TRAFFIC IMPACT ASSESSMENT

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

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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 on this site 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 amalgamated Bayside Council Local Government Area (LGA), formerly Rockdale City Council and has been assessed under that council's controls.

A two (2) stage concept scheme has been prepared by GMU Urban Design & Architecture, consisting of residential apartments, hotel rooms, retail, a hotel (pub), gym and café. This report assesses the traffic impacts and parking requirements arising from this 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 Statement of Environmental Effects (SEE) prepared separately. The proposed access is located over 90 metres to a classified road and therefore does not require referral to the RMS under the provisions of State Environmental Planning Policy (SEPP) (Infrastructure) 2007.

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 Error! Reference source not found., with a Site Plan presented in **Figure 2**. Reference should also be made to the Photographic Record presented in **Appendix A** which provides an appreciation of the site and surrounding road network.

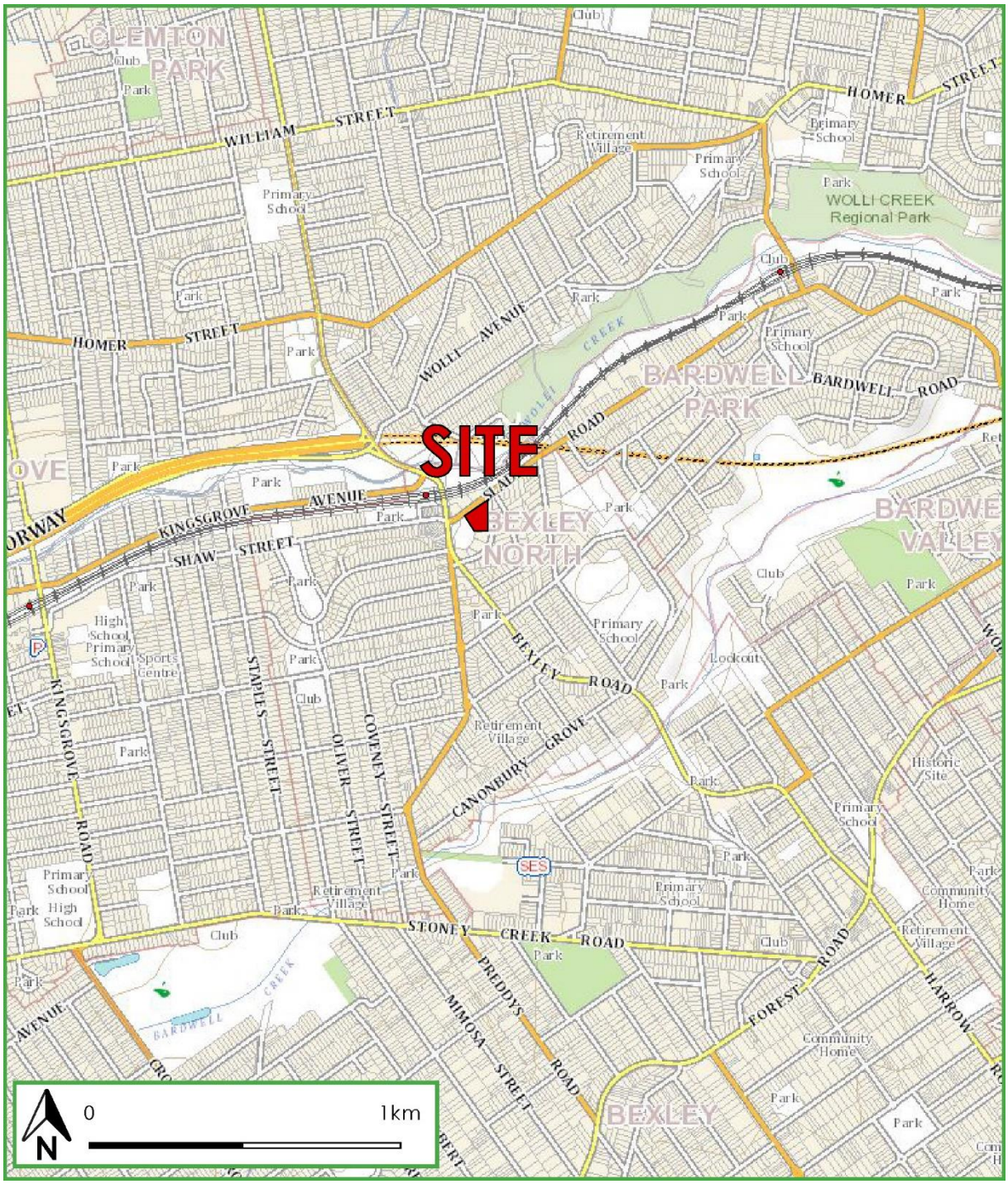


Figure 1: Location Plan

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: an RMS classified State Road (MR 169) that generally runs in a north-south direction between Canterbury Road in the north and Forest Road in the south. It carries approximately 34,200 vpd in the vicinity of the site and is generally subject to 60km/h speed zoning. Bexley Road carries two (2) lanes of traffic in both directions within a divided carriageway.
- Slade Road: an unclassified regional road (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 is subject to a 50km/h speed zoning and unrestricted kerbside parking is permitted on the western side of the road only; whilst the eastern side is subject to 'No Parking' restrictions. In addition, the intersection of Bexley Road and Sarsfield Circuit is restricted to a left-in/left-out arrangement.

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.

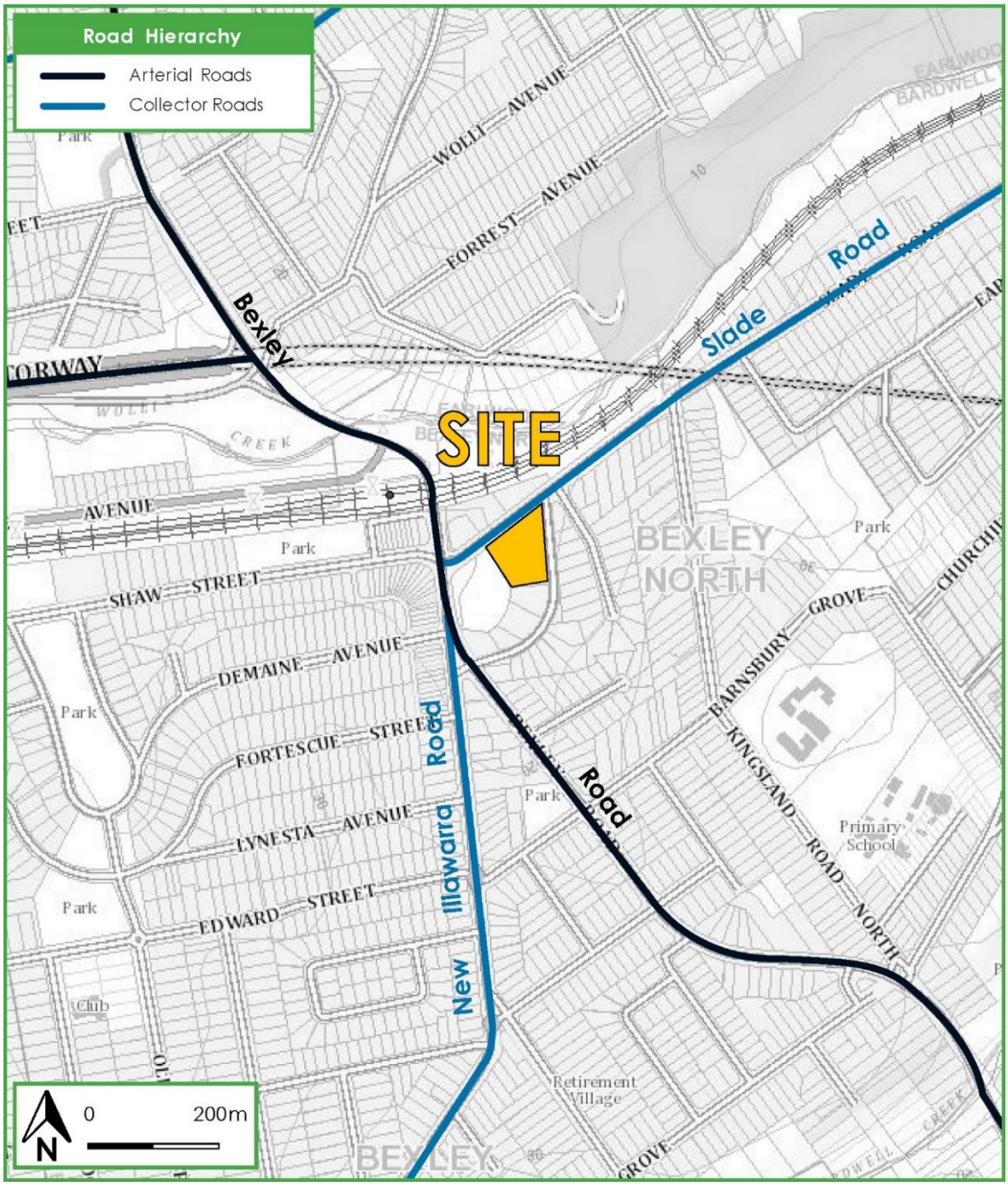


Figure 3: Road Hierarchy

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 bus routes (M40, 446, 400, 491 and 493) providing connections to urban centres such as Rockdale, Drummoyne, Roselands, Kogarah, Five Dock, Hurstville, Burwood and Bondi Junction.

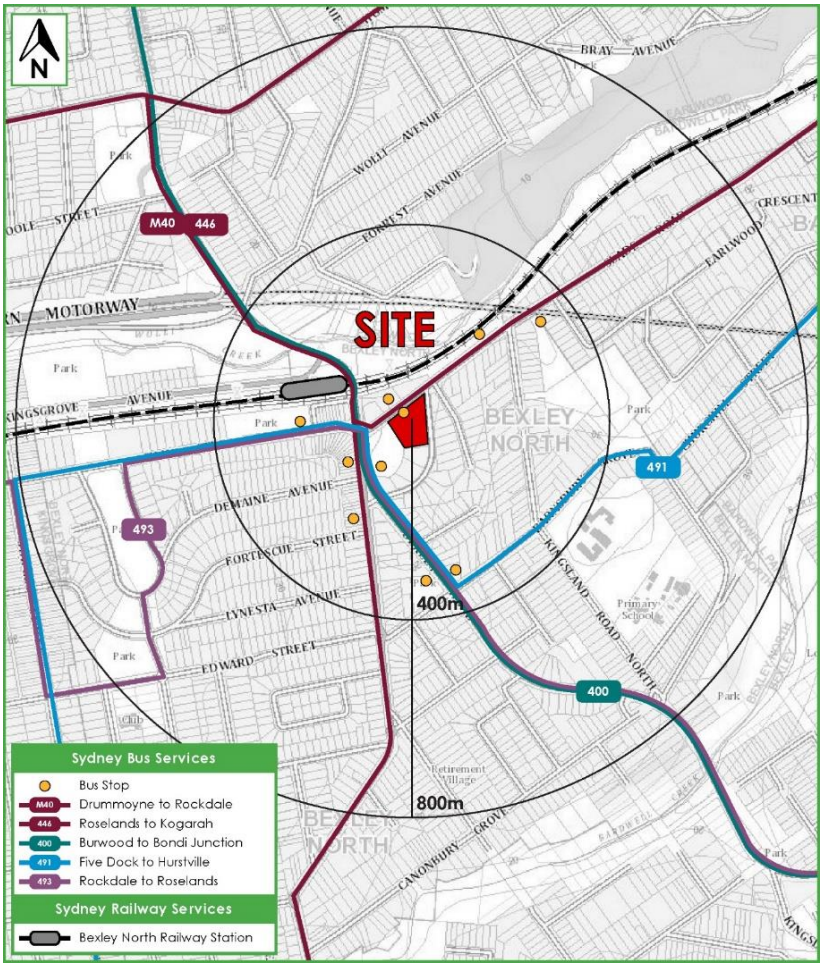


Figure 4: Public Transport

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 (Source: NearMap)

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 turn is permitted from the northbound direction on Bexley Road onto Slade Road.

Slade Road

- The westbound approach provides two (2) through lanes with left turns onto Bexley Road permitted from the left lane and right turns onto Bexley Road permitted from the right lane.

- Shaw Street
  - The eastbound approach provides two (2) through lanes with left turns onto Bexley Road permitted from the left lane and right turns onto Bexley Road permitted from the right lane.

3.4.2 Bexley Road and Sarsfield Circuit

Figure 6: Intersection of Bexley Road and Sarsfield Circuit (Source: NearMap)

It can be seen from **Figure 6** that the intersection of Bexley Road and Sarsfield Circuit is a three-legged T-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 left turns onto Sarsfield Circuit permitted from the left lane.
- Sarsfield Circuit

- The westbound approach provides a single lane and permits left turns onto Bexley Road. Right turns onto Bexley Road are not permitted.

3.4.3 Slade Road and Sarsfield Circuit

Figure 7: Intersection of Slade Road and Sarsfield Circuit (Source: NearMap)

It can be seen from **Figure 7** 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
  - The northbound approach provides a single through lane and permits left and right turns onto Slade Road.
- Slade Road (east and west legs)
  - The eastbound approach provides a single lane and permits left and right turns onto Sarsfield Circuit.
  - The westbound approach provides a single lane and permits left and right turns onto Sarsfield Circuit.

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 two (2) staged 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:

- 83 residential apartments comprising the following:
  - 24 x one-bedroom apartments
  - 38 x two-bedroom apartments; and
  - 21 x three-bedroom apartments.
- 2,656m^2 of hotel GFA (60 rooms);
- 2,060m^2 of pub GFA;
- 287m^2 of retail GFA;
- 297m^2 of gym GFA;
- 160m^2 of café GFA; and
- Three (3) basement levels accommodating approximately 214 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 to Council which are presented at reduced scale in **Appendix B**.

