA) for secondary retail uses. Whilst no rates are provided for morning peak hourly traffic generation, it is assumed that the morning peak traffic generation is 30% of the evening peak, representing staff arrivals. As referenced in the TfNSW Guide, GLFA is about 75% of the GFA.

On this basis, the 1,225m^2 of retail GFA equates to 919m^2 GLFA. Application of the above trip rate and adopting a 50:50 split results in the following generation:

- 13 vehicle trips during the morning peak hour (13 in, 0 out)
- 42 vehicle trips during the evening peak hour (21 in, 21 out)

The above anticipated traffic generation of the retail component is considered a conservative assessment, noting the proximity to the Bexley North Railway Station and the likelihood of linked trips between the various retail/commercial uses on-site and in the immediate area. Furthermore, it is anticipated that many of the customers associated with the proposed retail tenancies would reside in the surrounding local area, further reducing vehicle trips.

6.2.5 Combined Traffic Generation

The combined generation of the residential and non-residential components can be summarised as follows:

- 50 vehicle trips during the morning peak hour (20 in, 30 out)
- 112 vehicle trips during the evening peak hour (66 in, 46 out)

Nevertheless, this is a cumulative (worst case) scenario that does not take full account of the synergies that exist within a mixed-use development, whereby people attending one use will simply walk to another use and this has the effect of 'internalising' trips and reducing traffic generation. This effect has been ignored in order to assess a worst-case scenario and/or to account for any variations to trip rates.

6.3 Traffic Impacts

The above traffic generation is not a net increase over existing conditions. When accounting for the existing uses of the site as discussed above, the proposed development will generate:

- +43 vehicle trips during the morning peak hour (+19 in, +24 out)
- +70 vehicle trips during the evening peak hour (+42 in, +28 out)

6.4 Traffic Distribution

Vehicle trips generated by the proposed development have been distributed throughout the surrounding road network using existing traffic survey data. In other words, the percentage of trips coming from the North, South, East, and West to the study area were extracted from the traffic surveys during each peak period and applied to the proposed development trip generation, noting some allowance for driver behaviour. These percentages were also applied to the outbound vehicle trips.

Collectively, the development volumes assessed have been distributed across the road network as illustrated in **Figure 8** and **Figure 9**, for morning and evening peaks, respectively. The analysis assumes that access to the site will be achieved from Sarsfield Circuit, in accordance with the concept plans.

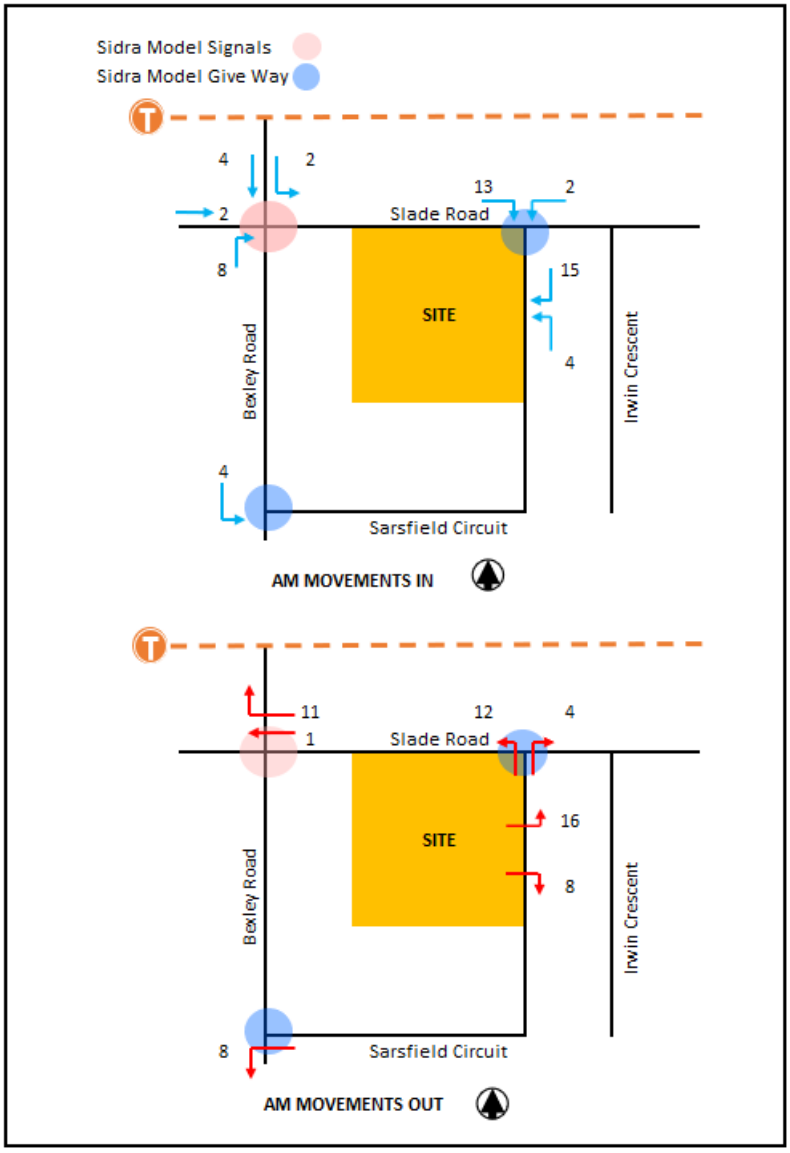

Figure 8: AM Peak Period Distribution (Vehicle trips per hour)

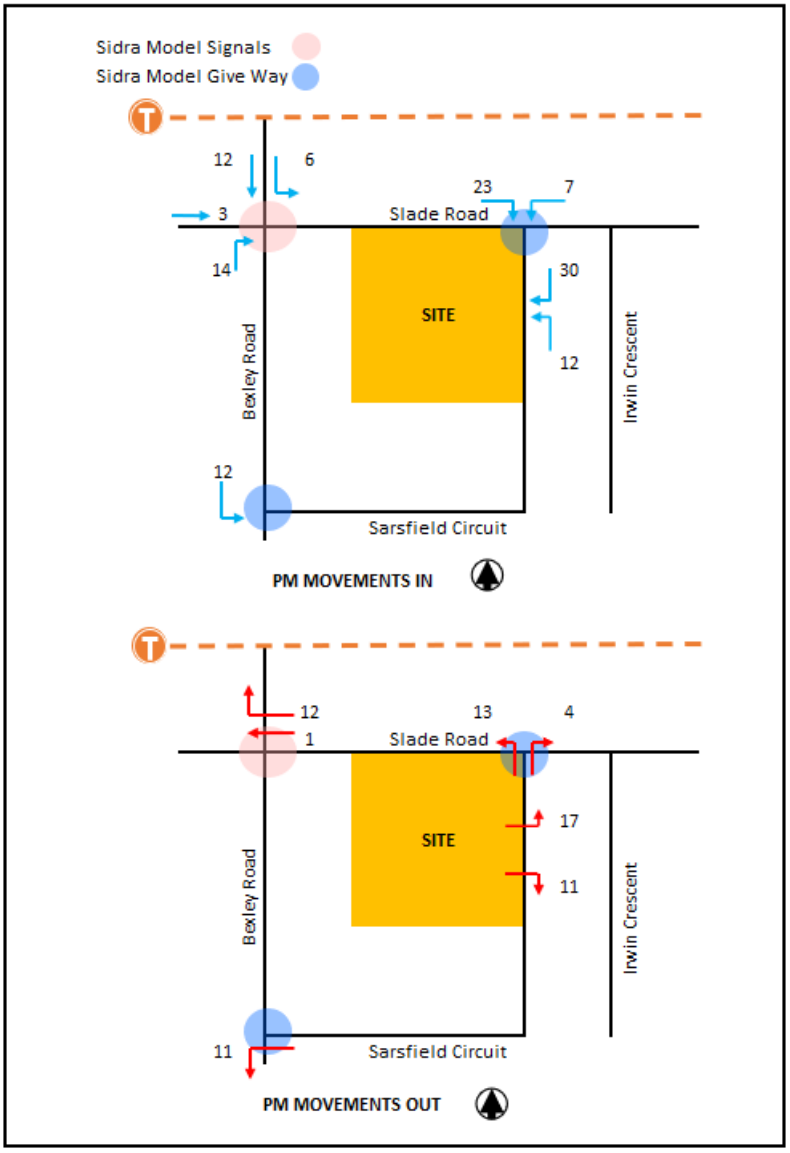

Figure 9: PM Peak Period Distribution (Vehicle trips per hour)

6.5 Peak Period Intersection Performance

In order to assess the potential traffic impacts of the proposed development, the following scenarios were identified:

- 2023 Base Case; and
- 2023 Base Case + Development.

