Review of Environmental Factors Barton Park Precinct

Appendix H: Traffic and Parking Assessment Report (Varga Traffic Planning, 2021)

August 2021





Proposed Barton Park Redevelopment Masterplan

90-96 Bestic Street, Banksia

TRAFFIC AND PARKING ASSESSMENT REPORT

20 August 2021

Ref 20270



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Document Verification

1. INTRODUCTION

This report has been prepared to accompany a development application to Bayside Council for the proposed redevelopment of the Barton Park Precinct which is located at 90-96 Bestic Street, Banksia (Figures 1 and 2).

The proposed development involves the demolition of the existing outdoor sports stadium and playing fields on the site, site establishment works as well as (limited) tree and vegetation removal. The proposal also involves the construction of a new outdoor sports facility, comprising 4 playing fields, 4 tennis courts, 2 multi-purpose courts, grandstand (for Field 1 only), clubhouse, play area, fitness park, walking/cycling paths and other associated infrastructure.

Off-street parking is to be provided for approximately 235 cars (plus overflow parking for 100 cars on Field 4), in accordance with expected peak operational requirements. Vehicular access to the site is to be provided via a new entry/exit driveway located at the eastern end of the Bestic Street site frontage, in essentially the same location as the existing driveway, albeit widened in accordance with *AS2890* requirements.

Clause 104 Traffic Generating Development of the *State Environmental Planning Policy* (*Infrastructure*) 2007 refers to *Schedule 3, Column 3* which lists a variety of land uses and critically, their *size or capacity*, that trigger automatic referral to Transport for NSW (TfNSW).

State Environmental Planning Policy (Infrastructure) 2007 [NSW]

Schedule 3 Traffic-generating development to be referred to Transport for NSW

(Clause 104)

Note. The development specified in Column 1 may involve the erection of new premises or an enlargement or extension of existing premises. If the development involves an enlargement or extension of existing premises, the relevant size or capacity specified in the table is the additional (rather than the total) size or capacity of the premises as a result of the enlargement or extension.

Column 1	Column 2	Column 3
Purpose of development	Size or capacity—site with access to a road (generally)	Size or capacity—site with access to classified road or to road that connects to classified road (if access within 90m of connection, measured along alignment of connecting road)
Car parks (whether or not ancillary to other development)	200 or more car parking spaces	50 or more car parking spaces

As detailed in this report, the proposed sports facility makes provision for approximately 235 car parking spaces, thereby requiring referral to the TfNSW.

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site and the traffic conditions on that road network
- reviews the active and public transport options available in the vicinity of the site
- estimates the traffic generation potential of the development proposal and assigns that traffic generation to the road network serving the site
- assesses the traffic implications of the development proposal in terms of road network capacity
- reviews the geometric design features of the proposed parking and servicing facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street parking and servicing provided on the site.

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2. PROPOSED DEVELOPMENT

Site

The subject site is located on the northern side of Bestic Street, in between Highclere Street and *Brighton Fisho's* access driveway. The site has a street frontage approximately 150m in length to Bestic Street and occupies an area of approximately 17.8ha.

The subject site is currently occupied by 5 outdoor playing fields, including the main (northern) field which has a grandstand. The north-western corner of the site is currently a wetlands area whilst a shared driveway and pathway runs along the river foreshore, connecting Bestic Street to additional playing fields and the Barton Park driving range located on the northern side of the canal. A recent aerial image of the site and its surroundings is reproduced below.



Informal off-street parking is provided along the internal driveway and outside the main playing field. Vehicular access to the site is currently provided via a single entry/exit driveway located at the eastern end of the Bestic Street site frontage.

Streetview images of the existing vehicular access driveway off Bestic Street are reproduced below.





Proposed Development

The proposed development involves the demolition of the existing outdoor sports stadium and playing fields on the site, site establishment works as well as (limited) tree and vegetation removal. The proposal also involves the construction of a new outdoor sports facility, comprising the following:

- 4 playing fields
 - Field 1: 105m x 68m
 - Field 2: 105m x 68m
 - Field 3: 100m x 71m
 - Field 4: 60m x 45m
- 4 tennis courts
- 2 multi-purpose courts
- a grandstand (for Field 1 only), including change rooms, amenities & media room
- clubhouse
- play area
- fitness park
- walking/cycling paths
- other associated infrastructure.