5. PARKING REQUIREMENTS

5.1 Car Parking

5.1.1 Residential – Council Controls

The Rockdale Council Development Control Plan (DCP) 2011, Part 4.6 Car Parking, Access and Movement requires high density residential developments to provide car parking in accordance with **Table 1** below:

Table 1: Council Parking Rates

Type	Units	Minimum Parking Rate	Minimum Spaces Required
1 Bed	24	1.0 spaces per unit	24
2 Bed	38	1.0 spaces per unit	38
3+ Bed	21	2.0 spaces per unit	42
Residential Visitor	83	1.0 space per 5 units	17
Total			**121**

5.1.2 Residential - SEPP 65 Controls

The SEPP 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 Roads and Maritimes Services Guide to Traffic Generating Developments (RMSGTGD) for high density residential developments within 'metropolitan sub-regional centres'. RMSGTGD parking requirements are outlined in the **Table 2** below:

Table 2: Roads and Maritime Services (SEPP 65) Parking Rates

Type	Units	Minimum Parking Rate	Minimum Spaces Required
1 Bed	24	0.6 spaces per unit	14
2 Bed	38	0.9 spaces per unit	34
3+ Bed	21	1.4 spaces per unit	29
Residential Visitor	83	1.0 space per 5-7 units	17
Total			**94**

It can be seen from **Table 1** and **Table 2** that the proposed development is required to provide a minimum of 94 residential parking spaces, being the lesser of the DCP and RMS guide requirements, in accordance with SEPP 65.

5.1.3 Retail / Hotel / Pub

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 Roads and Maritime Services (RMS) 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	60	1 space per 4 rooms	15
Pub	2,060m^2	1 space per 26m^2 GFA[1]	80
Retail	287 m^2	1 space per 40m^2 GFA	8
Café	160 m^2	1 space per 40m^2 GFA	4
Total			**107**

[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 107 parking spaces are required for the hotel, pub, retail and café components of the development, in accordance with Council's DCP.

5.1.4 Gym

The RMSGTGD requires gymnasiums developments within 'metropolitan sub-regional centres' to provide a minimum of 4.5 spaces per 100m^2 GFA. The development proposes a gym of 297m^2 GFA. Therefore, a parking provision of 13 spaces is required to satisfy the RMS requirements.

5.1.5 Total Car Parking Requirement

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	Minimum Parking Rate	Minimum Spaces Required[2]
Residential Component (SEPP 65)			
1 Bed	24	0.6 spaces per unit	14
2 Bed	38	0.9 spaces per unit	34
3+ Bed	21	1.4 spaces per unit	29
Residential Visitor	83	1.0 space per 5-7 units	17
		Sub-Total	**94**
Other Land Uses (DCP & RMS)			
Hotel Rooms	60	1 space per 4 rooms	15
Pub	2,060m^2	1 space per 26m^2 GFA[1]	80
Retail	287m^2	1 space per 40m^2 GFA	8
Gym	297m^2	4.5 spaces per 100m^2 GFA	13
Café	160m^2	1 space per 40m^2 GFA	4
		Sub-Total	**120**
		Total	**214**

[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 214 spaces, in compliance with the SEPP 65, Council's DCP and RMSGTGD, as appropriate. In response, the concept plans show approximately 214 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

5.2.1 Residential

Part 4.6 Car Parking, Access and Movement of Council's DCP requires the proposed development to provide one (1) accessible space per adaptable dwelling. Details relating to the number and location of accessible parking spaces for the residential component of the proposed development will be determined at future development applications stage/s, at which time, the parking arrangement will be optimised.

5.2.2 Hotel

The Building Code of Australia (BCA) requires Class 3 buildings to provide accessible parking in accordance with the statement below:

> *"To be calculated by multiplying the total number of carparking spaces by the percentage of:*
>
> *a) Accessible sole-occupancy units to the total number of sole-occupancy units; or*
> *b) Accessible bedrooms to the total number of bedrooms; and*
>
> *the calculated number is to be taken to the next whole figure."*

Details relating to the number and location of accessible parking spaces for the hotel component of the proposed development will be determined at future development applications stage/s, at which time, the parking arrangement will be optimised.

5.2.3 Hotel Licensed Area (Pub)

The Building Code of Australia (BCA) requires Class 9b (assembly buildings) to provide one (1) accessible space for every 50 car parking spaces or part thereof up to 1,000 car parking spaces. Details relating to the number and location of accessible parking spaces for the pub component of the proposed development will be determined at future development applications stage/s, at which time, the parking arrangement will be optimised.

5.2.4 Retail/Gym/Café

The Building Code of Australia (BCA) requires Class 6 buildings to provide one (1) accessible space for every 50 car parking spaces or part thereof up to 1,000 car parking spaces. Details relating to the number and location of accessible parking spaces for the retail/gym/café components of the proposed development will be determined at future development applications stage/s, at which time, the parking arrangement will be optimised.

5.3 Bicycle Parking

5.3.1 All Uses

Part 4.6 Car Parking, Access and Movement of Council's DCP requires mixed-use developments to provide bicycle parking in accordance with the rates shown in **Table 5**:

Table 5: Council Bicycle Parking Rates

Type	Employee / Staff Parking Rates	Visitor / Shopper Parking Rates
Residential	1 space per 10 units	NA
Retail	1 space per 200m2 GFA	15% to be accessible by visitors
Gym (Indoor recreation facility)	1 space per 200m2 GFA	15% to be accessible by visitors
Café (Restaurant)	1 space per 200m2 GFA	15% to be accessible by visitors

Details relating to the number and location of bicycle parking spaces for the proposed development will be determined at future development applications stage/s, at which time, the parking arrangement will be optimised.

5.4 Motorcycle Parking

Council's DCP requires mixed-use developments to provide motorcycle parking in accordance with the rates shown in **Table 6**:

Table 6: Council Motorcycle Parking Rates

Type	Parking Rates
Residential	1 space per 15 units
Retail	1 space per 20 car spaces
Gym	1 space per 20 car spaces
Café (Restaurants)	1 space per 20 car spaces

Details relating to the number and location of motorcycle parking spaces for the proposed development will be determined at future development applications stage/s, at which time, the parking arrangement will be optimised.

5.5 Car Wash Bay

Council's DCP requires buildings with 5 dwellings or more to provide at least one (1) visitor car parking space to be equipped with car wash facilities.

5.6 Refuse Collection and Servicing

The Rockdale Council Technical Specification – Traffic, Parking and Access 2011 requires mixed-use developments to provide off-street service bays in accordance with the **Table 7, 8** and **9** below:

Table 7: Council Service Bay Requirements - Residential

Number of Units	Service Bays Required			
	Van	SRV	MRV	HRV
0-9	1[1]	-	-	-
10-49	-	1[2]	-	-
50-99	-	1	1	-
100-149	-	2	1	-
150-249	1	2	1	1
250-500	1	2	2	1
500 and over	2	2	2	1

[1] The van space may be shared with visitor parking or service bay for retail/commercial/business in a shop top housing development.

[2] The SRV space may be shared with a service bay for retail/commercial/business in a shop top housing development.

Table 8: Council Service Bay Requirements – Retail

Gross Floor Area (m^2)	Service Bays Required				
	Van	SRV	MRV	HRV	AV
0-199	1	-	-	-	-
199-999	-	1	-	-	-
1,000-2,999	1	-	1	-	-
3,000-4,499	1	1	1	-	-
4,500-5,999	2	1	1	-	-
6,000-8,999	3	2	2	1	1
9,000-14,999	5	3	3	1	1
15,000-26,999	6	3	3	2	2
27,000-39,999	8	3	4	3	2
40,000 and over	"Subject to study" under DCP				

Table 9: Council Service Bay Requirements – Hotel/Motel

Number of Rooms	Service Bays Required			
	Van	SRV	MRV	HRV
0-199	1	-	1	-
200-399	1	-	1	1
400-599	1	1	1	1
600 and over	1	2	1	1

In accordance with Council's DCP, one (1) van bay, two (2) SRV bays and two (2) MRV bays are required. As noted above, the DCP states that the van space may be shared with a visitor parking space and the MRV space can be shared between the residential and retail components for a shop-top development.

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 a 6.4m long Small Rigid Vehicle. The development proposes to engage a private contractor for waste collection. The loading area also provides an SRV turntable to ensure that service vehicles can enter and leave the site in a forward direction.

To satisfy any concerns, a Loading Dock Management Plan (LDMP) is invited as a condition of consent, requiring approval prior to the release of an occupation certificate, if deemed necessary by Council. 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 Hotel Licensed Area (Pub)

The Roads and Maritime Guide to Traffic Generating Developments (RMSGTGD) 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 RMS 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 RMS Guide for this type of development and in any event, such a rate would not be as accurate or reliable. As such, the RMS 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 per hour during the evening peak hour (18 in, 17 out)

6.1.2 Hotel

The RMSGTGD 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 per hour during the morning peak hour (1 in, 6 out)
- 7 vehicle trips per hour 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 per hour during the morning peak hour (1 in, 6 out)
- 42 vehicle trips per hour 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 RMSGTGD and as such, the traffic generation rates published in the RMS Guide have been adopted for each individual land use. The result of this assessment is summarised below.

6.2.1 Residential

In August 2013, RMS 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 83 residential units proposed, and adopting an 80:20 split, results in the following generation:

- 16 vehicle trips per hour during the morning peak hour (3 in, 13 out)
- 12 vehicle trips per hour during the evening peak hour. (10 in, 2 out)

6.2.2 Hotel

The RMSGTGD 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 RMS Guide; therefore, a morning trip rate equal to the evening trip rate has been assumed. Application of this rate to the proposed 60 hotel rooms and adopting an 80:20 split provides the following generation:

- 24 vehicle trips per hour during the morning peak hour (5 in, 19 out)
- 24 vehicle trips per hour during the evening peak hour (19 in, 5 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 Retail

The RMSGTGD 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 retail component of the development. The RMSGTGD 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 RMSGTGD, GLFA is about 75% of the GFA.

On this basis, the 287m^2 of retail GFA equates to 215m^2 GLFA. Application of the above trip rate and adopting a 50:50 split results in the following generation:

- 3 vehicle trips per hour during the morning peak hour (3 in, 0 out)
- 10 vehicle trips per hour during the evening peak hour (5 in, 5 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.

6.2.4 Gym

The RMSGTGD recommends an evening weekday peak traffic generation rate of 9 veh/hr per 100 m^2 gross floor area (GFA) for gymnasium uses which are in Metropolitan Sub Regional Areas. The morning peak traffic generation is assumed to be 30% of the evening peak traffic generation to account for staff arrivals. Application of this rate to the proposed 297m^2 of gym and adopting a 50:50 split results in the following generation:

- 8 vehicle trips per hour during the morning peak hour (4 in, 4 out)
- 27 vehicle trips per hour during the evening peak hour (13 in, 14 out)

6.2.5 Licensed Area (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 2,060 m^2 of pub GFA and adopting a 70:30 split results in the following generation:

- 48 vehicle trips per hour during the evening peak period (24 in, 24 out)

6.2.6 Café

The restaurant land use in RMS GTGD includes cafes, tea rooms, eating houses or the like. Therefore, the rate of 5 veh/hr per 100 m^2 for restaurant has been adopted for this assessment.

Application of this rate to the proposed 160m^2 of cafe GFA and adopting a 50:50 split in the morning and a 0:100 split in the evening results in the following generation:

- 8 vehicle trips per hour during the morning peak period (4 in, 4 out)
- 8 vehicle trips per hour during the evening peak period (0 in, 8 out)

6.2.7 Combined Traffic Generation

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

- 59 vehicle trips per hour during the morning peak hour (19 in, 40 out)
- 129 vehicle trips per hour during the evening peak hour (71 in, 58 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.

6.2.8 Net Traffic Impact

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:

- +52 vehicle trips per hour during the morning peak hour (+18 in, +34 out)
- +87 vehicle trips per hour during the evening peak hour (+47 in, +40 out)

6.3 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.

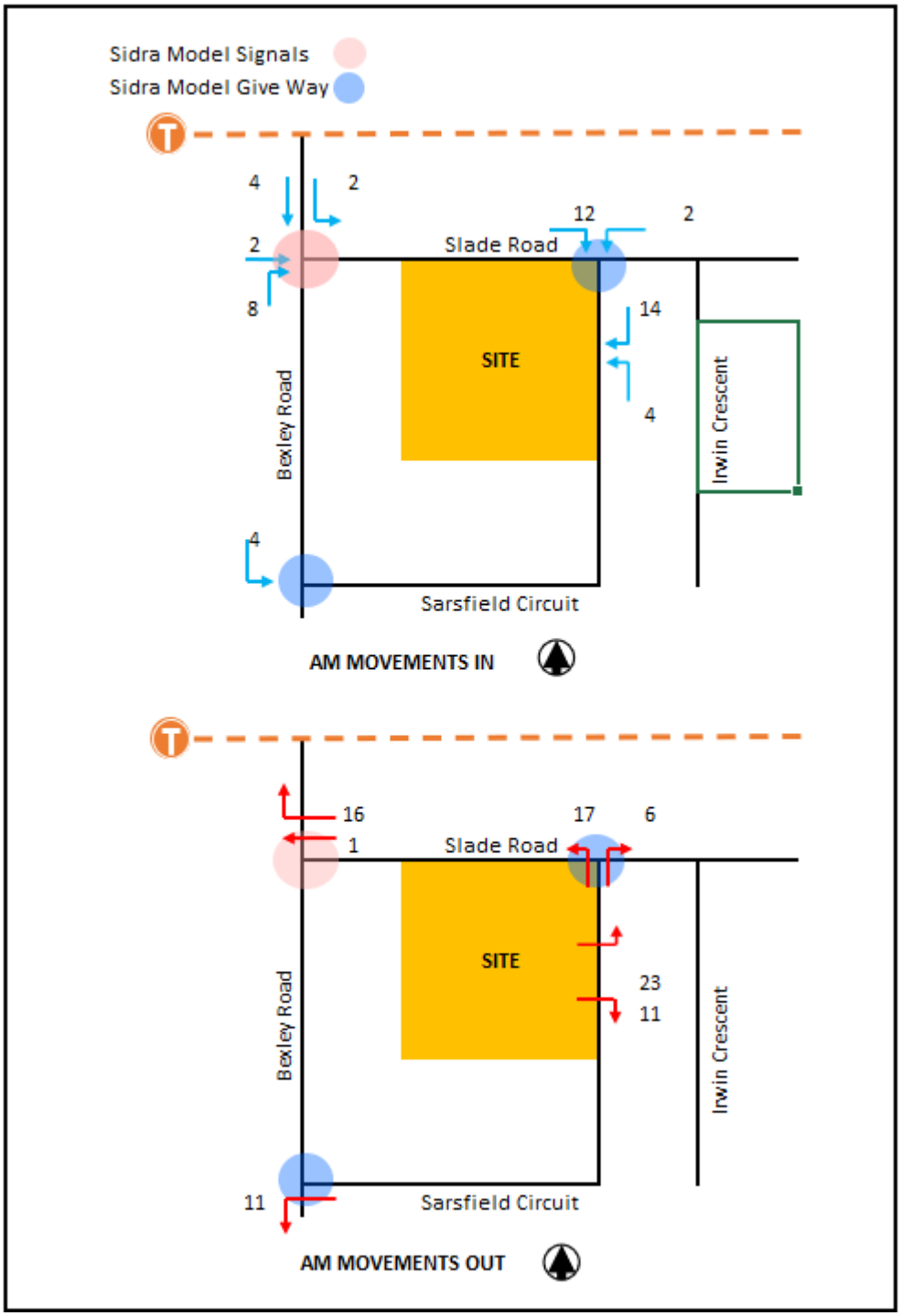


Figure 8: AM Peak Period Distribution (Vehicle trips per hour)