Traffic surveys were undertaken of the intersections mentioned above, which are considered to be most critical in relation to the site. These counts were undertaken on 2 August 2023 during the network peak periods, being between 7:00am and 9:00am (morning peak period) and 4:00pm and 6:00pm (evening peak period).

The traffic volumes in these surveys formed the base case volumes for software modelling undertaken to assess intersection performance characteristics under existing traffic conditions. The SIDRA Intersection 8 model produces a range of outputs, the most useful of which are the Degree of Saturation (DOS) and Average Vehicle Delay per vehicle (AVD). The AVD is in turn related to a level of service (LOS) criteria. These performance measures can be interpreted using the following explanations:

DoS - the DoS is a measure of the operational performance of individual intersections. As both queue length and delay increase rapidly as DoS approaches 1, it is usual to attempt to keep DoS to less than 0.9. When DoS exceeds 0.9 residual queues can be anticipated, as occurs at many major intersections throughout the metropolitan area during peak periods. In this regard, a practical limit at 1.1 can be assumed. For intersections controlled by roundabout or give way/stop control, satisfactory intersection operation is generally indicated by a DoS of 0.8 or less.

AVD - the AVD for individual intersections provides a measure of the operational performance of an intersection. In general, levels of acceptability of AVD for individual intersections depend on the time of day (motorists generally accept higher delays during peak commuter periods) and the road system being modelled (motorists are more likely to accept longer delays on side streets than on the main road system).

LoS - this is a comparative measure which provides an indication of the operating performance of an intersection as shown in **Table 5** below.

Table 5: Existing and Future Intersection Performance Indicators (TfNSW)

Level of Service (LoS)	Average Delay per Vehicle (sec/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	Less than 14	Good Operation	Good Operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and space capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	42 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode or major treatment

A summary of the modelled results is provided below in **Table 6**. Reference should also be made to the SIDRA outputs provided in **Appendix B** which provide detailed results for individual lanes and approaches.

Table 6: Existing and Future Intersection Performances

Intersection	Control	Scenario	Period	Degree of Saturation	Average Delay (s)	LoS
Bexley Road / Slade Road	Signalised	Base	AM	0.994	71.7	F
			PM	0.852	44.5	D
		Base + Dev	AM	1.00	75.0	F
			PM	0.873	46.4	D
Slade Road / Sarsfield Circuit	Priority Controlled	Base	AM	0.249	8.6	A
			PM	0.244	8.7	A
		Base + Dev	AM	0.262	10.9	A
			PM	0.55	11.5	A
Bexley Road / Sarsfield Circuit / Illawarra Road	Priority Controlled	Base	AM	1.977	903	F
			PM	1.399	385.1	F
		Base + Dev	AM	2.036	957	F
			PM	1.421	404.5	F

6.5.1 Priority Controlled Intersection Performance

It can be seen from **Table 6** that the intersections of Slade Road and Sarsfield Circuit recorded a minimal change to average delay of 2.3 seconds in the morning peak period and 2.8 seconds in the evening peak period. The intersection remains at a level of service 'A' during both peaks during the base case plus development scenario. The intersection of Bexley Road, Sarsfield Circuit and Illawarra Road recorded a level of service 'F' in the morning and evening peak periods. This poor performance is due the Illawarra Road through merge movement onto Bexley Road, which is known to have capacity issues during peak periods. This movement experiences moderate increases in average delays in the morning and evening peaks. However, this is expected, noting the movement has an existing degree of saturation above

1.0. In this regard, the impact of the development on these priority-controlled intersections during the morning and evening peak periods is considered acceptable, noting the known capacity issues at the Bexley Road / Illawarra Road intersection.

6.5.2 Signalised Intersection Performance

It can be seen from **Table 6** that the intersection of Bexley Road and Slade Road currently operates at a level of service 'F' during the morning peak period and a level of service 'D' during the evening peak period. The intersection will however continue to operate at these levels of service in the base case plus development scenario.

Morning Peak

During the morning peak, the net development impact is less than one vehicle per minute overall; and slightly less than this through this intersection. This represents a net increase of generally one vehicle per signal cycle, with average delays increasing by only 3.3 seconds, which is moderate and will be generally imperceptible.

Evening Peak

During the evening peak, the net development impact is slightly above one vehicle per minute overall; and again, this is slightly less than this through this intersection. This similarly represents a net increase of generally one vehicle per signal cycle, with average delays increasing by only 1.9 seconds, which is moderate and will be imperceptible.

It is reiterated that this assessment represents a worst-case scenario, with no account taken of the trip reductions from internalised (multi-purpose) trips that will occur in practice, due to the synergy between each land use component. That is, improved conditions can be expected, with reduced delays and no unacceptable traffic impacts.

Finally, the site is presently zoned MU1-Mixed Use and under this current zoning the highest traffic generating land use that is permissible is a retail use. This is a higher generating use than the proposed use, noting that high density residential uses are low traffic generating uses.

In summary, the surrounding road network will experience small increases to average delays during peak periods, but these impacts are moderated with no external improvements

required in support the assessed concept scheme. The traffic generation will nevertheless be revisited at subsequent development application stage/s.

7. ACCESS AND INTERNAL DESIGN ASPECTS

7.1 Site Vehicular Access

The concept development provides a total of 241 parking spaces (approx.) with access to Sarsfield Circuit, a local road. Under AS2890.1 (2004), a Category 2 driveway is required, being a combined entry and exit driveway of 6.0 to 9.0 meters. The driveway could also incorporate a median to facilitate a visitor intercom to ensure satisfactorily operation. The driveway will also accommodate 8.8m medium rigid vehicles. The proposed access driveway can be optimised further during later DA stage/s.

7.2 Internal Design

The internal car park should comply with the requirements of AS2890.1 (2004), AS2890.2 (2018) and AS2890.6 (2022), and the following characteristics are noteworthy:

7.2.1 Parking Modules

- All residential/employee car parking spaces are to be designed in accordance with User Class 1A. These spaces are provided with a minimum space length of 5.4m, a minimum width of 2.4m and a minimum aisle width of 5.8m.
- All hotel/pub visitor car parking spaces are to be designed in accordance with User Class 2. These spaces are provided with a minimum space length of 5.4m, a minimum width of 2.5m and a minimum aisle width of 5.8m.
- All retail/café visitor car parking spaces are to be designed in accordance with User Class 3. These spaces are provided with a minimum space length of 5.4m, a minimum width of 2.6m and a minimum aisle width of 5.8m.
- All accessible parking spaces are to be designed in accordance with AS2890.6 (2022), being 2.4m wide, 5.4m long and located adjacent to a dedicated shared area of the same dimensions.
- All spaces located adjacent to obstructions of greater than 150mm in height are to be provided with an additional width of 300mm and all columns are to be located outside of the parking space design envelope shown in Figure 5.2 of AS2890.1 (2004).