Off-street parking is to be provided for a total of approximately 235 cars in four separate, formal outdoor parking areas, in accordance with expected operational requirements. Overflow parking is also proposed for an additional 100 cars on Field 4 during peak spectator periods such as a high-level soccer game on Field 1. Vehicular access to the site is to be provided via a new entry/exit driveway located at the eastern end of the Bestic Street site frontage, in essentially the same location as the existing driveway, albeit widened in accordance with *AS2890* requirements.

The proposed works also involve new linemarking to Bestic Street in the vicinity of the new driveway, with a "seagull" treatment for right-turn movements in/out of the site, as well as a new dedicated left deceleration lane. The existing road geometry of Bestic Street is such that, other than the widening of the existing driveway and the new linemarking, no other road works are required. A concept plan of the access driveway is reproduced in Appendix A.

Loading/servicing for the proposed development is expected to be undertaken by a variety of commercial vehicles, ranging from vans and utilities up to and including small and medium rigid trucks. Service vehicles will typically comprise food and drink deliveries to the canteen, garbage collection and maintenance. Service vehicles will be scheduled to arrive *outside* of peak periods, when the car park and other areas of the site will be largely empty.

In addition, tourist coaches up to 14.5m in length are also expected to access the site, particularly during large events and school outings. A dedicated bus drop-off/pick-up area is proposed to be provided directly outside Field 1. Furthermore, a bus parking area is also proposed opposite Car Park 3, in order to keep the bus drop-off/pick-up area as clear as possible.

Vehicular access to the site for service vehicles is to be provided via the abovementioned proposed site access driveway off Bestic Street.

Architectural plans of the proposed development have been prepared by *MODE* and are reproduced in Appendix B whilst civil plans have been prepared by *SprortEng* and are reproduced in Appendix C.

Expected Operational Characteristics

Advice received from Council indicates that the proposed facility will operate all-year-round with the following characteristics:

- gates opened daily at 5:30am for early fitness training
- gates closed daily at 10:00pm after end of evening sporting matches
- on-site peak periods likely to be weekends during winter
- on-road network peak periods likely to be weekday afternoons
- potential for all 4 playing fields and all 4 tennis courts to be used concurrently

In order to assess the traffic and parking characteristics of the proposed facility, a number of assumptions have been made, as set out in the table below.

Parameter	Description	Notes
Peak use of the site	Winter weekends on competition	
	days	
Number of fields in use	3 x full sized fields & 1 x 2/3 sized	
simultaneously	field	
Number of courts in use	4 tennis courts	
simultaneously		
Total number of players at any	3 fields x 16 x 2 teams = 96	4 field matches & 4 tennis matches
given time	1 field x 10 x 2 teams = 20	16 players per side, full sized
	4 courts x 4 players $= 16$	10 players per side, 2/3 sized
	Total peak players = 132 players	4 players per tennis court
	Total officials = 8	
% of players/officials	75%	Allows for drop-off, public and
that drive/park on site		active transport
% of players that remain on site for	10%	
more than one game		
Spectators/officials per game that	25% x number of players	
drive/park on site		

3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

The Princes Highway is classified by the RMS as a *State Road* and provides the key northsouth road link in the area, linking St Peters to Heathcote and beyond. It typically carries three traffic lanes in each direction in the vicinity of the site, with kerbside parking generally permitted outside of commuter peak periods.

General Holmes Drive is also classified by the RMS as a *State Road* and provides another key north-south road link in the area, linking the M5 East Motorway and the Grand Parade. It also typically carries three traffic lanes in each direction in the vicinity of the site, with turning lanes provided at key locations.

Bay Street is also classified by the RMS as a *State Road* and provides the key east-west road link in the area, linking The Grand Parade to the Princes Highway. It typically carries two traffic lanes in each direction in the vicinity of the site with turning bays provided at key locations.

West Botany Street is classified by the RMS as a *Regional Road* which provides a northsouth road link between Wickham Street and President Avenue. It typically carries one traffic lane in each direction in the vicinity of the site.

Bestic Street is also classified by the RMS as a *Regional Road* which provides another eastwest road link between Princes Highway and The Grand Parade. It typically carries one traffic lane in each direction, with kerbside parking generally permitted along both sides of the road in the vicinity of the site, subject to signposted restrictions.