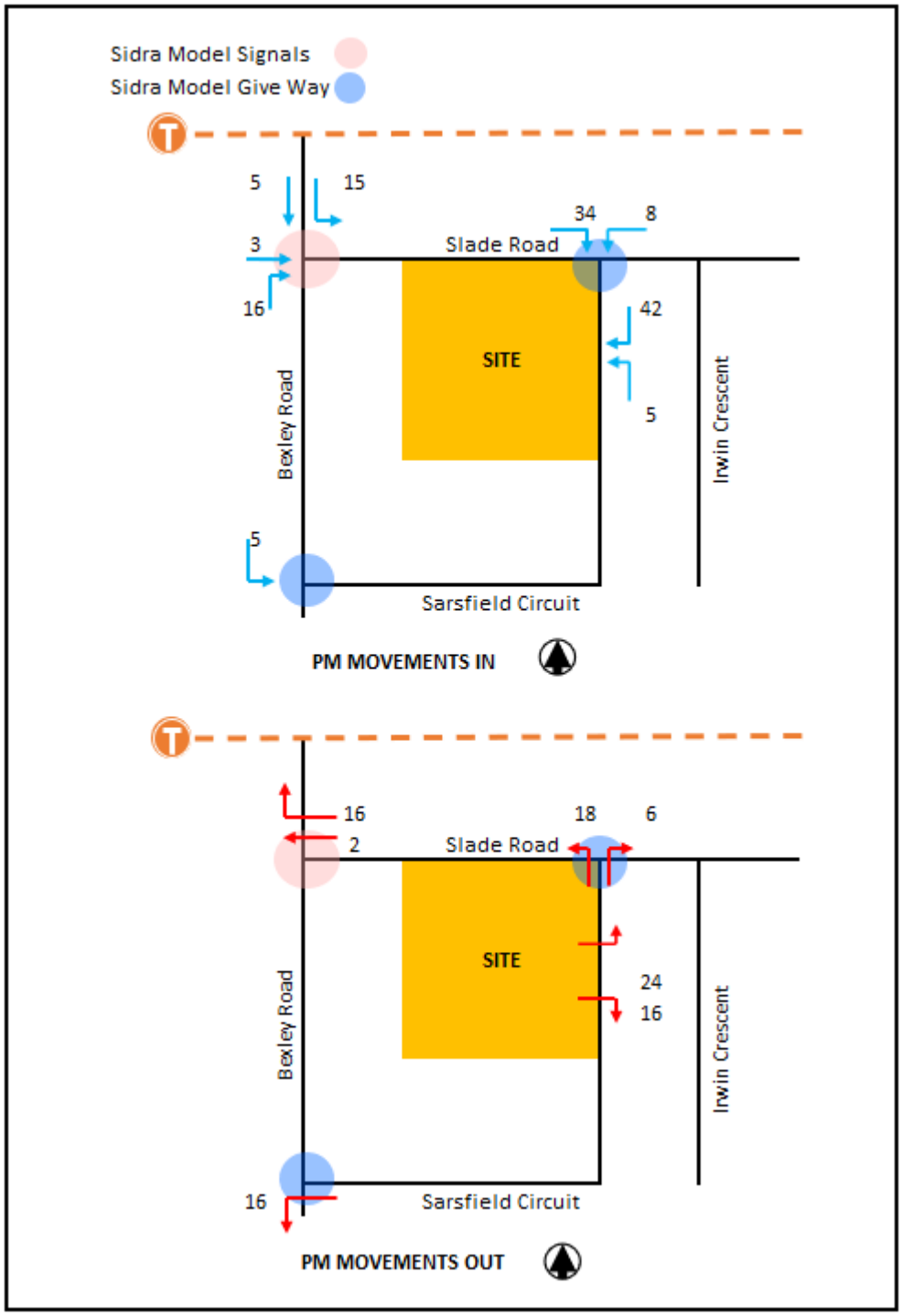


Figure 9: PM Peak Period Distribution (Vehicle trips per hour)

6.4 Peak Period Intersection Performance

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

- 2019 Base Case; and
- 2019 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 19 February 2019 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 10** below.

Table 10: Existing and Future Intersection Performance Indicators (RMS)

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 11**. Reference should also be made to the SIDRA outputs provided in **Appendix B** which provide detailed results for individual lanes and approaches.

Table 11: Existing and Future Intersection Performances

Intersection	Control	Scenario	Period	Degree of Saturation	Average Delay (s)	LoS
Bexley Road / Sarsfield Circuit	Priority Controlled	Base	AM	0.395	7.5	A
			PM	0.421	9.0	A
		Base + Dev	AM	0.398	7.9	A
			PM	0.448	9.2	A
Slade Road / Sarsfield Circuit	Priority Controlled	Base	AM	0.293	8.9	A
			PM	0.277	8.4	A
		Base + Dev	AM	0.307	9.9	A
			PM	0.281	9.7	A
Bexley Road / Slade Road	Signalised	Base	AM	1.097	115.2	F
			PM	0.926	51.5	D
		Base + Dev	AM	1.075	118.9	F
			PM	0.926	55.4	D

6.4.1 Priority Controlled Intersection Performance

It can be seen from **Table 11** that the intersections of Bexley Road and Sarsfield Circuit recorded a minimal change to average delay of 0.4 second in the morning peak period and 0.2 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 Slade Road and Sarsfield Circuit also recorded an acceptable level of service 'A' in the morning and evening peak periods, representing a small increase in average delay of 1.0 seconds and 1.3 seconds respectively. In this regard, the impact of the development on these priority controlled intersections during the morning and evening peak periods is considered acceptable with no external improvements required to support the development scheme.

6.4.2 Signalised Intersection Performance

It can be seen from **Table 11** 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 3.7 seconds, which is moderate and will be generally imperceptible.

Evening Peak

During the evening peak, the net development impact is also less than 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 3.9 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 B4-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

7.1.1 Light Vehicle Access

The concept development provides a total of 214 parking spaces with access to Sarsfield Circuit, a local road. Under AS 2890.1 (2004), a Category 2 driveway is required, being a combined entry and exit driveway of 6.0 to 9.0 meters. The driveway should also incorporate a 600mm wide median to facilitate a visitor intercom to ensure satisfactorily operation. The proposed access driveway can be optimised further during later DA stage/s.

7.1.2 Heavy Vehicle Access

The concept development provides a separate heavy vehicle access driveway to Sarsfield Circuit. Under AS 2890.2 (2018), a 3.5m wide (kerb to kerb) entry/exit lane is required to accommodate SRVs. 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 AS 2890.1 (2004), AS 2890.2 (2018) and AS 2890.6 (2009), 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/gym 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 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 AS 2890.6 (2009), 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 AS 2890.1 (2004).
- Dead-end aisles are to be provided with the required 1.0m aisle extension in accordance with Figure 2.3 of AS 2890.1 (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 long transition at 12.5% (1 in 8), in accordance with the public car park requirements of AS 2890.1 (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 long transition at 12.5% (1 in 8), in accordance with the residential car park requirements of AS 2890.1 (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 AS 2890.

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 AS 2890.1 (2004).
- A minimum clear head height of 2.5m is to be provided above all accessible spaces in accordance with AS 2890.6 (2009).
- Head height clearances for roadways/loading docks accessed by service vehicles are to be provided in accordance with Table 2.1 of AS 2890.2 (2018).

7.2.4 Loading/Service Bays

- All loading bays are to be designed to accommodate the largest vehicle in accordance with AS 2890.2 (2018).
- Roadways/ramps accessed by waste/service vehicles are to be designed in accordance with Table 3.2 of AS 2890.2 (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 AS 2890.2 (2018).

7.2.5 Other Considerations

- Visual splays are to be provided at the access driveway in accordance with Figure 3.3 of AS 2890.1 (2004).
- Bicycle parking should be designed in accordance with AS 2890.3 (2015).

7.3 Summary

In summary, the internal configuration of the car park should be designed in accordance with AS 2890.1 (2004), AS 2890.2 (2018) and AS 2890.6 (2009). 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 hotel (pub), gym 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 tenants, employees and visitors to use public transport modes.
- The concept scheme has been assessed to require 214 parking spaces under the SEPP 65, RMS and Council DCP requirements. In response, concept plans demonstrate an ability to accommodate 214 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 52 vehicle trips per hour during the morning peak period and 87 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 AS 2890 in order to ensure safe and efficient operation.
- The loading bay will be designed to accommodate the largest vehicle expected in accordance with AS 2890.2 (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

Photographic Record

Bexley Road / Slade Road / Shaw Street Intersection

Slade Road / Sarsfield Circuit Intersection

Bexley Road / Sarsfield Circuit Intersection

Subject Development Frontage to Slade Road

Existing Access Driveway to Shared Carpark

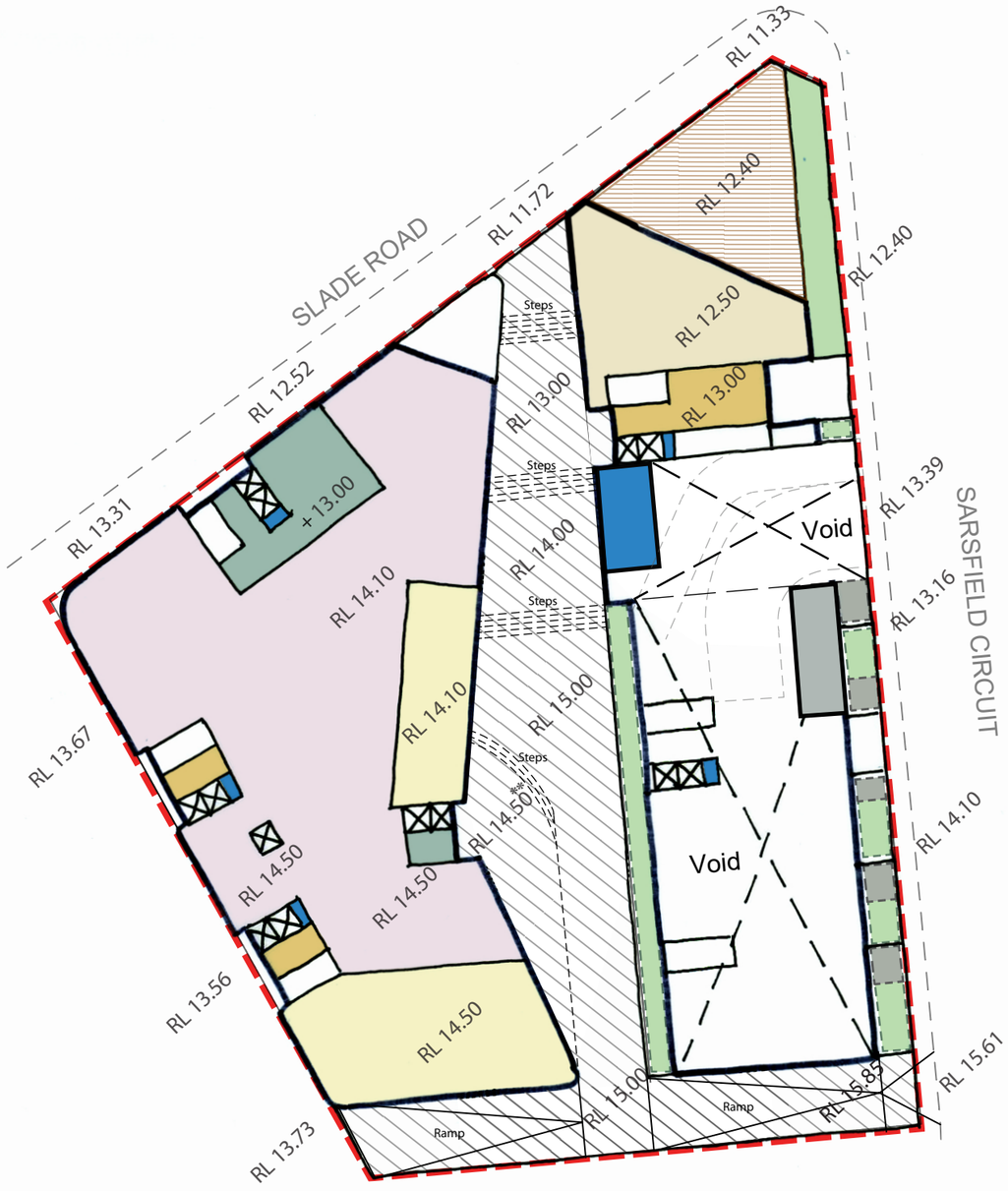
Subject Development Area – View looking East