- Dead-end aisles are to be provided with the required 1.0m aisle extension in accordance with Figure 2.3 of AS2890.1 (2004).

7.2.2 Ramps

- All vehicle ramps accessed by retail visitors to have a maximum gradient of 20% (1 in 5) for up to 20 metres long, with a minimum 2.0 metre transition at 12.5% (1 in 8), in accordance with the public car park requirements of AS2890.1 (2004).
- All vehicle ramps accessed by residents/employees to have a maximum gradient of 25% (1 in 4) for up to 20 metres long, with a minimum 2.0 metre transition at 12.5% (1 in 8), in accordance with the residential car park requirements of AS2890.1 (2004).
- The access driveway is to have a maximum gradient of 1:20 (5%) extending from the property boundary line for at least 6.0m in accordance with AS2890 (2004).

7.2.3 Clear Head Heights

- A minimum clear head height of 2.2m is provided for all areas within the basement car park as required by AS2890.1 (2004).
- A minimum clear head height of 2.5m is to be provided above all accessible spaces in accordance with AS 2890.6 (2022).
- Head height clearances for roadways/loading docks accessed by service vehicles are to be provided in accordance with Table 2.1 of AS2890.2 (2018).

7.2.4 Loading/Service Bays

- All loading bays are to be designed to accommodate the largest vehicle in accordance with AS2890.2 (2018).
- Roadways/ramps accessed by waste/service vehicles are to be designed in accordance with Table 3.2 of AS2890.2 (2018).
- The maximum gradient for any part of the service bay shall be 1:25 (4%) measured in any direction including directions oblique to the bay centre-line as required by AS2890.2 (2018).

7.2.5 Other Considerations

- Visual splays are to be provided at the access driveway in accordance with Figure 3.3 of AS2890.1 (2004).
- Bicycle parking should be designed in accordance with AS2890.3 (2015).

7.3 Summary

In summary, the internal configuration of the car park should be designed in accordance with AS2890.1 (2004), AS2890.2 (2018) and AS2890.6 (2022). The car parking and service bay arrangements can be further optimised during future DA stage/s.

8. CONCLUSIONS

The following matters are noteworthy:

- The planning proposal seeks approval to vary the floor space ratio and building height controls for the site at 187 Slade Road, Bexley North. A concept scheme has been assessed which is representative of the site being developed to its full potential with these proposed changes, comprising of a mixed-use development with residential apartments, hotel rooms, retail, a pub, and café.
- The subject site is well connected to the public transport network with reliable access to regular bus and rail services. The site is located within 160 metres to Bexley North Railway Station and numerous bus stops, which ensures that the site is ideally situated for a mixed-use development as it provides a good opportunity to encourage future residents, employees, and visitors to use public transport modes.
- The concept scheme has been assessed to require 210 parking spaces under the SEPP 65 and Council DCP requirements. In response, concept plans demonstrate an ability to accommodate 241 parking spaces within three (3) basements levels, thus demonstrating that the site is able to accommodate all parking demands.
- The traffic generation arising from the development has been assessed as a net increase over existing conditions and equates to an additional 43 vehicle trips per hour during the morning peak period and 70 vehicle trips during the evening peak period. This is a worst-case assessment that does not take account of multi-purpose trips that occur in a mixed-use development. Nevertheless, SIDRA modelling demonstrates no unacceptable impacts, with no change in levels of service and minor increases in average delays at critical intersections.
- The parking and traffic impacts will be reassessed at future development application stages, based on committed uses and associated yields.
- The access and basement car park will be designed to comply with the requirements of AS2890 in order to ensure safe and efficient operation.
- The loading bay will be designed to accommodate the largest vehicle expected in accordance with AS2890.2 (2018).

It is therefore concluded that the planning proposal is supported on transport planning grounds and will operate satisfactorily, even based on the set of worst-case assumptions made for the concept development.

APPENDIX A

Plans

Disclaimer:
Information shown on this drawing should be read in conjunction with the specification and BASIX certificate where applicable. Comply with relevant authorities requirement. Comply with Building Code of Australia requirements. Comply with relevant Australian Standards for materials and construction practice. All drawn information should be sufficient for a reasonably competent and experienced builder to understand the design intent. Should this be not the case, the Client should be informed immediately for clarification. Some elements shown in this drawing may be subject to further advice from consultants/sub-consultants other than the architect. It is the responsibility of the consultants/sub-consultants/builder, and not the architect, to ensure that the design intent is met satisfactorily.

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Legend

- Hotel Accommodation
- Hotel Circulation
- Pub
- Retail
- Residential 1-Bed Apt
- Residential 2-Bed Apt
- Residential 3-Bed Apt
- Residential Circulation
- Basement / Plant / Services

Revision	Date	Description
A	25/08/2023	Final Draft Issue
B	31/08/2023	For Gateway Determination
C	04/09/2023	For Gateway Determination
D	06/09/2023	For Gateway Determination

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Nominated Architect Tai Kei Keith Ma NSW 9247

Client.
Tunborn Pty Ltd
(Trevor Yang)