Existing Public Transport Services

There are currently 2 bus routes travelling within approximately 500m of the site, consisting of the 422 and 479 services, as depicted in the bus network map below. These services also connect with train services at numerous suburban railway stations including Kogarah, Central, Newtown and Rockdale.

The 422 service operates between Kogarah and Haymarket, 7 days per week, via Camperdown, Newtown, Tempe and Rockdale.

The 479 service is a loop service operating between Rockdale and Kyeemagh, Monday to Saturday only, via Brighton-Le-Sands.



Bicycle & Footpath Network

The bicycle network in the vicinity of the site is shown in the map on the following page which is from RMS's website. Cycling can potentially save travel time as well as being an ideal way to save money, stay active and protect the environment.

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Of particular benefit are existing off-road cycle paths, including along the site river foreshore, extending along the Cooks River from Strathfield to the Georges River at Taren Point.

In addition, sealed footpaths are provided throughout the local area, including along the entire Bestic Street site frontage, thereby providing a safe means of pedestrian access to/from the site. The proposed masterplan also includes a series of internal pathways throughout the site.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 60 km/h SPEED LIMIT which applies to Bestic Street
- a 50 km/h SPEED LIMIT which applies to all other local roads in the area
- TRAFFIC SIGNALS in Bestic Street where it intersects with West Botany Street
- a ROUNDABOUT in Bestic Street where it intersects with Francis Avenue and the Brighton Fisho's access driveway.



Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by peak period traffic surveys undertaken as part of this traffic study. The traffic surveys were undertaken at the West Botany Street and Bestic Street intersection as well as the Bestic Street, Francis Avenue and *Fisho's* site access driveway intersection on Monday 12th and Saturday 17th October 2020. The results of the traffic surveys are reproduced in full in Appendix D and reveal that:

- the weekday afternoon peak period occurred between 5:00pm and 6:00pm
- the Saturday peak period occurred between 11:45am and 12:45pm
- during the weekday afternoon network peak period, two-way traffic flows in Bestic Street, past the site frontage, were typically in the order of 1,300 vehicles per hour (vph), comprising approximately 550 vph *eastbound* and approximately 750 vph *westbound*
- during the Saturday network peak period, two-way traffic flows in Bestic Street, past the site frontage, were typically in the order of 1,150 vph, comprising approximately 650 vph *eastbound* and 500 vph *westbound*.

By way of comparison, reference is also made to peak period traffic surveys undertaken as part of a previous traffic study in the vicinity of the site (*Cook Cove Southern Precinct Traffic Impact Assessment – ARUP – November 2016*). The traffic surveys were undertaken at the West Botany Street and Bestic Street intersection as well as the Bestic Street and Barton Park site access driveway intersection in August 2016. The results of the 2016 traffic surveys indicated that:

- the weekday morning peak period occurred between 7:45am-8:45am
- the weekday afternoon peak period occurred between 4:45pm-5:45pm

- during the weekday morning network peak period, two-way traffic flows in Bestic Street, past the site frontage, were typically in the order of 1,300 vph, comprising approximately 900 vph *eastbound* and 400 vph *westbound*
- during the weekday afternoon network peak period, two-way traffic flows in Bestic Street, past the site frontage, were typically in the order of 1,200 vph, comprising approximately 500 vph *eastbound* and 700 vph *westbound*
- during the weekday morning network peak period, two-way traffic flows into/out of Barton Park was in the order of 4 vph, comprising approximately 1 *entry* movement and 3 *exit* movements
- during the weekday afternoon network peak period, two-way traffic flows into/out of Barton Park was in the order of 65 vph, comprising approximately 42 *entry* movements and 23 *exit* movements.

Projected Traffic Generation

The traffic implications of development proposals primarily concern the effects of the *additional* traffic flows generated as a result of a development and its impact on the operational performance of the adjacent road network.

An indication of the traffic generation potential of most development types is provided by reference to the Roads and Maritime Services publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)* and the updated traffic generation rates in the RMS *Technical Direction* (TDT 2013/04a) document.

However, neither the RMS *Guidelines* nor the TDT 2013/04a nominate traffic generation rates for sporting and recreational complexes. In order to determine the traffic generation potential of the proposed sporting facility, reference is made to the anticipated operational characteristics of the facility, detailed in Chapter 2 of this report, including the table on the following page.