Subject Development Area – View looking East

Subject Development Frontage to Sarsfield Circuit

APPENDIX B

Reduced Plans



KEY

- Footpath
- Site boundary
- Residential entry lobby
- Pub
- Hotel entry lobby
- Services
- Retail
- Substation
- Landscape buffer
- Outdoor deck

Ground Level

**Subject to loading at basement

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

Prepared for: TUNBORN PTY LTD

SK-004
Revision: B by DR
Issued on 14 July 2020

SCALE: 1:500 @ A3*

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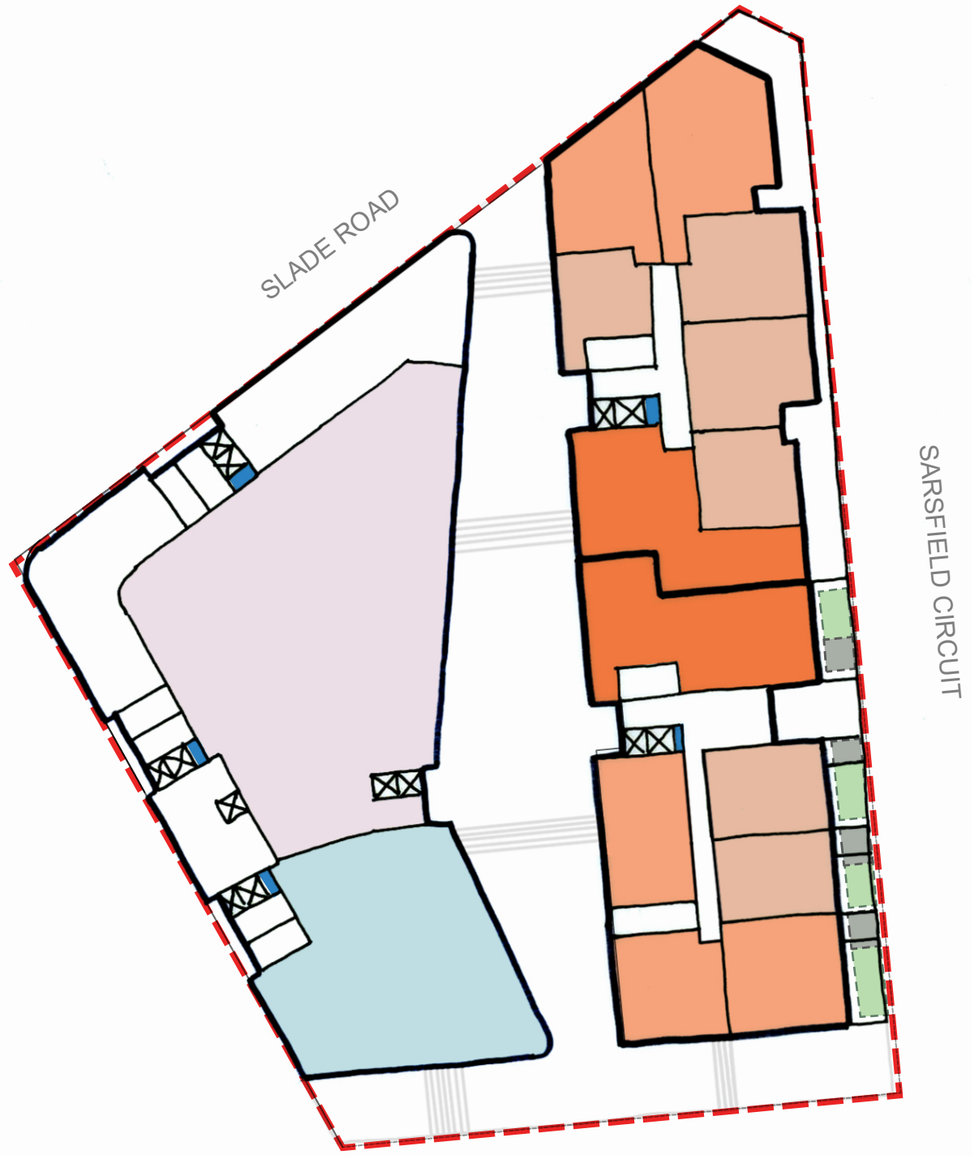

KEY

- Site boundary
- 1 bedroom unit
- 2 bedroom unit
- 3 bedroom unit
- Services
- Pub
- Gym
- Substation
- Landscape buffer

Level 01

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

Prepared for: TUNBORN PTY LTD

SK-005
Revision: A by DR
Issued on 25 March 2020

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KEY

- Site boundary
- 1 bedroom unit
- 2 bedroom unit
- 3 bedroom unit
- Services
- Green roof - Non trafficable
- Hotel rooms

Levels 02 - 03

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

Prepared for: TUNBORN PTY LTD

SK-006
Revision: A by DR
Issued on 25 March 2020

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KEY

- Site boundary
- 1 bedroom unit
- 2 bedroom unit
- 3 bedroom unit
- Services
- Green roof - Non trafficable
- Hotel rooms

Level 04

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

Prepared for: TUNBORN PTY LTD

SK-007
Revision: A by DR
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KEY

- Site boundary
- 1 bedroom unit
- 2 bedroom unit
- 3 bedroom unit
- Services
- Rooftop COS
- Green roof - Non trafficable
- Hotel rooms

Level 05

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

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SK-008
Revision: A by DR
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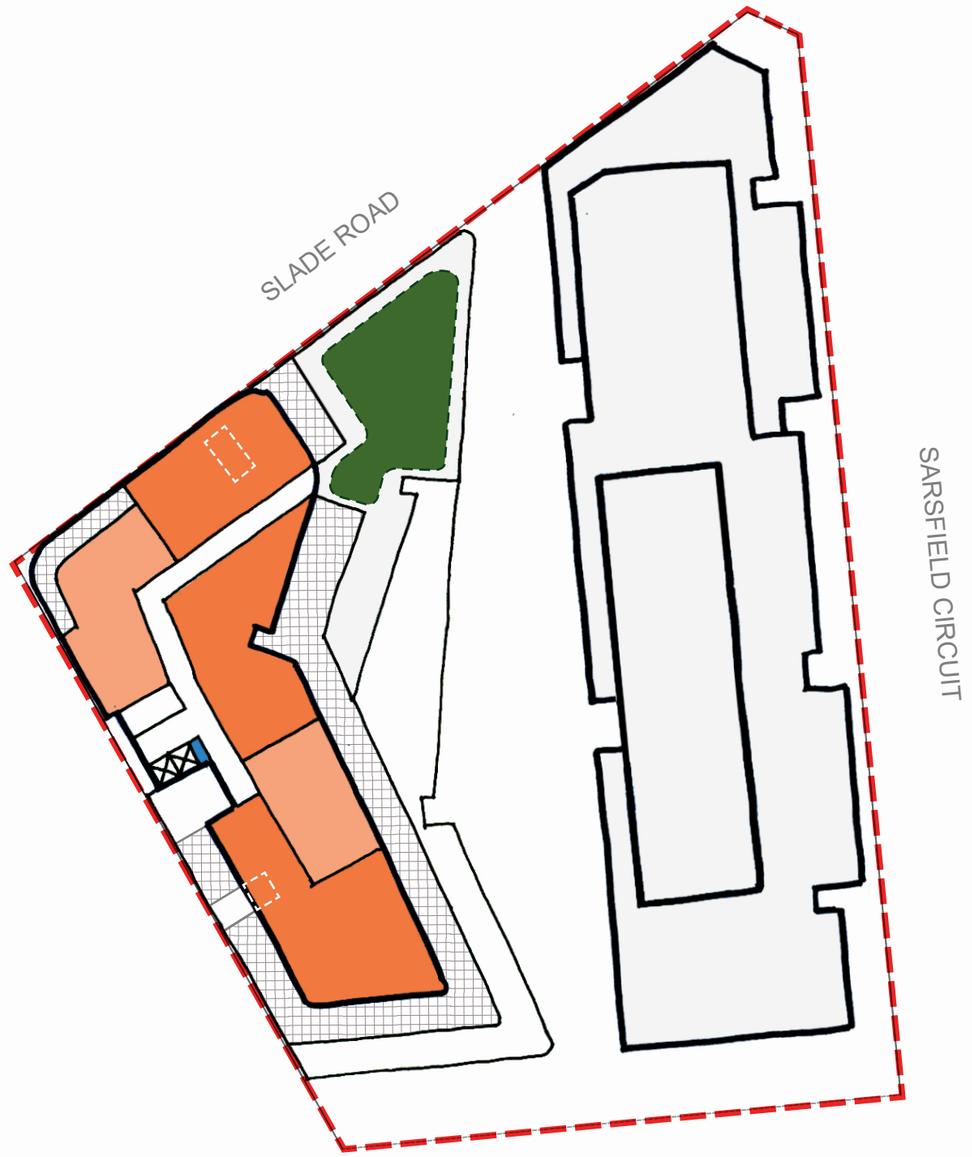

KEY

- Site boundary
- 1 bedroom unit
- 2 bedroom unit
- 3 bedroom unit
- Services
- Rooftop COS

Level 06

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

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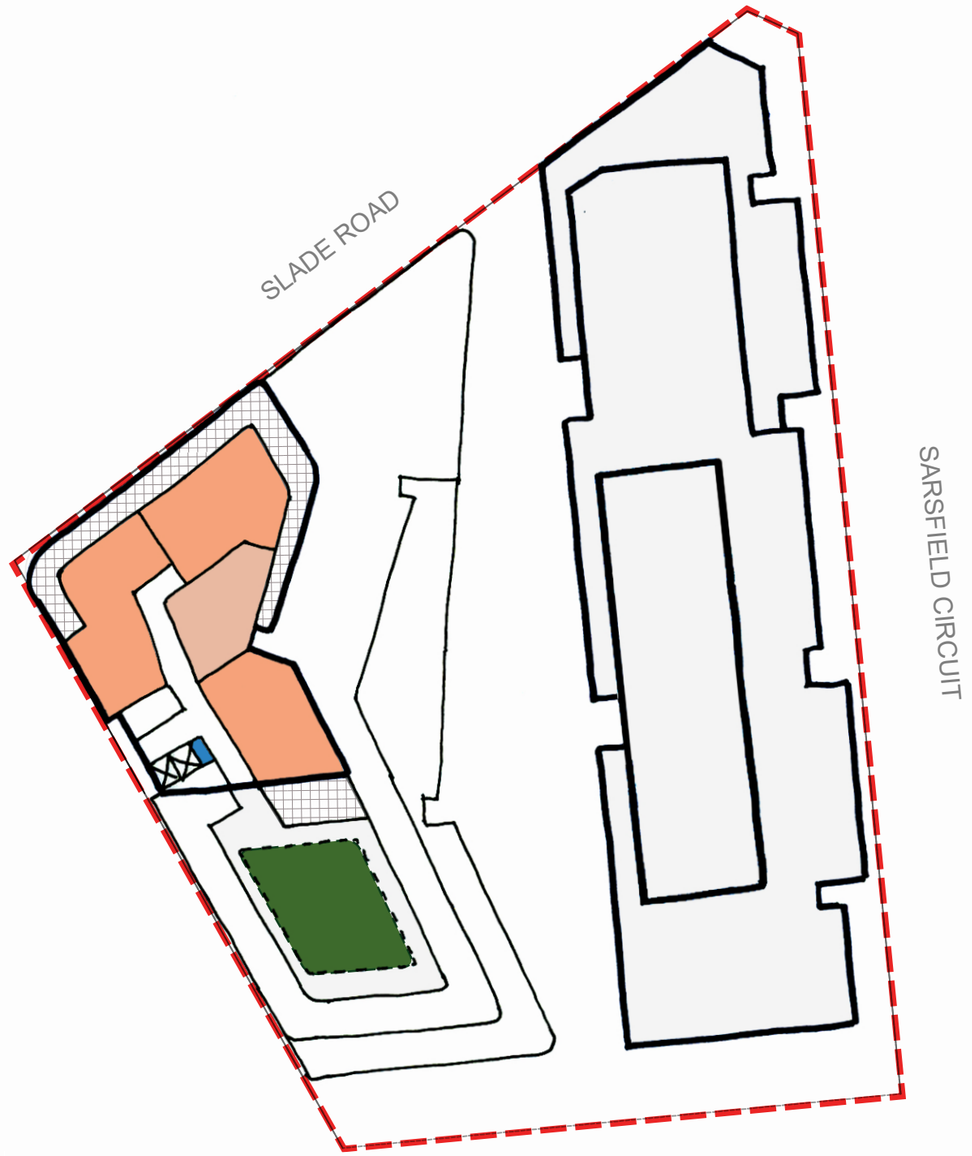

KEY

- Site boundary
- 1 bedroom unit
- 2 bedroom unit
- 3 bedroom unit
- Services
- Rooftop COS