Project Name.
BNH Mixed-Use Development

Project Address
187 Slade Road, Bexley North
NSW 2207

Project No.
2305

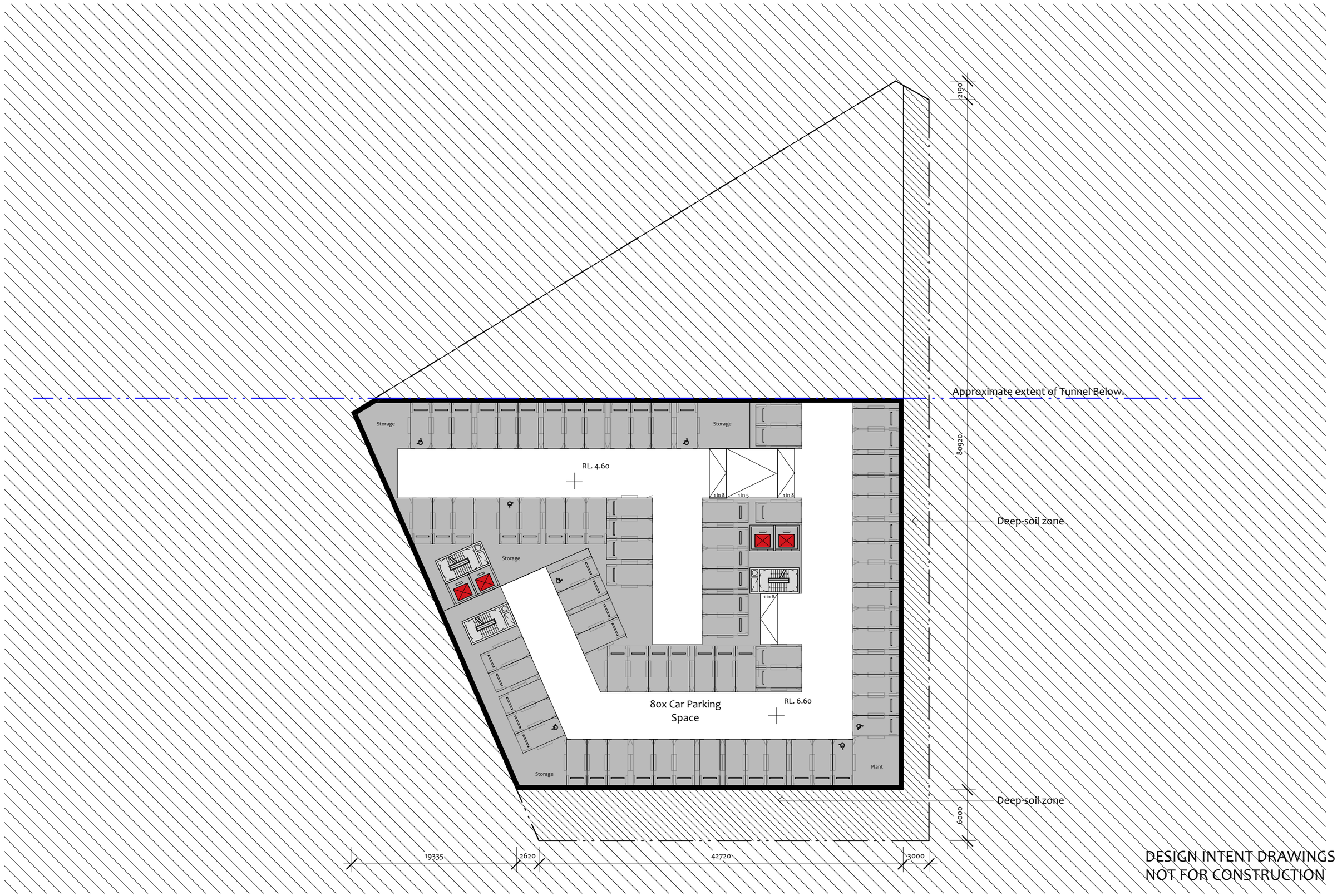
Sheet Name
Basement Level 01

Drawing no.
DA02.00

Status
Gateway Determination

Scale
1: 400 @ A3
0 4 8 12 m

Revision
D



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Legend
- Hotel Accommodation
- Hotel Circulation
- Pub
- Retail
- Residential 1-Bed Apt
- Residential 2-Bed Apt
- Residential 3-Bed Apt
- Residential Circulation
- Basement / Plant / Services

Revision	Date	Description
A	25/08/2023	Final Draft Issue
B	31/08/2023	For Gateway Determination
C	04/09/2023	For Gateway Determination
D	06/09/2023	For Gateway Determination

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Project Address
187 Slade Road, Bexley North
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Project No.
2305

Sheet Name
Basement Level 02

Drawing no.
DA02.01

Status
Gateway Determination

Scale
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0 4 8 12 m

Revision
D

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Legend

- Hotel Accommodation
- Hotel Circulation
- Pub
- Retail
- Residential 1-Bed Apt
- Residential 2-Bed Apt
- Residential 3-Bed Apt
- Residential Circulation
- Basement / Plant / Services

Revision	Date	Description
A	17/08/2023	For Coordination
B	25/08/2023	Final Draft Issue
C	31/08/2023	For Gateway Determination
D	04/09/2023	For Gateway Determination
E	06/09/2023	For Gateway Determination

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(Trevor Yang)

Project Name.
BNH Mixed-Use Development

Project Address
187 Slade Road, Bexley North
NSW 2207

Project No.
2305

Sheet Name
Lower Ground

Drawing no.
DA02.09

Status
Gateway Determination

Scale
1: 400 @ A3
0 4 8 12 m

Revision
E

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Legend
- Hotel Accommodation
- Hotel Circulation
- Pub
- Retail
- Residential 1-Bed Apt
- Residential 2-Bed Apt
- Residential 3-Bed Apt
- Residential Circulation
- Basement / Plant / Services

Revision	Date	Description
A	17/08/2023	For Coordination
B	25/08/2023	Final Draft Issue
C	31/08/2023	For Gateway Determination
D	04/09/2023	For Gateway Determination
E	06/09/2023	For Gateway Determination

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Project Name.
BNH Mixed-Use Development

Project Address
187 Slade Road, Bexley North
NSW 2207

Project No.
2305

Sheet Name
Ground Plan

Drawing no.
DA02.10

Status
Gateway Determination

Scale
1: 400 @ A3
0 4 8 12 m

Revision
E

APPENDIX B

SIDRA Outputs

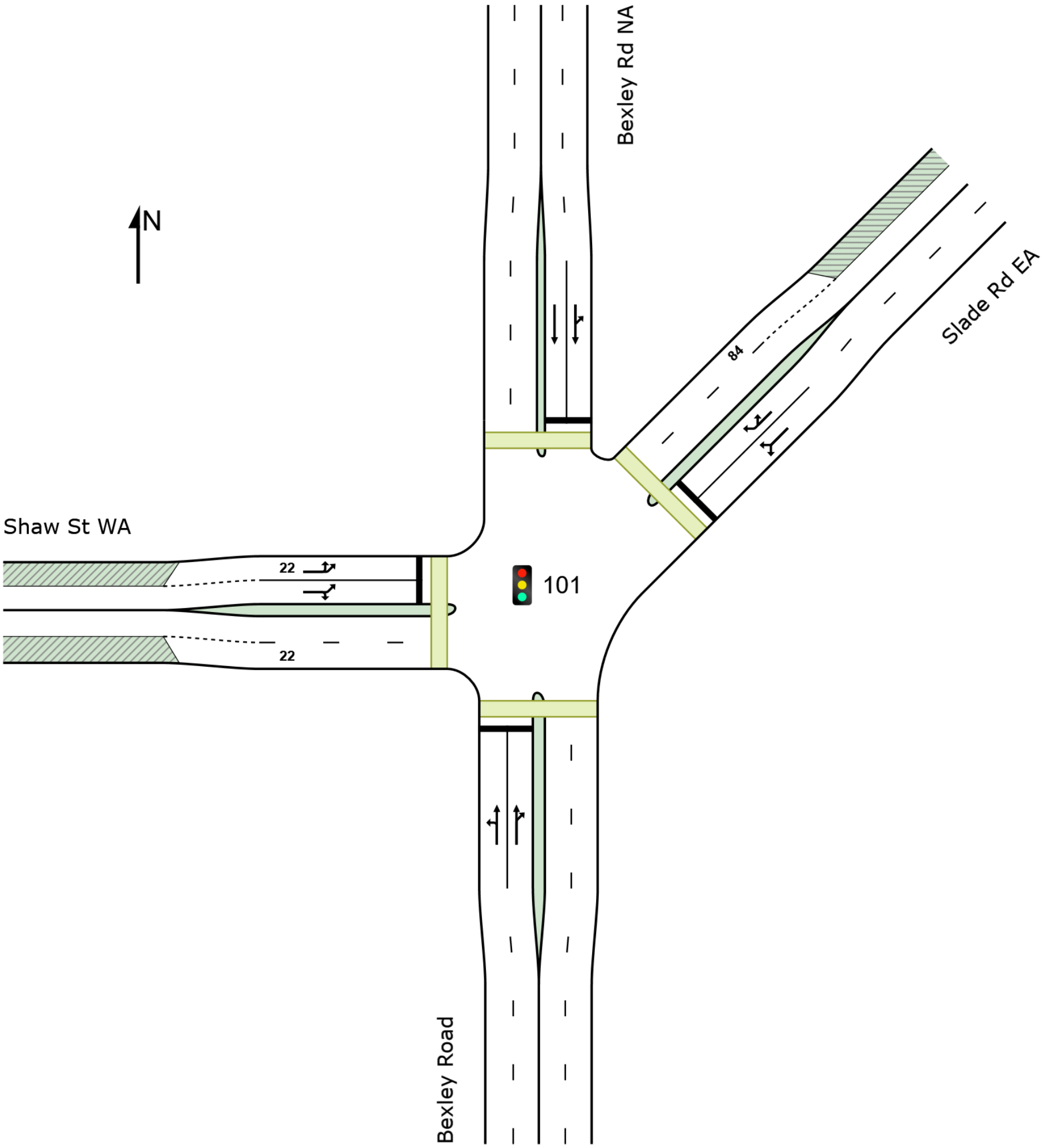
SITE LAYOUT

Site: 101 [101 Bexley Rd/ Slade Rd EX AM (Site Folder: Existing)]