Level 07

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

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SK-010
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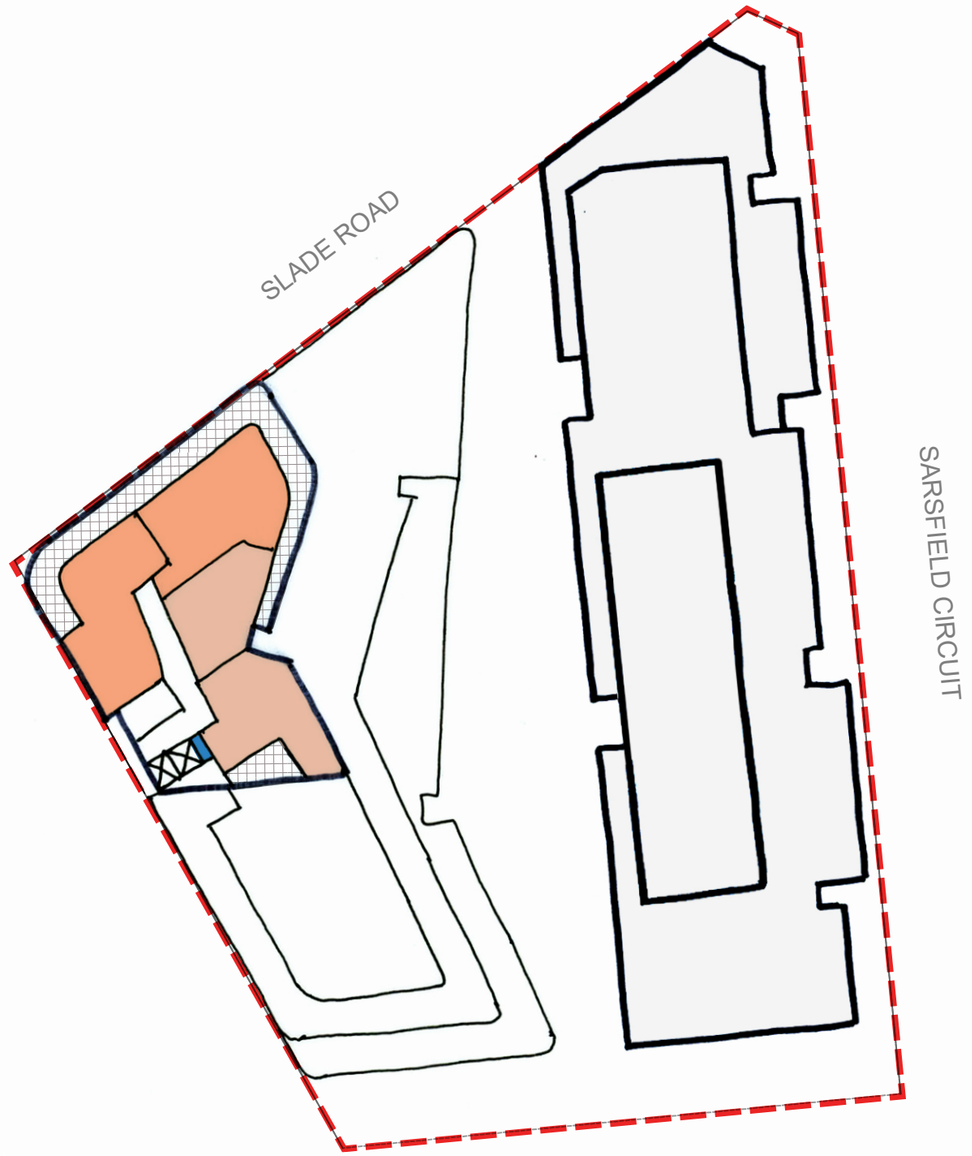

KEY

- Site boundary
- 1 bedroom unit
- 2 bedroom unit
- 3 bedroom unit
- Services

Level 08

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

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SK-011
Revision: A by DR
Issued on 25 March 2020

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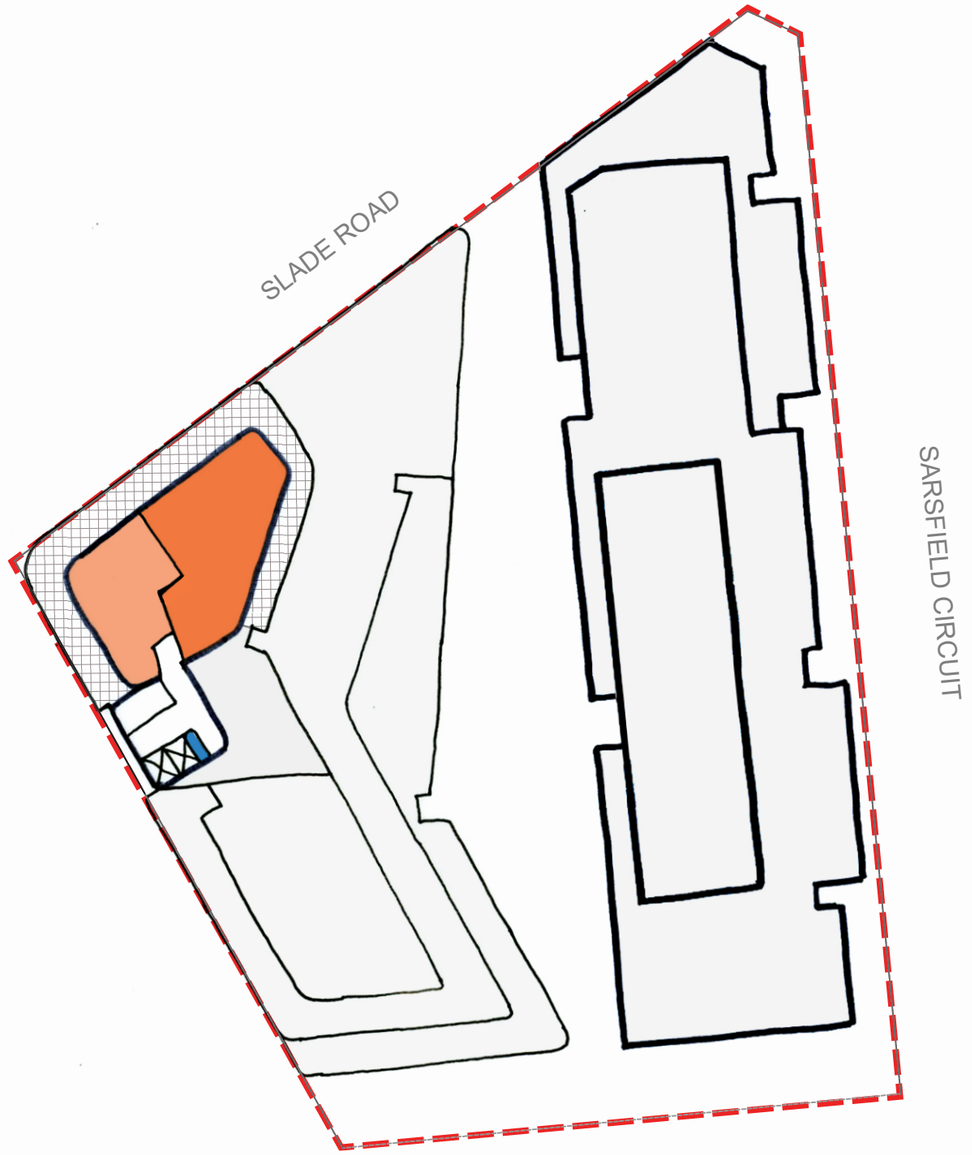

KEY

- Site boundary
- 1 bedroom unit
- 2 bedroom unit
- 3 bedroom unit
- Services

Level 09

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

Prepared for: TUNBORN PTY LTD

SK-012
Revision: A by DR
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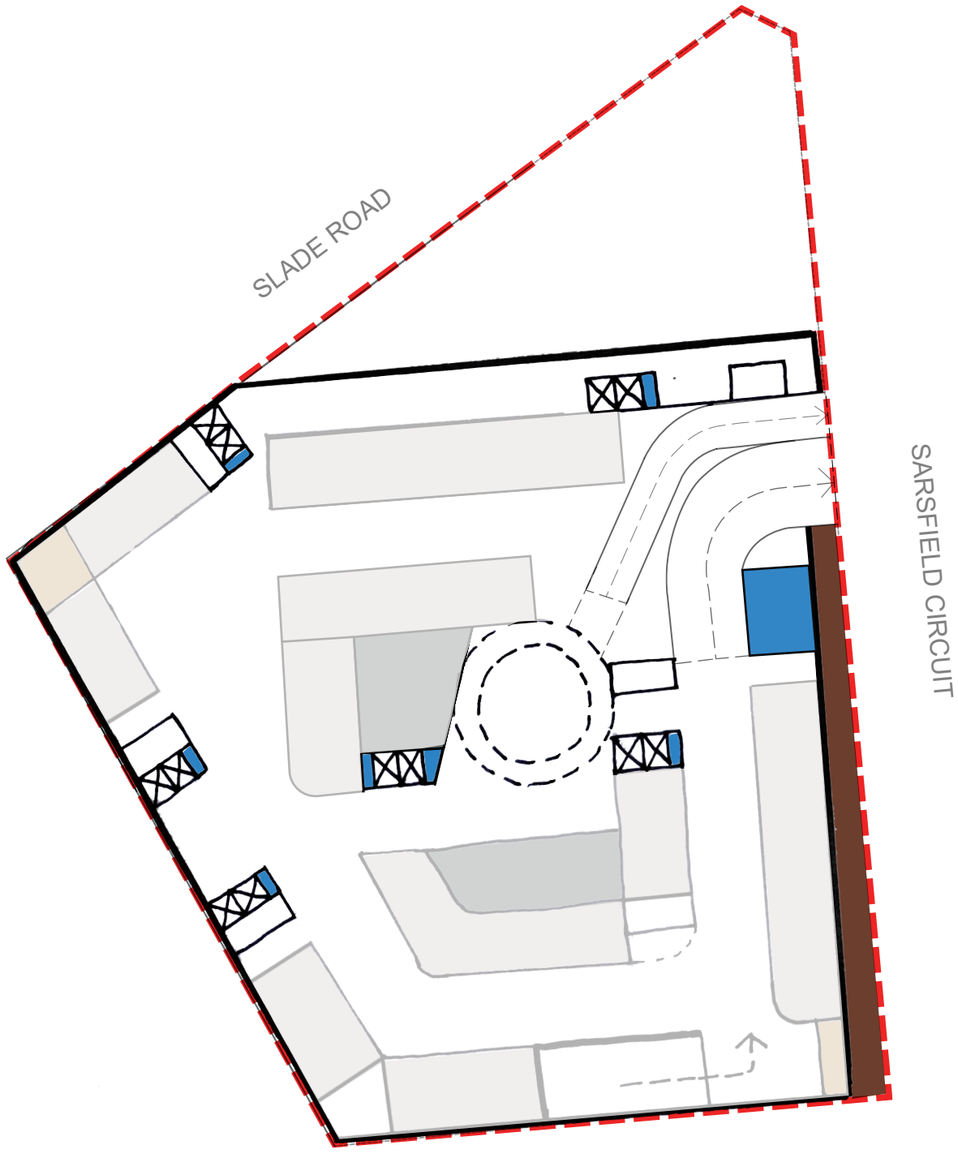

KEY

- Site boundary
- Services
- Parking
- Storage areas
- Deep soil
- Waste rooms

Basement Level 01

Approximately 58-62 car spaces**

** Pending accessible spaces

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

Prepared for: TUNBORN PTY LTD

SK-001
Revision: B by DR
Issued on 22 July 2020

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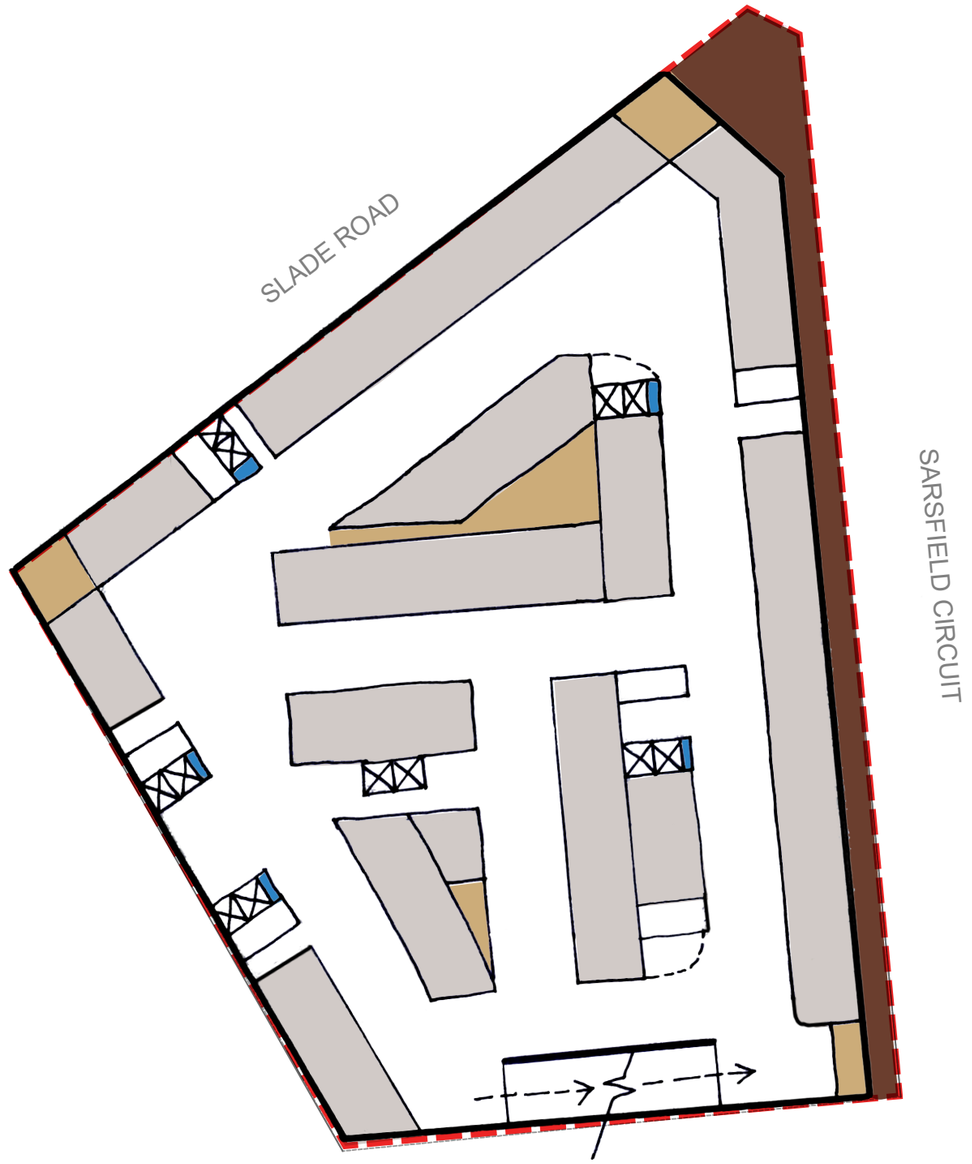

KEY

- Site boundary
- Services
- Parking
- Storage areas
- Deep soil

Basement Level 02

Approximately 108-110car spaces**

** Pending accessible spaces

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

Prepared for: TUNBORN PTY LTD

SK-002
Revision: A by DR
Issued on 25 March 2020

SCALE: 1:500 @ A3*

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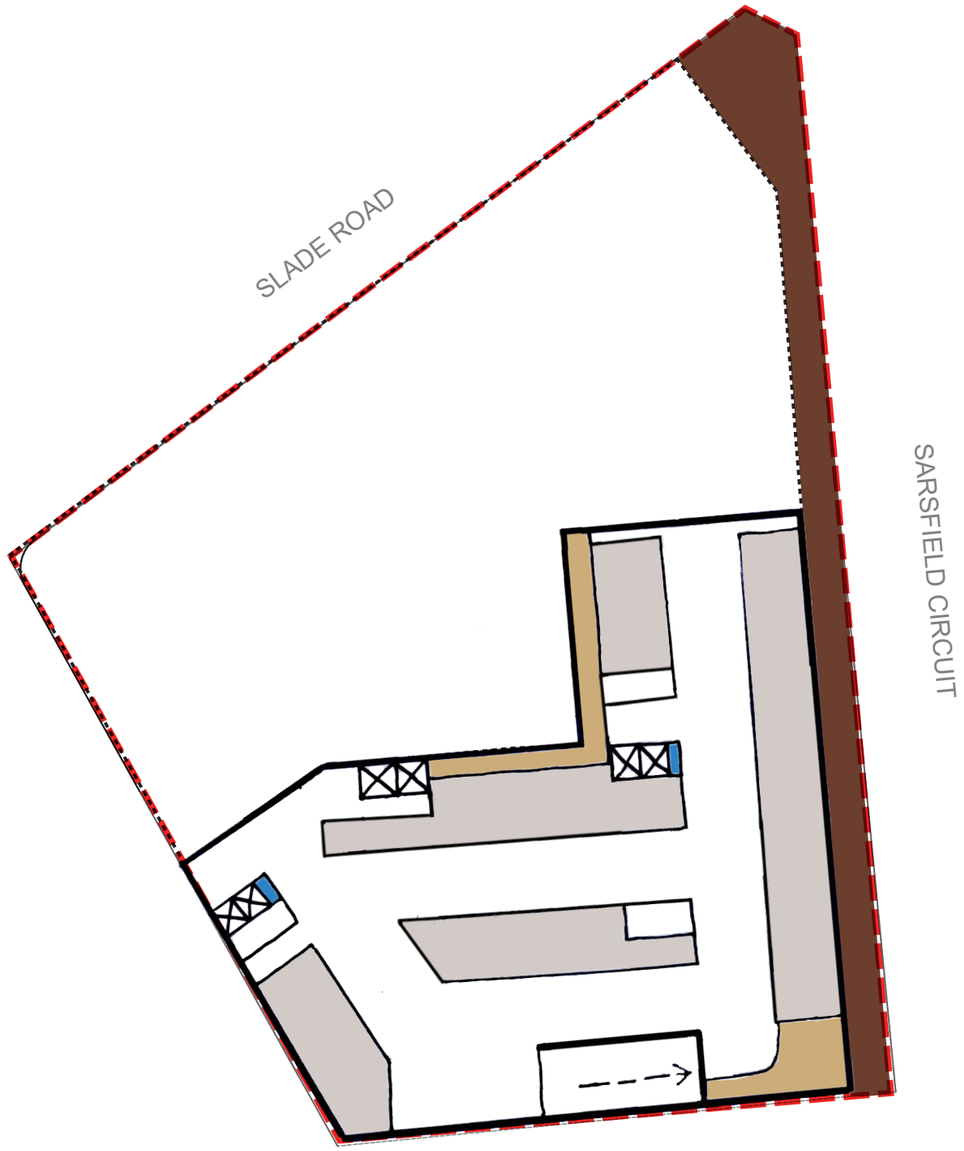

KEY

- Site boundary
- Services
- Parking
- Storage areas
- Deep soil

Basement Level 03

Approximately 40-42 car spaces**

** Pending accessible spaces

18054 - PP - Bexley North - 187 Slade Road

Concept plans (to scale)

Prepared for: TUNBORN PTY LTD

SK-003
Revision: A by DR
Issued on 25 March 2020

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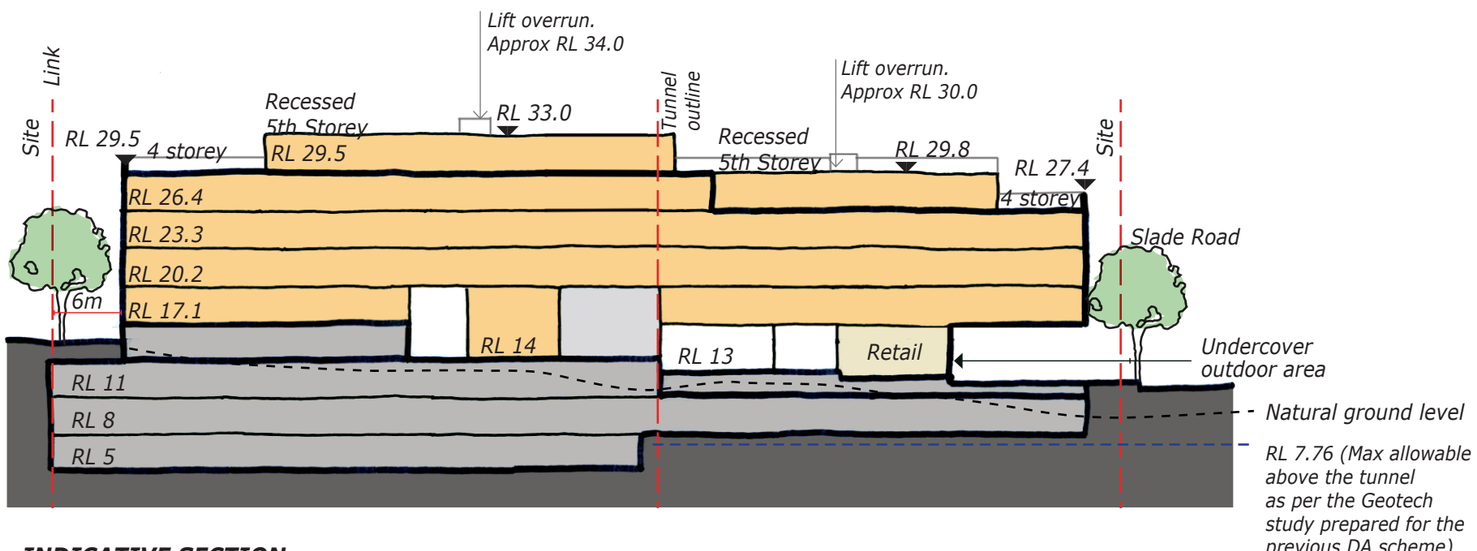
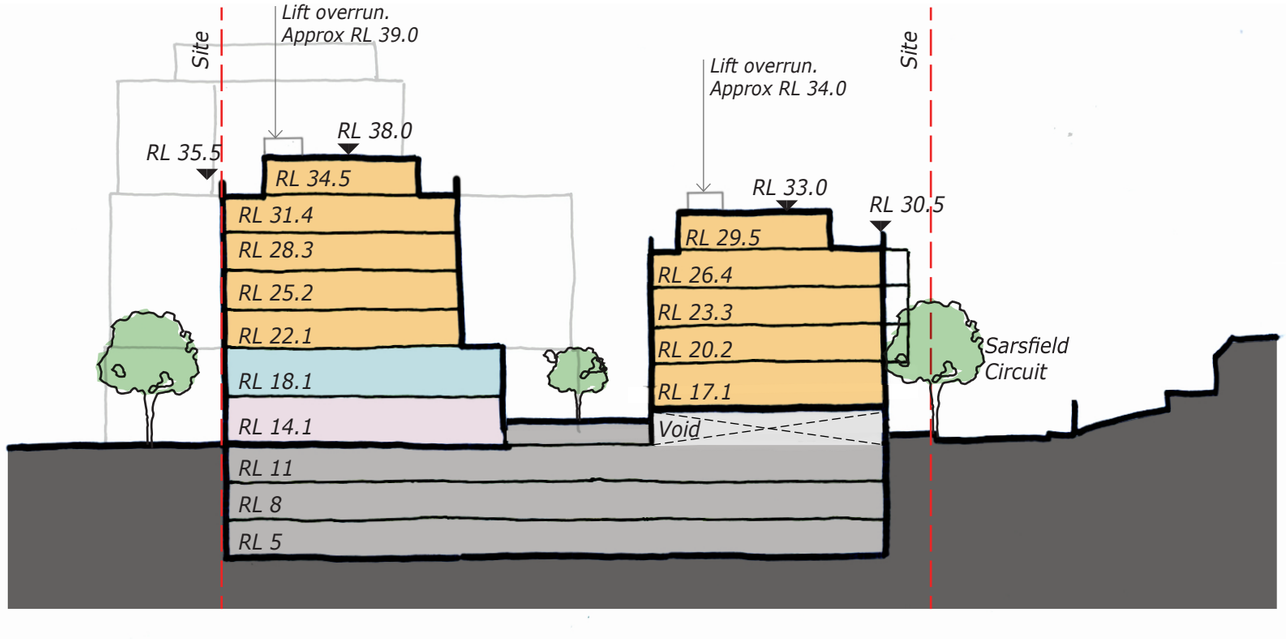


INDICATIVE SECTION a-a



INDICATIVE SECTION b-b

KEY

- ⟷ Flood mitigation
- Residential
- Gym
- Pub
- Cafe
- Substation
- Basement

18054 - PP - Bexley North - 187 Slade Road

Indicative sectional studies

Prepared for: TUNBORN PTY LTD

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APPENDIX C

SIDRA Outputs

USER REPORT FOR NETWORK SITE

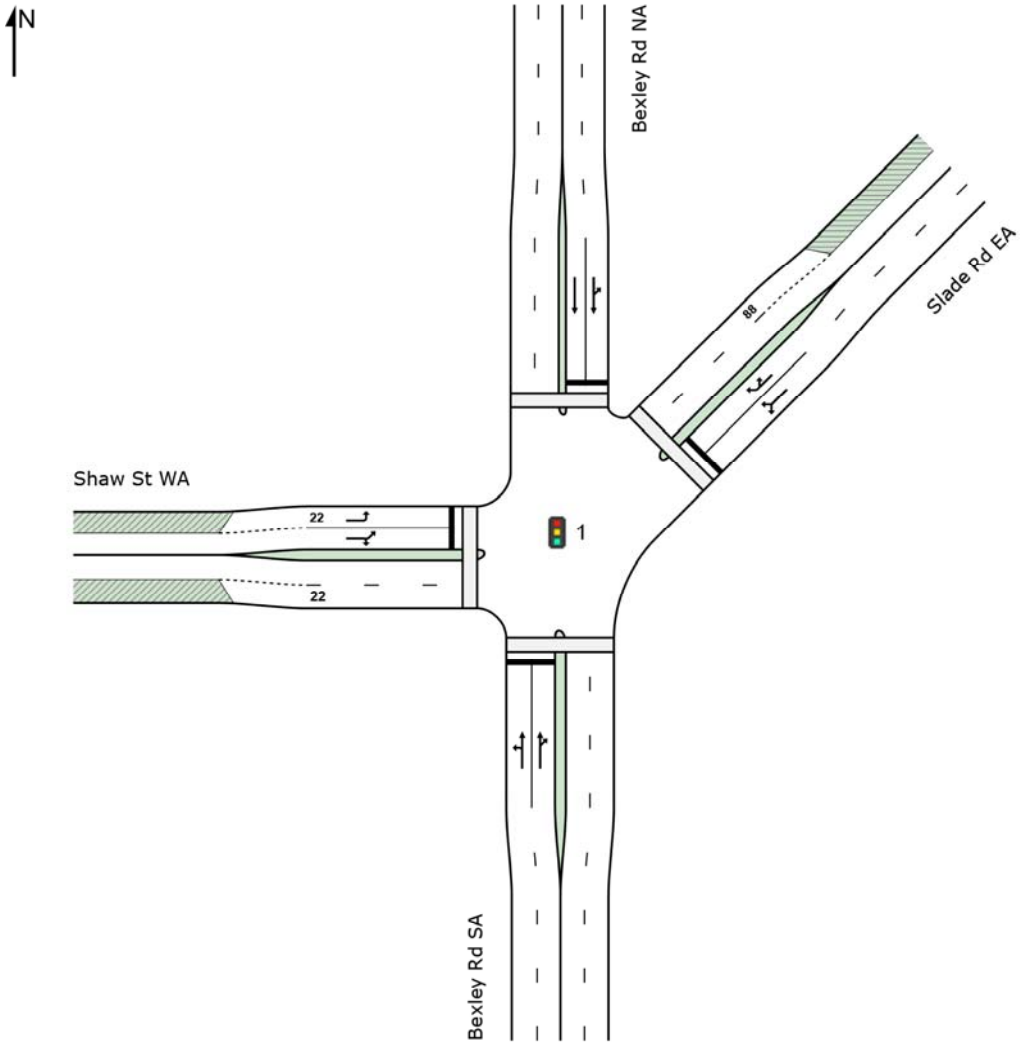
Project: 17.091m1 Traffix Bexley North Hotel PP+FU **Template: Layouts**

Site: 1 [1. AM EX Bexley Rd/ Slade Rd] Network: 4 [1.AM_EX_Network]