Intersection: Bexley Rd, Slade Road and Shaw Street

Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



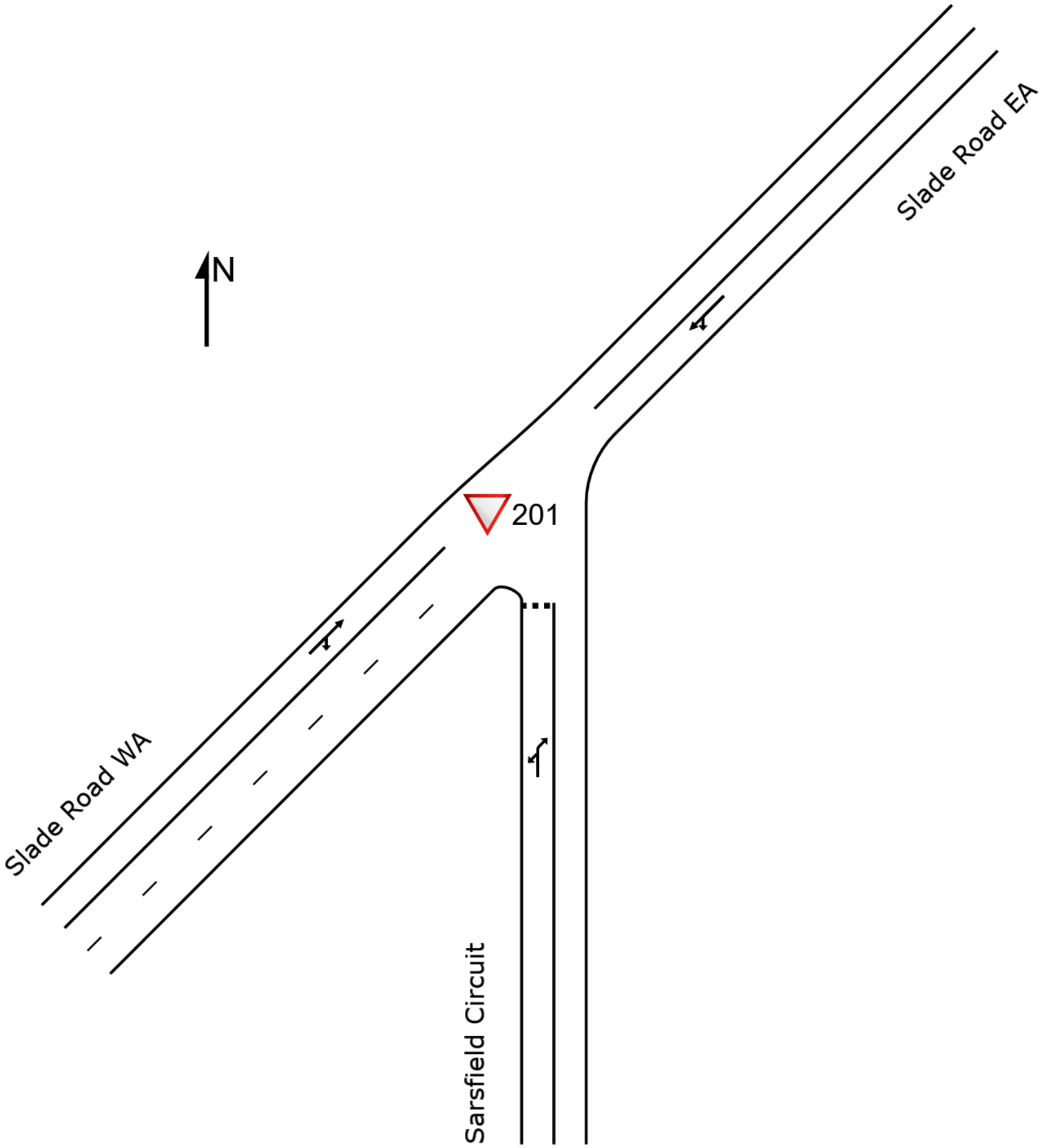
SITE LAYOUT

Site: 201 [201 Slade Rd/Sarsfield Circuit EX AM (Site Folder: Existing)]

Intersection: Slade Road and Sarsfield Circuit

Site Category: NA
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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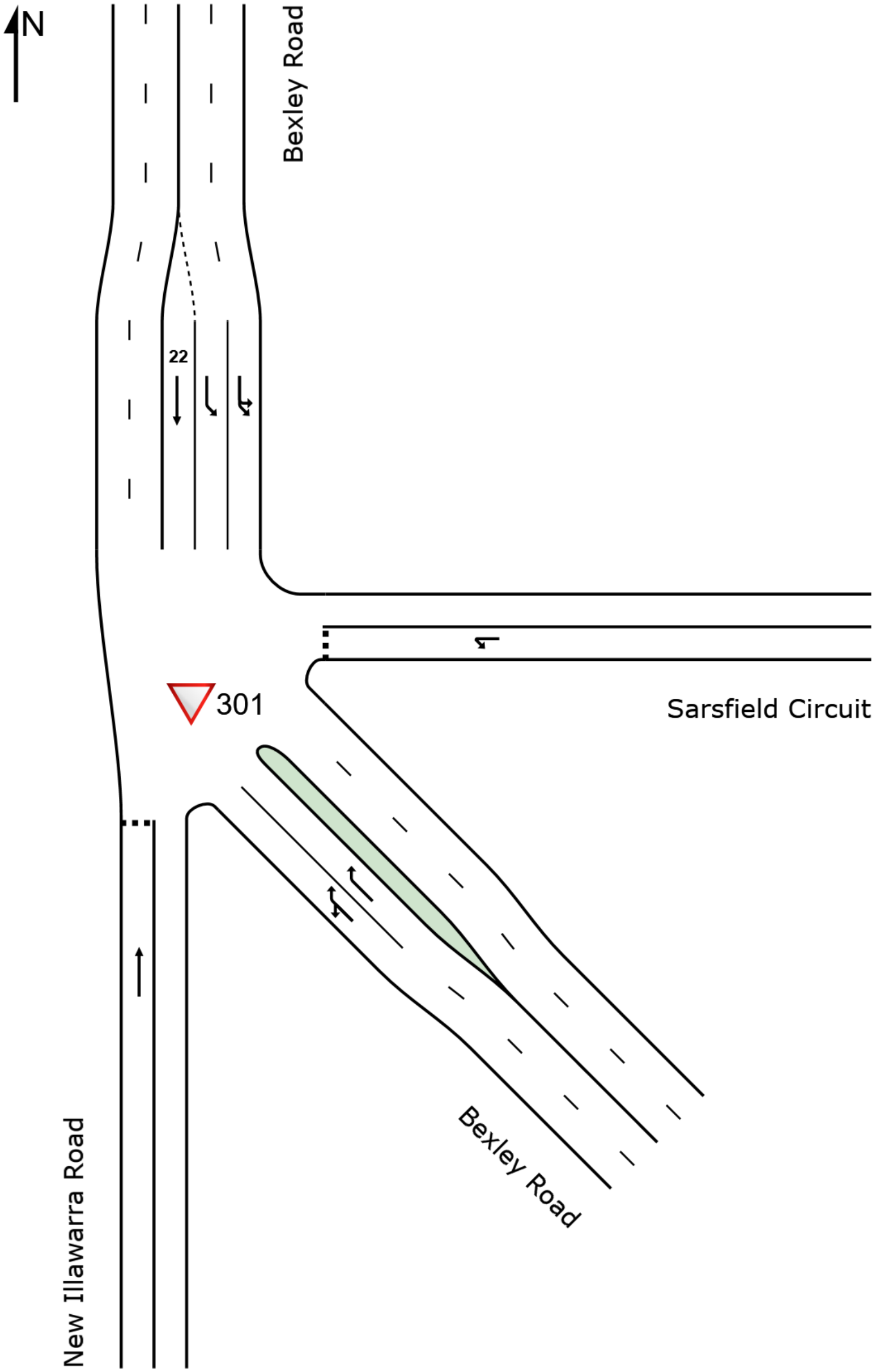
SITE LAYOUT

Site: 301 [301 Bexley Rd/Sarsfield Circuit EX AM (Site Folder: Existing)]

Intersection: Bexley Road and Sarsfield Circuit

Site Category: NA
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



USER REPORT FOR NETWORK SITE

Project: 17.091m02v01 TRAFFIX Bexley North Hotel

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summaries**

Site: 101 [101 Bexley Rd/ Slade Rd EX AM (Site Folder: Existing)] Network: 1 [1.EX_AM Network (Network Folder: Existing)]

Intersection: Bexley Rd, Slade Road and Shaw Street

Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: A-B-C-D
Input Phase Sequence: A, B, C, D, E*, F*
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bexley Road															
1	L2	All MCs	33	9.7	30	9.3	0.934	31.1	LOS C	24.9	179.5	1.00	1.07	1.18	24.3
2	T1	All MCs	1183	3.2	1090	3.1	0.934	48.7	LOS D	24.9	179.5	1.00	1.11	1.21	13.7
3a	R1	All MCs	162	2.6	149	2.5	* 0.934	108.6	LOS F	23.8	171.0	1.00	1.25	1.34	5.5
Approach			1378	3.3	1270	3.1	0.934	55.3	LOS D	24.9	179.5	1.00	1.12	1.22	12.9
NorthEast: Slade Rd															
24a	L1	All MCs	137	3.1	137	3.1	0.473	42.6	LOS D	9.3	66.5	0.93	0.80	0.93	8.1
26a	R1	All MCs	125	0.8	125	0.8	0.947	77.8	LOS F	17.2	123.7	0.98	1.01	1.28	19.3
26b	R3	All MCs	152	4.2	152	4.2	0.947	83.8	LOS F	17.2	123.7	1.00	1.11	1.46	9.4
Approach			414	2.8	414	2.8	0.947	68.4	LOS E	17.2	123.7	0.97	0.98	1.23	13.0
North: Bexley Rd															
7b	L3	All MCs	126	5.0	126	5.0	* 0.971	55.2	LOS D	45.9	334.1	1.00	1.22	1.36	6.3
8	T1	All MCs	1103	4.6	1103	4.6	* 0.971	78.0	LOS F	47.2	343.4	1.00	1.22	1.36	6.5
Approach			1229	4.6	1229	4.6	0.971	75.7	LOS F	47.2	343.4	1.00	1.22	1.36	6.5
West: Shaw St															
10	L2	All MCs	116	1.8	116	1.8	0.490	83.4	LOS F	6.4	45.7	0.94	0.79	0.94	23.3
10a	L1	All MCs	226	0.5	226	0.5	0.994	129.3	LOS F	22.1	156.9	1.00	1.25	1.60	13.7
12	R2	All MCs	45	7.0	45	7.0	* 0.994	131.7	LOS F	22.1	156.9	1.00	1.26	1.61	13.6
Approach			387	1.6	387	1.6	0.994	115.9	LOS F	22.1	156.9	0.98	1.12	1.40	16.0
All Vehicles			3408	3.5	3300	3.6	0.994	71.7	LOS F	47.2	343.4	0.99	1.14	1.30	11.1

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

* Critical Movement (Signal Timing)

Site: 201 [201 Slade Rd/Sarsfield Circuit EX AM (Site Folder: Existing)]

Network: 1 [1.EX_AM Network (Network Folder: Existing)]

Intersection: Slade Road and Sarsfield Circuit

Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Sarsfield Circuit															
1b	L3	All MCs	12	18.2	12	18.2	0.017	6.3	LOS A	0.1	0.5	0.36	0.55	0.36	37.3
3a	R1	All MCs	4	0.0	4	0.0	0.017	8.2	LOS A	0.1	0.5	0.36	0.55	0.36	43.3
Approach			16	13.3	16	13.3	0.017	6.8	LOS A	0.1	0.5	0.36	0.55	0.36	40.1
NorthEast: Slade Road															
24a	L1	All MCs	28	0.0	28	0.0	0.230	4.5	LOS A	0.0	0.0	0.00	0.04	0.00	47.8
25	T1	All MCs	394	2.1	394	2.1	0.230	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	49.5
Approach			422	2.0	422	2.0	0.230	0.4	NA	0.0	0.0	0.00	0.04	0.00	49.3
SouthWest: Slade Road															
31	T1	All MCs	475	2.2	463	2.2	0.249	0.0	LOS A	0.1	0.5	0.02	0.02	0.02	49.8
32b	R3	All MCs	7	0.0	7	0.0	0.249	8.6	LOS A	0.1	0.5	0.02	0.02	0.02	46.0
Approach			482	2.2	470	2.1	0.249	0.1	NA	0.1	0.5	0.02	0.02	0.02	49.8
All Vehicles			920	2.3	908	2.3	0.249	0.4	NA	0.1	0.5	0.01	0.04	0.01	49.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 301 [301 Bexley Rd/Sarsfield Circuit EX AM (Site Folder: Existing)]

Network: 1 [1.EX_AM Network (Network Folder: Existing)]

Intersection: Bexley Road and Sarsfield Circuit

Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New Illawarra Road															
2	T1	All MCs	256	4.9	256	4.9	1.977	903.0	LOS F	80.9	590.2	1.00	7.91	22.70	1.1
Approach			256	4.9	256	4.9	1.977	903.0	LOS F	80.9	590.2	1.00	7.91	22.70	1.1
SouthEast: Bexley Road															
21b	L3	All MCs	3	0.0	3	0.0	0.531	10.2	LOS A	33.0	236.0	0.50	0.70	0.65	41.4
23a	R1	All MCs	1084	2.7	1084	2.7	0.531	7.6	LOS A	33.0	236.0	0.51	0.70	0.66	37.7
Approach			1087	2.7	1087	2.7	0.531	7.6	NA	33.0	236.0	0.51	0.70	0.66	37.8
East: Sarsfield Circuit															
4b	L3	All MCs	29	0.0	29	0.0	0.030	7.2	LOS A	0.1	0.9	0.43	0.59	0.43	41.1
Approach			29	0.0	29	0.0	0.030	7.2	LOS A	0.1	0.9	0.43	0.59	0.43	41.1
North: Bexley Road															
7	L2	All MCs	13	8.3	13	8.3	0.239	5.6	LOS A	0.0	0.0	0.00	0.51	0.00	43.7
7a	L1	All MCs	856	5.0	856	5.0	0.239	4.5	LOS A	0.0	0.0	0.00	0.51	0.00	44.0
8	T1	All MCs	406	3.1	406	3.1	0.215	1.2	LOS A	0.0	0.0	0.00	0.20	0.00	56.4
Approach			1275	4.5	1275	4.5	0.239	3.4	NA	0.0	0.0	0.00	0.41	0.00	47.7
All Vehicles			2647	3.7	2647	3.7	1.977	92.1	NA	80.9	590.2	0.31	1.26	2.47	9.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

USER REPORT FOR NETWORK SITE

Project: 17.091m02v01 TRAFFIX Bexley North Hotel

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summaries**

Site: 103 [103 Bexley Rd/ Slade Rd EX+DEV AM (Site Folder: Future)] Network: 6 [1.EX+DEV_AM Network (Network Folder: Future)]