Bexley Rd/ Slade Rd
AM Peak
Existing
Site Category: -
Signals - Fixed Time 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
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Site Layout



USER REPORT FOR NETWORK SITE

Project: 17.091m1 Traffix Bexley North Hotel PP+FU **Template: Movement_Summary**

Site: 1 [1. AM EX Bexley Rd/ Slade Rd] **Network: 4 [1.AM_EX_Network]**

Bexley Rd/ Slade Rd
AM Peak
Existing
Site Category: -
Signals - Fixed Time 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
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Bexley Rd SA														
1	L2	24	13.0	24	13.0	1.043	114.8	LOS F	15.2	110.0	1.00	1.44	1.65	14.5
2	T1	1305	4.1	1305	4.1	1.043	103.9	LOS F	15.2	110.0	1.00	1.38	1.68	7.2
3a	R1	172	3.7	172	3.7	1.043	92.0	LOS F	15.2	110.0	1.00	1.21	1.78	3.3
Approach		1501	4.2	1501	4.2	1.043	102.7	LOS F	15.2	110.0	1.00	1.36	1.69	6.8
NorthEast: Slade Rd EA														
24a	L1	113	4.7	113	4.7	0.521	52.9	LOS D	5.6	40.5	0.96	0.80	0.96	7.7
26a	R1	102	0.0	102	0.0	1.043	86.2	LOS F	14.1	100.6	0.98	1.00	1.37	17.1
26b	R3	197	3.2	197	3.2	1.043	131.7	LOS F	14.1	100.6	1.00	1.25	1.91	6.3
Approach		412	2.8	412	2.8	1.043	98.9	LOS F	14.1	100.6	0.98	1.07	1.52	9.4
North: Bexley Rd NA														
7b	L3	144	2.9	144	2.9	1.067	126.4	LOS F	31.4	226.9	1.00	1.35	1.87	3.5
8	T1	1034	4.2	1034	4.2	1.067	129.2	LOS F	37.1	268.8	1.00	1.47	1.86	3.6
Approach		1178	4.0	1178	4.0	1.067	128.9	LOS F	37.1	268.8	1.00	1.46	1.86	3.6
West: Shaw St WA														
10	L2	118	0.0	118	0.0	0.391	49.2	LOS D	3.7	25.6	0.90	0.77	0.90	24.3
10a	L1	292	1.4	292	1.4	1.097	167.9	LOS F	22.2	157.7	1.00	1.52	2.12	8.9
12	R2	33	6.5	33	6.5	1.097	169.2	LOS F	22.2	157.7	1.00	1.52	2.12	8.9
Approach		442	1.4	442	1.4	1.097	136.3	LOS F	22.2	157.7	0.97	1.32	1.80	11.1
All Vehicles		3533	3.6	3533	3.6	1.097	115.2	LOS F	37.1	268.8	0.99	1.36	1.74	6.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

USER REPORT FOR NETWORK SITE

Project: 17.091m1 Traffix Bexley North Hotel PP+FU **Template: Movement_Summary**

Site: 1 [1. PM EX Bexley Rd/ Slade Rd] **Network: 1 [2.PM_EX_Network]**

Bexley Rd/ Slade Rd
PM Peak
Existing
Site Category: -
Signals - Fixed Time Isolated Cycle Time = 115 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: A-B-C-D
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Bexley Rd SA														
1	L2	20	10.5	20	10.5	0.911	43.0	LOS D	15.4	110.0	0.95	0.99	1.09	27.5
2	T1	1179	1.9	1179	1.9	0.911	42.9	LOS D	15.4	110.0	0.96	1.03	1.21	15.9
3a	R1	112	1.9	112	1.9	0.911	68.6	LOS E	13.7	97.2	1.00	1.18	1.67	6.2
Approach		1311	2.0	1311	2.0	0.911	45.1	LOS D	15.4	110.0	0.97	1.04	1.25	15.1
NorthEast: Slade Rd EA														
24a	L1	184	2.3	184	2.3	0.463	43.1	LOS D	6.4	45.8	0.90	0.80	0.90	9.0
26a	R1	167	0.6	167	0.6	0.926	66.6	LOS E	12.3	86.5	0.98	1.01	1.31	20.2
26b	R3	160	0.7	160	0.7	0.926	75.0	LOS F	12.3	86.5	1.00	1.06	1.42	10.4
Approach		512	1.2	512	1.2	0.926	60.8	LOS E	12.3	86.5	0.96	0.95	1.20	14.3
North: Bexley Rd NA														
7b	L3	155	1.4	155	1.4	0.911	58.0	LOS E	26.6	188.9	1.00	1.07	1.39	8.8
8	T1	1220	1.7	1220	1.7	0.911	51.4	LOS D	26.8	190.5	1.00	1.06	1.28	8.9
Approach		1375	1.7	1375	1.7	0.911	52.2	LOS D	26.8	190.5	1.00	1.06	1.30	8.9
West: Shaw St WA														
10	L2	46	0.0	46	0.0	0.194	53.6	LOS D	1.5	10.2	0.93	0.74	0.93	23.3
10a	L1	143	0.7	143	0.7	0.865	65.6	LOS E	7.1	50.2	1.00	1.01	1.33	18.1
12	R2	43	4.9	43	4.9	0.865	66.9	LOS E	7.1	50.2	1.00	1.01	1.33	18.1
Approach		233	1.4	233	1.4	0.865	63.4	LOS E	7.1	50.2	0.99	0.95	1.25	19.1
All Vehicles		3429	1.7	3429	1.7	0.926	51.5	LOS D	26.8	190.5	0.98	1.03	1.26	13.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

USER REPORT FOR NETWORK SITE

Project: 17.091m1 Traffix Bexley North Hotel PP+FU **Template: Movement_Summary**

Site: 1 [1. AM Fu EX Bexley Rd/ Slade Rd] Network: 5 [3.AM_Fu_Network]

Bexley Rd/ Slade Rd
AM Peak
Future
Site Category: -
Signals - Fixed Time 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
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Bexley Rd SA														
1	L2	24	13.0	24	13.0	1.075	138.9	LOS F	15.2	110.0	1.00	1.57	1.82	12.5
2	T1	1305	4.1	1305	4.1	1.075	127.7	LOS F	15.2	110.0	1.00	1.50	1.84	6.0
3a	R1	180	3.5	180	3.5	1.075	114.8	LOS F	15.2	110.0	1.00	1.28	1.93	2.8
Approach		1509	4.2	1509	4.2	1.075	126.3	LOS F	15.2	110.0	1.00	1.47	1.85	5.8
NorthEast: Slade Rd EA														
24a	L1	113	4.7	113	4.7	0.520	52.1	LOS D	5.8	41.5	0.95	0.80	0.95	7.8
26a	R1	103	0.0	103	0.0	1.040	81.4	LOS F	14.7	105.1	0.97	0.97	1.32	17.8
26b	R3	214	3.0	214	3.0	1.040	129.8	LOS F	14.7	105.1	1.00	1.24	1.89	6.4
Approach		429	2.7	429	2.7	1.040	97.8	LOS F	14.7	105.1	0.98	1.06	1.51	9.5
North: Bexley Rd NA														
7b	L3	146	2.9	146	2.9	1.052	115.0	LOS F	29.7	215.1	1.00	1.31	1.79	3.8
8	T1	1038	4.2	1038	4.2	1.052	118.1	LOS F	35.8	259.3	1.00	1.42	1.79	3.9
Approach		1184	4.0	1184	4.0	1.052	117.7	LOS F	35.8	259.3	1.00	1.41	1.79	3.9
West: Shaw St WA														
10	L2	118	0.0	118	0.0	0.366	48.2	LOS D	3.6	25.3	0.89	0.77	0.89	24.6
10a	L1	294	1.4	294	1.4	1.062	142.7	LOS F	20.4	145.5	1.00	1.43	1.96	10.2
12	R2	33	6.5	33	6.5	1.062	144.1	LOS F	20.4	145.5	1.00	1.43	1.96	10.2
Approach		444	1.4	444	1.4	1.062	117.7	LOS F	20.4	145.5	0.97	1.25	1.67	12.5
All Vehicles		3567	3.6	3567	3.6	1.075	118.9	LOS F	35.8	259.3	0.99	1.37	1.77	6.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

USER REPORT FOR NETWORK SITE

Project: 17.091m01v02 Traffix Bexley North Hotel PP+FU **Template: Movement Summary**

Site: 1 [1. PM Fu Bexley Rd/ Slade Rd] Network: 3 [4.PM_Fu_Network]

Bexley Rd/ Slade Rd
PM Peak
Future
Site Category: -
Signals - Fixed Time 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
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Bexley Rd SA														
1	L2	20	10.5	20	10.5	0.922	48.0	LOS D	15.4	110.0	0.98	1.03	1.14	25.9
2	T1	1179	1.9	1179	1.9	0.922	48.1	LOS D	15.4	110.0	0.99	1.08	1.28	14.6
3a	R1	128	1.6	128	1.6	0.922	74.8	LOS F	14.8	105.5	1.00	1.25	1.83	5.7
Approach		1327	2.0	1327	2.0	0.922	50.7	LOS D	15.4	110.0	0.99	1.09	1.33	13.8
NorthEast: Slade Rd EA														
24a	L1	184	2.3	184	2.3	0.463	44.2	LOS D	6.8	48.7	0.89	0.80	0.89	8.8
26a	R1	169	0.6	169	0.6	0.926	67.3	LOS E	13.3	93.9	0.97	0.99	1.28	20.1
26b	R3	177	0.6	177	0.6	0.926	76.9	LOS F	13.3	93.9	1.00	1.05	1.40	10.2
Approach		531	1.2	531	1.2	0.926	62.5	LOS E	13.3	93.9	0.95	0.94	1.19	14.0
North: Bexley Rd NA														
7b	L3	171	1.2	171	1.2	0.911	60.3	LOS E	27.7	196.2	1.00	1.06	1.41	8.5
8	T1	1225	1.7	1225	1.7	0.911	53.2	LOS D	28.2	200.6	1.00	1.05	1.28	8.6
Approach		1396	1.7	1396	1.7	0.911	54.1	LOS D	28.2	200.6	1.00	1.06	1.30	8.6
West: Shaw St WA														
10	L2	46	0.0	46	0.0	0.203	56.4	LOS D	1.5	10.7	0.93	0.74	0.93	22.6
10a	L1	146	0.7	146	0.7	0.923	76.8	LOS F	8.1	57.2	1.00	1.10	1.48	16.3
12	R2	43	4.9	43	4.9	0.923	78.2	LOS F	8.1	57.2	1.00	1.10	1.48	16.3
Approach		236	1.3	236	1.3	0.923	73.0	LOS F	8.1	57.2	0.99	1.03	1.37	17.4
All Vehicles		3489	1.7	3489	1.7	0.926	55.4	LOS D	28.2	200.6	0.99	1.05	1.30	12.4

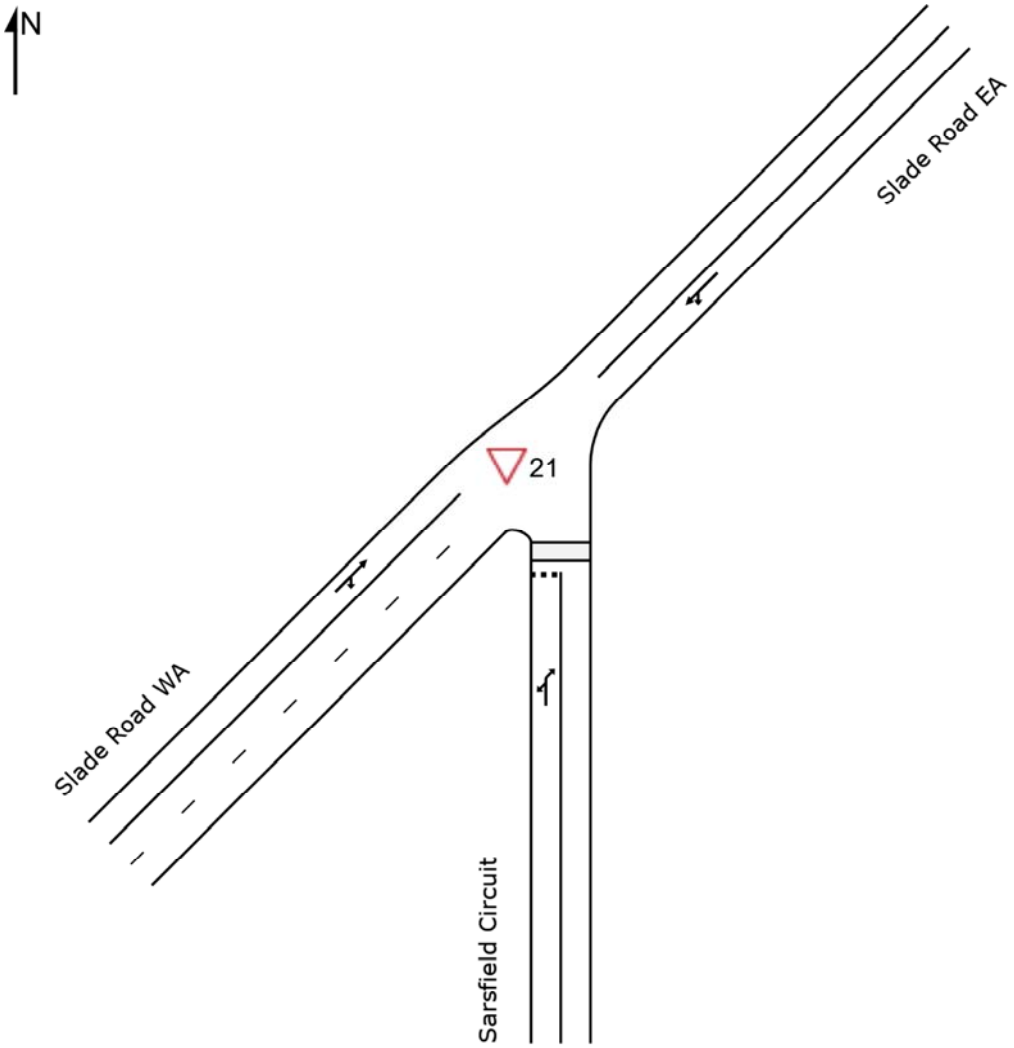
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay 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.

Site: 21 [2. AM EX Slade Rd/Sarsfield Circuit]

Network: 4 [1.AM_EX_Network]

Slade Rd/Sarsfield Circuit
Existing
AM Peak
Site Category: -
Giveway / Yield (Two-Way)

Site Layout



Site: 21 [2. AM EX Slade Rd/Sarsfield Circuit] — Network: 4 [1.AM_EX_Network]

Slade Rd/Sarsfield Circuit
Existing
AM Peak
Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Sarsfield Circuit														
1b	L3	5	0.0	5	0.0	0.011	6.7	LOS A	0.0	0.1	0.47	0.62	0.47	36.0
3a	R1	3	0.0	3	0.0	0.011	8.9	LOS A	0.0	0.1	0.47	0.62	0.47	43.2
Approach		8	0.0	8	0.0	0.011	7.5	LOS A	0.0	0.1	0.47	0.62	0.47	40.2
NorthEast: Slade Road EA														
24a	L1	21	0.0	21	0.0	0.218	4.5	LOS A	0.0	0.0	0.00	0.03	0.00	48.5
25	T1	397	2.7	397	2.7	0.218	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	49.7
Approach		418	2.5	418	2.5	0.218	0.2	NA	0.0	0.0	0.00	0.03	0.00	49.6
SouthWest: Slade Road WA														
31	T1	593	2.3	552	2.3	0.293	0.0	LOS A	0.0	0.2	0.01	0.01	0.01	49.9
32b	R3	5	20.0	5	20.1	0.293	8.2	LOS A	0.0	0.2	0.01	0.01	0.01	46.9
Approach		598	2.5	557[N1]	2.5	0.293	0.1	NA	0.0	0.2	0.01	0.01	0.01	49.9
All Vehicles		1024	2.5	983[N1]	2.6	0.293	0.2	NA	0.0	0.2	0.01	0.02	0.01	49.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Site: 21 [2. PM EX Slade Rd/Sarsfield Circuit]

Network: 1 [2.PM_EX_Network]

Slade Rd/Sarsfield Circuit
Existing
PM Peak
Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Sarsfield Circuit														
1b	L3	5	0.0	5	0.0	0.007	7.1	LOS A	0.0	0.1	0.47	0.61	0.47	36.4
3a	R1	1	0.0	1	0.0	0.007	8.4	LOS A	0.0	0.1	0.47	0.61	0.47	43.3
Approach		6	0.0	6	0.0	0.007	7.3	LOS A	0.0	0.1	0.47	0.61	0.47	38.6
NorthEast: Slade Road EA														
24a	L1	53	2.0	53	2.0	0.277	4.5	LOS A	0.0	0.0	0.00	0.05	0.00	48.3
25	T1	482	1.1	482	1.1	0.277	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	49.4
Approach		535	1.2	535	1.2	0.277	0.5	NA	0.0	0.0	0.00	0.05	0.00	49.2
SouthWest: Slade Road WA														
31	T1	375	1.1	375	1.1	0.200	0.1	LOS A	0.0	0.2	0.02	0.01	0.02	49.8
32b	R3	6	0.0	6	0.0	0.200	8.0	LOS A	0.0	0.2	0.02	0.01	0.02	47.7
Approach		381	1.1	381	1.1	0.200	0.2	NA	0.0	0.2	0.02	0.01	0.02	49.7
All Vehicles		922	1.1	922	1.1	0.277	0.4	NA	0.0	0.2	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 (Network 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.

Site: 21 [2. AM Fu Slade Rd/Sarsfield Circuit]

Network: 5 [3.AM_Fu_Network]

Slade Rd/Sarsfield Circuit
AM Peak
Future
Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Sarsfield Circuit														
1b	L3	23	0.0	23	0.0	0.039	7.6	LOS A	0.1	0.4	0.47	0.67	0.47	38.5
3a	R1	9	0.0	9	0.0	0.039	9.9	LOS A	0.1	0.4	0.47	0.67	0.47	47.1
Approach		33	0.0	33	0.0	0.039	8.3	LOS A	0.1	0.4	0.47	0.67	0.47	42.7
NorthEast: Slade Road EA														
24a	L1	23	0.0	23	0.0	0.219	4.5	LOS A	0.0	0.0	0.00	0.03	0.00	48.5
25	T1	397	2.7	397	2.7	0.219	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	49.7
Approach		420	2.5	420	2.5	0.219	0.3	NA	0.0	0.0	0.00	0.03	0.00	49.6
SouthWest: Slade Road WA														
31	T1	593	2.3	557	2.3	0.307	0.1	LOS A	0.1	0.6	0.04	0.02	0.04	49.6
32b	R3	18	5.9	17	5.9	0.307	8.5	LOS A	0.1	0.6	0.04	0.02	0.04	49.8
Approach		611	2.4	574[N1]	2.4	0.307	0.4	NA	0.1	0.6	0.04	0.02	0.04	49.6
All Vehicles		1063	2.4	1027[N1]	2.5	0.307	0.6	NA	0.1	0.6	0.04	0.05	0.04	49.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Site: 21 [2. PM Fu Slade Rd/Sarsfield Circuit]

Network: 3 [4.PM_Fu_Network]

Slade Rd/Sarsfield Circuit
PM Peak
Future
Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Sarsfield Circuit														
1b	L3	24	0.0	24	0.0	0.038	8.1	LOS A	0.1	0.4	0.49	0.69	0.49	38.6
3a	R1	7	0.0	7	0.0	0.038	9.7	LOS A	0.1	0.4	0.49	0.69	0.49	47.9
Approach		32	0.0	32	0.0	0.038	8.4	LOS A	0.1	0.4	0.49	0.69	0.49	42.4
NorthEast: Slade Road EA														
24a	L1	61	1.7	61	1.7	0.281	4.5	LOS A	0.0	0.0	0.00	0.06	0.00	48.3
25	T1	482	1.1	482	1.1	0.281	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	49.4
Approach		543	1.2	543	1.2	0.281	0.5	NA	0.0	0.0	0.00	0.06	0.00	49.3
SouthWest: Slade Road WA														
31	T1	375	1.1	375	1.1	0.239	0.5	LOS A	0.2	1.3	0.15	0.07	0.15	48.7
32b	R3	42	0.0	42	0.0	0.239	9.0	LOS A	0.2	1.3	0.15	0.07	0.15	48.9
Approach		417	1.0	417	1.0	0.239	1.4	NA	0.2	1.3	0.15	0.07	0.15	48.7
All Vehicles		992	1.1	992	1.1	0.281	1.1	NA	0.2	1.3	0.08	0.09	0.08	48.8

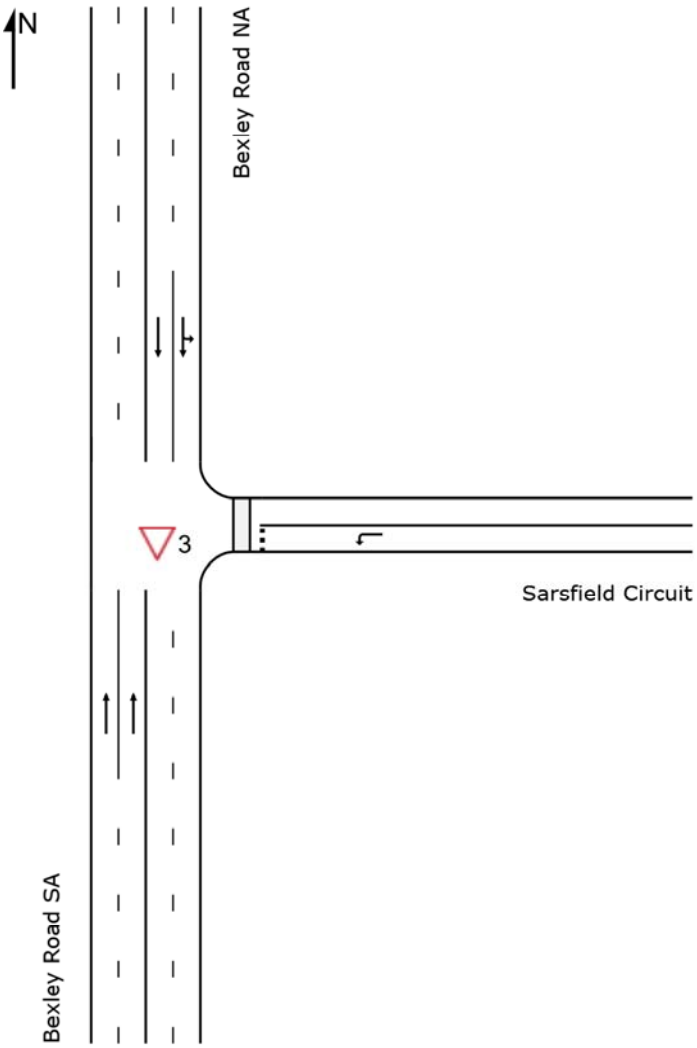
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and 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.

Site: 3 [3. AM EX Bexley Rd/Sarsfield Circuit]

Network: 4 [1.AM_EX_Network]

Bexley Rd/Sarsfield Circuit
Existing
AM Peak
Site Category: -
Giveway / Yield (Two-Way)

Site Layout



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Site: 3 [3. AM EX Bexley Rd/Sarsfield Circuit] — Network: 4 [1.AM_EX_Network]

Bexley Rd/Sarsfield Circuit
Existing
AM Peak
Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Bexley Road SA														
2	T1	1501	4.2	1501	4.2	0.395	0.0	LOS A	46.6	337.6	0.00	0.00	0.00	59.9
Approach		1501	4.2	1501	4.2	0.395	0.0	NA	46.6	337.6	0.00	0.00	0.00	59.9
East: Sarsfield Circuit														
4	L2	27	3.8	27	3.8	0.035	7.5	LOS A	0.1	0.4	0.51	0.63	0.51	41.1
Approach		27	3.8	27	3.8	0.035	7.5	LOS A	0.1	0.4	0.51	0.63	0.51	41.1
North: Bexley Road NA														
7	L2	2	0.0	2	0.0	0.293	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	55.6
8	T1	1177	4.3	1109	4.3	0.293	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1179	4.3	1111[N1]	4.3	0.293	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles		2707	4.2	2639[N1]	4.3	0.395	0.1	NA	46.6	337.6	0.01	0.01	0.01	59.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Site: 3 [3. PM EX Bexley Rd/Sarsfield Circuit] — Network: 1 [2.PM_EX_Network]

Bexley Rd/Sarsfield Circuit
Existing
PM Peak
Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Bexley Road SA														
2	T1	1311	2.0	1311	2.0	0.421	0.0	LOS A	19.0	135.0	0.00	0.00	0.00	59.9
Approach		1311	2.0	1311	2.0	0.421	0.0	NA	19.0	135.0	0.00	0.00	0.00	59.9
East: Sarsfield Circuit														
4	L2	56	1.9	56	1.9	0.086	9.0	LOS A	0.1	1.0	0.58	0.73	0.58	39.9
Approach		56	1.9	56	1.9	0.086	9.0	LOS A	0.1	1.0	0.58	0.73	0.58	39.9
North: Bexley Road NA														
7	L2	5	0.0	5	0.0	0.376	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	55.6
8	T1	1442	1.9	1442	1.9	0.376	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1447	1.9	1447	1.9	0.376	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		2814	1.9	2814	1.9	0.421	0.2	NA	19.0	135.0	0.01	0.02	0.01	58.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

Site: 3 [3. AM Fu Bexley Rd/Sarsfield Circuit] — Network: 5 [3.AM_Fu_Network]

Bexley Rd/Sarsfield Circuit
AM Peak
Future
Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Bexley Road SA														
2	T1	1509	4.2	1509	4.2	0.398	0.0	LOS A	51.9	376.2	0.00	0.00	0.00	59.9
Approach		1509	4.2	1509	4.2	0.398	0.0	NA	51.9	376.2	0.00	0.00	0.00	59.9
East: Sarsfield Circuit														
4	L2	39	2.7	39	2.7	0.050	7.9	LOS A	0.1	0.6	0.51	0.65	0.51	42.0
Approach		39	2.7	39	2.7	0.050	7.9	LOS A	0.1	0.6	0.51	0.65	0.51	42.0
North: Bexley Road NA														
7	L2	6	0.0	6	0.0	0.298	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	55.5
8	T1	1177	4.3	1124	4.3	0.298	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1183	4.3	1130[N1]	4.3	0.298	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		2732	4.2	2678[N1]	4.3	0.398	0.1	NA	51.9	376.2	0.01	0.01	0.01	59.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Site: 3 [3. PM Fu Bexley Rd/Sarsfield Circuit] — Network: 3 [4.PM_Fu_Network]

Bexley Rd/Sarsfield Circuit
PM Peak
Future
Site Category: -
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Bexley Road SA														
2	T1	1327	2.0	1327	2.0	0.448	0.0	LOS A	22.0	156.9	0.00	0.00	0.00	59.8
Approach		1327	2.0	1327	2.0	0.448	0.0	NA	22.0	156.9	0.00	0.00	0.00	59.8
East: Sarsfield Circuit														
4	L2	73	1.4	73	1.4	0.111	9.2	LOS A	0.2	1.3	0.59	0.75	0.59	40.5
Approach		73	1.4	73	1.4	0.111	9.2	LOS A	0.2	1.3	0.59	0.75	0.59	40.5
North: Bexley Road NA														
7	L2	11	0.0	11	0.0	0.377	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	55.5
8	T1	1442	1.9	1442	1.9	0.377	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		1453	1.9	1453	1.9	0.377	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.7
All Vehicles		2853	1.9	2853	1.9	0.448	0.3	NA	22.0	156.9	0.02	0.02	0.02	58.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.