Intersection: Bexley Rd, Slade Road and Shaw Street

Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: A-B-C-D
Input Phase Sequence: A, B, C, D, E*, F*
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bexley Road															
1	L2	All MCs	33	9.7	30	9.3	0.944	34.0	LOS C	24.9	179.5	1.00	1.10	1.20	23.5
2	T1	All MCs	1183	3.2	1090	3.1	0.944	51.6	LOS D	24.9	179.5	1.00	1.13	1.23	13.2
3a	R1	All MCs	171	2.5	158	2.4	* 0.944	110.3	LOS F	24.2	173.6	1.00	1.26	1.37	5.3
Approach			1386	3.3	1278	3.1	0.944	58.4	LOS E	24.9	179.5	1.00	1.15	1.25	12.4
NorthEast: Slade Rd															
24a	L1	All MCs	137	3.1	137	3.1	0.492	43.1	LOS D	9.6	68.6	0.94	0.80	0.94	8.0
26a	R1	All MCs	126	0.8	126	0.8	0.985	86.6	LOS F	19.5	139.7	0.98	1.04	1.35	18.1
26b	R3	All MCs	163	3.9	163	3.9	0.985	97.6	LOS F	19.5	139.7	1.00	1.18	1.58	8.3
Approach			426	2.7	426	2.7	0.985	76.8	LOS F	19.5	139.7	0.97	1.02	1.31	11.9
North: Bexley Rd															
7b	L3	All MCs	128	4.9	128	4.9	* 0.976	57.2	LOS E	46.8	340.3	1.00	1.23	1.38	6.2
8	T1	All MCs	1107	4.6	1107	4.6	* 0.976	80.2	LOS F	48.1	350.0	1.00	1.24	1.38	6.3
Approach			1236	4.6	1236	4.6	0.976	77.8	LOS F	48.1	350.0	1.00	1.24	1.38	6.3
West: Shaw St															
10	L2	All MCs	116	1.8	116	1.8	0.493	83.6	LOS F	6.4	45.8	0.95	0.79	0.95	23.2
10a	L1	All MCs	228	0.5	228	0.5	1.000	132.6	LOS F	22.6	160.5	1.00	1.29	1.62	13.4
12	R2	All MCs	45	7.0	45	7.0	* 1.000	135.1	LOS F	22.6	160.5	1.00	1.30	1.63	13.3
Approach			389	1.6	389	1.6	1.000	118.3	LOS F	22.6	160.5	0.98	1.14	1.42	15.7
All Vehicles			3438	3.5	3329	3.6	1.000	75.0	LOS F	48.1	350.0	0.99	1.16	1.32	10.6

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

* Critical Movement (Signal Timing)

Site: 203 [203 Slade Rd/Sarsfield Circuit EX+DEV AM (Site Folder: Future)]

Network: 6 [1.EX+DEV_AM Network (Network Folder: Future)]

Intersection: Slade Road and Sarsfield Circuit

Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Sarsfield Circuit															
1b	L3	All MCs	24	8.7	24	8.7	0.035	6.7	LOS A	0.1	0.9	0.36	0.58	0.36	39.1
3a	R1	All MCs	8	0.0	8	0.0	0.035	8.9	LOS A	0.1	0.9	0.36	0.58	0.36	46.3
Approach			33	6.5	33	6.5	0.035	7.3	LOS A	0.1	0.9	0.36	0.58	0.36	42.4
NorthEast: Slade Road															
24a	L1	All MCs	31	0.0	31	0.0	0.246	4.5	LOS A	0.0	0.0	0.00	0.04	0.00	47.8
25	T1	All MCs	394	2.1	394	2.1	0.246	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	49.5
Approach			424	2.0	424	2.0	0.246	0.4	NA	0.0	0.0	0.00	0.04	0.00	49.3
SouthWest: Slade Road															
31	T1	All MCs	475	2.2	463	2.2	0.262	0.0	LOS A	0.2	1.3	0.05	0.07	0.05	49.5
32b	R3	All MCs	21	0.0	21	0.0	0.262	10.9	LOS A	0.2	1.3	0.05	0.07	0.05	48.1
Approach			496	2.1	484	2.1	0.262	0.5	NA	0.2	1.3	0.05	0.07	0.05	49.5
All Vehicles			953	2.2	941	2.2	0.262	0.7	NA	0.2	1.3	0.04	0.07	0.04	49.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 303 [303 Bexley Rd/Sarsfield Circuit EX+DEV AM (Site Folder: Future)]

Network: 6 [1.EX+DEV_AM Network (Network Folder: Future)]

Intersection: Bexley Road and Sarsfield Circuit

Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New Illawarra Road															
2	T1	All MCs	256	4.9	256	4.9	2.036	957.0	LOS F	83.2	607.0	1.00	8.04	23.15	1.0
Approach			256	4.9	256	4.9	2.036	957.0	LOS F	83.2	607.0	1.00	8.04	23.15	1.0
SouthEast: Bexley Road															
21b	L3	All MCs	3	0.0	3	0.0	0.540	10.3	LOS A	35.6	254.8	0.50	0.71	0.66	41.3
23a	R1	All MCs	1093	2.7	1093	2.7	0.540	7.7	LOS A	35.6	254.8	0.52	0.71	0.67	37.6
Approach			1096	2.7	1096	2.7	0.540	7.7	NA	35.6	254.8	0.52	0.71	0.67	37.6
East: Sarsfield Circuit															
4b	L3	All MCs	38	0.0	38	0.0	0.039	7.4	LOS A	0.2	1.2	0.43	0.61	0.43	41.7
Approach			38	0.0	38	0.0	0.039	7.4	LOS A	0.2	1.2	0.43	0.61	0.43	41.7
North: Bexley Road															
7	L2	All MCs	17	6.3	17	6.2	0.241	5.6	LOS A	0.0	0.0	0.00	0.51	0.00	44.1
7a	L1	All MCs	856	5.0	856	5.0	0.241	4.5	LOS A	0.0	0.0	0.00	0.51	0.00	44.0
8	T1	All MCs	406	3.1	406	3.1	0.215	1.2	LOS A	0.0	0.0	0.00	0.20	0.00	56.4
Approach			1279	4.4	1279	4.4	0.241	3.4	NA	0.0	0.0	0.00	0.41	0.00	47.7
All Vehicles			2668	3.7	2668	3.7	2.036	96.7	NA	83.2	607.0	0.31	1.27	2.50	8.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 102 [102 Bexley Rd/ Slade Rd EX PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [2.EX_PM Network (Network Folder: Existing)]

Intersection: Bexley Rd, Slade Road and Shaw Street

Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bexley Road															
1	L2	All MCs	21	10.0	20	9.7	0.852	19.1	LOS B	24.9	179.5	0.93	0.88	0.96	30.3
2	T1	All MCs	1066	3.6	1018	3.5	0.852	30.6	LOS C	24.9	179.5	0.94	0.93	1.00	18.8
3a	R1	All MCs	142	2.2	136	2.2	* 0.852	90.5	LOS F	18.6	133.3	1.00	1.13	1.19	6.7
Approach			1229	3.5	1174	3.4	0.852	37.4	LOS C	24.9	179.5	0.95	0.95	1.02	17.2
NorthEast: Slade Rd															
24a	L1	All MCs	179	1.2	179	1.2	0.412	39.9	LOS C	10.1	71.4	0.87	0.79	0.87	9.1
26a	R1	All MCs	166	0.6	166	0.6	0.825	59.7	LOS E	16.9	118.9	0.98	0.92	1.11	22.0
26b	R3	All MCs	139	0.0	139	0.0	0.825	61.9	LOS E	16.9	118.9	1.00	0.95	1.16	12.0
Approach			484	0.7	484	0.7	0.825	53.0	LOS D	16.9	118.9	0.95	0.88	1.04	15.8
North: Bexley Rd															
7b	L3	All MCs	187	2.2	187	2.2	* 0.844	23.6	LOS B	36.0	257.2	0.98	0.96	1.05	10.5
8	T1	All MCs	1128	2.7	1128	2.7	* 0.844	45.0	LOS D	37.9	271.3	0.99	0.95	1.05	10.8
Approach			1316	2.6	1316	2.6	0.844	41.9	LOS C	37.9	271.3	0.98	0.95	1.05	10.7
West: Shaw St															
10	L2	All MCs	60	0.0	60	0.0	0.375	76.3	LOS F	4.3	30.2	0.97	0.77	0.97	22.0
10a	L1	All MCs	123	0.9	123	0.9	0.760	78.6	LOS F	8.9	63.2	1.00	0.89	1.13	18.7
12	R2	All MCs	40	5.3	40	5.3	* 0.760	80.8	LOS F	8.9	63.2	1.00	0.91	1.15	18.6
Approach			223	1.4	223	1.4	0.760	78.4	LOS F	8.9	63.2	0.99	0.86	1.09	19.6
All Vehicles			3253	2.6	3197	2.6	0.852	44.5	LOS D	37.9	271.3	0.97	0.93	1.04	14.9

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Bexley Road											
P1	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	70.9	20.0	0.28
NorthEast: Slade Rd											
P6	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	70.9	20.0	0.28
North: Bexley Rd											
P3	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	70.9	20.0	0.28
West: Shaw St											
P4	Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	70.9	20.0	0.28
All Pedestrians		211	54.3	LOS E	0.2	0.2	0.95	0.95	70.9	20.0	0.28

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

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USER REPORT FOR NETWORK SITE

Project: 17.091m02v01 TRAFFIX Bexley North Hotel

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summaries**

Site: 104 [104 Bexley Rd/ Slade Rd EX+DEV PM (Site Folder: Future)] Network: 7 [2.EX+DEV_PM Network (Network Folder: Future)]

Intersection: Bexley Rd, Slade Road and Shaw Street

Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: A-B-C-D
Input Phase Sequence: A, B, C, D, E*, F*
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Bexley Road															
1	L2	All MCs	21	10.0	20	9.7	0.873	21.7	LOS B	24.9	179.5	0.95	0.92	1.01	29.2
2	T1	All MCs	1066	3.6	1015	3.5	0.873	33.0	LOS C	24.9	179.5	0.96	0.96	1.04	18.0
3a	R1	All MCs	157	2.0	150	1.9	* 0.873	91.3	LOS F	18.5	132.4	1.00	1.15	1.23	6.3
Approach			1244	3.5	1185	3.4	0.873	40.2	LOS C	24.9	179.5	0.96	0.98	1.07	16.3
NorthEast: Slade Rd															
24a	L1	All MCs	179	1.2	179	1.2	0.428	39.8	LOS C	10.3	73.0	0.88	0.79	0.88	9.1
26a	R1	All MCs	167	0.6	167	0.6	0.855	61.9	LOS E	18.0	126.7	0.98	0.94	1.14	21.6
26b	R3	All MCs	151	0.0	151	0.0	0.855	64.7	LOS E	18.0	126.7	1.00	0.98	1.20	11.6
Approach			497	0.6	497	0.6	0.855	54.8	LOS D	18.0	126.7	0.95	0.90	1.06	15.5
North: Bexley Rd															
7b	L3	All MCs	194	2.2	194	2.2	* 0.856	24.7	LOS B	37.1	265.6	0.99	0.98	1.07	10.3
8	T1	All MCs	1140	2.7	1140	2.7	* 0.856	46.3	LOS D	39.2	280.4	0.99	0.96	1.07	10.5
Approach			1334	2.6	1334	2.6	0.856	43.2	LOS D	39.2	280.4	0.99	0.96	1.07	10.5
West: Shaw St															
10	L2	All MCs	60	0.0	60	0.0	0.379	76.7	LOS F	4.4	30.6	0.97	0.77	0.97	22.0
10a	L1	All MCs	125	0.8	125	0.8	0.768	79.2	LOS F	9.0	64.0	1.00	0.89	1.13	18.7
12	R2	All MCs	40	5.3	40	5.3	* 0.768	81.5	LOS F	9.0	64.0	1.00	0.91	1.16	18.6
Approach			225	1.4	225	1.4	0.768	79.0	LOS F	9.0	64.0	0.99	0.86	1.09	19.6
All Vehicles			3300	2.6	3241	2.6	0.873	46.4	LOS D	39.2	280.4	0.97	0.95	1.07	14.5

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

* Critical Movement (Signal Timing)

Site: 204 [204 Slade Rd/Sarsfield Circuit EX+DEV PM (Site Folder: Future)]

Network: 7 [2.EX+DEV_PM Network (Network Folder: Future)]

Intersection: Slade Road and Sarsfield Circuit

Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Sarsfield Circuit															
1b	L3	All MCs	20	0.0	20	0.0	0.028	6.7	LOS A	0.1	0.7	0.37	0.58	0.37	39.5
3a	R1	All MCs	7	0.0	7	0.0	0.028	8.7	LOS A	0.1	0.7	0.37	0.58	0.37	46.8
Approach			27	0.0	27	0.0	0.028	7.3	LOS A	0.1	0.7	0.37	0.58	0.37	42.9
NorthEast: Slade Road															
24a	L1	All MCs	43	0.0	43	0.0	0.255	4.5	LOS A	0.0	0.0	0.00	0.05	0.00	47.8
25	T1	All MCs	424	1.2	424	1.2	0.255	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	49.5
Approach			467	1.1	467	1.1	0.255	0.5	NA	0.0	0.0	0.00	0.05	0.00	49.2
SouthWest: Slade Road															
31	T1	All MCs	398	2.6	392	2.6	0.234	0.0	LOS A	0.3	1.8	0.08	0.11	0.08	49.2
32b	R3	All MCs	28	0.0	28	0.0	0.234	11.5	LOS A	0.3	1.8	0.08	0.11	0.08	48.2
Approach			426	2.5	420	2.4	0.234	0.8	NA	0.3	1.8	0.08	0.11	0.08	49.2
All Vehicles			921	1.7	915	1.7	0.255	0.8	NA	0.3	1.8	0.05	0.09	0.05	49.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 304 [304 Bexley Rd/Sarsfield Circuit EX+DEV PM (Site Folder: Future)]

Network: 7 [2.EX+DEV_PM Network (Network Folder: Future)]

Intersection: Bexley Road and Sarsfield Circuit

Site Category: NA
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New Illawarra Road															
2	T1	All MCs	239	5.3	239	5.3	1.421	404.5	LOS F	47.3	346.0	1.00	5.57	15.05	2.3
Approach			239	5.3	239	5.3	1.421	404.5	LOS F	47.3	346.0	1.00	5.57	15.05	2.3
SouthEast: Bexley Road															
21b	L3	All MCs	7	0.0	7	0.0	0.476	10.5	LOS A	21.0	148.8	0.51	0.73	0.66	41.2
23a	R1	All MCs	1047	1.5	1047	1.5	0.476	7.9	LOS A	21.0	148.8	0.52	0.73	0.67	37.3
Approach			1055	1.5	1055	1.5	0.476	7.9	NA	21.0	148.8	0.52	0.73	0.67	37.4
East: Sarsfield Circuit															
4b	L3	All MCs	48	0.0	48	0.0	0.049	7.4	LOS A	0.2	1.5	0.43	0.61	0.43	41.7
Approach			48	0.0	48	0.0	0.049	7.4	LOS A	0.2	1.5	0.43	0.61	0.43	41.7
North: Bexley Road															
7	L2	All MCs	20	0.0	20	0.0	0.236	5.5	LOS A	0.0	0.0	0.00	0.51	0.00	45.5
7a	L1	All MCs	851	3.6	851	3.6	0.236	4.5	LOS A	0.0	0.0	0.00	0.51	0.00	44.2
8	T1	All MCs	501	1.5	501	1.5	0.261	1.2	LOS A	0.0	0.0	0.00	0.20	0.00	56.4
Approach			1372	2.8	1372	2.8	0.261	3.3	NA	0.0	0.0	0.00	0.40	0.00	48.5
All Vehicles			2714	2.4	2714	2.4	1.421	40.5	NA	47.3	346.0	0.30	0.99	1.59	17.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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