Parameter	Description	Notes
Peak use of the site	Winter weekends on competition	
	days	
Number of fields in use	3 x full sized fields & 1 x 2/3 sized	
simultaneously	field	
Number of courts in use	4 tennis courts	
simultaneously		
Total number of players at any	3 fields x 16 x 2 teams = 96	4 field matches & 4 tennis matches
given time	1 field x 10 x 2 teams = 20	16 players per side, full sized
	4 courts x 4 players $= 16$	10 players per side, 2/3 sized
	Total peak players = 132 players	4 players per tennis court
	Total officials = 8	
% of players/officials	75%	Allows for drop-off, public and
that drive/park on site		active transport
% of players that remain on site for	10%	
more than one game		
Spectators/officials per game that	25% x number of players	
drive/park on site		

In order to determine the absolute *worst case* scenario, it has been assumed that all 4 soccer games and all 4 tennis matches will finish during the weekday afternoon *and* Saturday network peak periods, whilst the next 4 soccer games and 4 tennis matches will also commence during the same weekday afternoon *and* Saturday network peak periods. Factoring in spectators, this equates to 132 vehicle movements *into* Barton Park and 132 vehicle movements *out of* Barton Park.

In practice however, the traffic generation potential of the proposed sporting complex will likely be significantly less than the methodology adopted.

In any event, that projected level of traffic activity as a consequence of the development proposal will not have any unacceptable traffic implications in terms of road network capacity, as is demonstrated by the following section of this report.

Traffic Implications - Road Network Capacity

The traffic implications of development proposals primarily concern the effects that any *additional* traffic flows may have on the operational performance of the nearby road network. Those effects can be assessed using the SIDRA NETWORK program which is widely used by the RMS and many LGA's for this purpose. Criteria for evaluating the results of SIDRA analysis are reproduced in the following pages, whilst SIDRA movement summaries are reproduced in Appendix E.

The results of the SIDRA NETWORK capacity analysis of the surrounding intersections are summarised in the table on the following page, revealing that:

- the Bestic Street & West Botany Street intersection currently operates at *Level of Service "C"* under the existing traffic conditions, which is expected to increase to *Level of Service "D"* under the proposed scenario. In this regard, the weekday PM parking restrictions along both sides of Bestic Street, on the approach and departure sides of the intersection, have also been adopted under the Saturday scenario. Consideration may also need to be given to investigating further parking restrictions along West Botany Street on Saturdays, to ensure the *Level of Service* remains unchanged between the existing and proposed scenarios.
- the Bestic Street & Francis Avenue intersection currently operates at *Level of Service* "A" under the existing traffic conditions and will continue to operate at *Level of Service* "A" under the proposed scenario
- the proposed new Bestic Street & Barton Park access driveway intersection is expected to operate at *Level of Service "A"* under the proposed scenario, with minimal delays and queue lengths on all approaches.

In essence, the rigorous capacity analysis confirms that the traffic generation potential of the development proposal on the subject site will not have any appreciable effect on the performance of nearby intersections (with minimal delays on all approaches), and that no further upgrades will be required beyond the proposed widening and re-linemarking of the site access driveway.

SUMMARY RESULTS OF SIDRA NETWORK ANALYSIS OF SURROUNDING ROAD NETWORK				
Kay Indicators	Existing Traffic Demand		Projected Development Traffic Demand	
Rey Indicators	PM	SAT	PM	SAT
Bestic St & West Botany St				
LOS	С	С	D	D
DOS	0.883	0.868	0.929	0.933
AVD (Sec/Veh)	38.4	33.7	52.3	44.2
Bestic St & Barton Park Access				
LOS	-	-	А	А
DOS	-	-	0.277	0.326
AVD (Sec/Veh)	-	-	1.7	1.8
Bestic St, Francis Ave & Fisho's				
LOS	А	А	А	А
DOS	0.560	0.437	0.577	0.454
AVD (Sec/Veh)	5.7	5.6	6.0	5.4

Γ

LOS – Level of Service; DOS – Degree of Saturation; AVD – Average Vehicle Delays

In any event, it is clear that the proposed development will not have any unacceptable traffic implications in terms of road network capacity.

Criteria for Interpreting Results of Sidra Analysis

1. Level of Service (LOS)

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good operation.	Good operation.
'B'	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
'C'	Satisfactory.	Satisfactory but accident study required.
'D'	Operating near capacity.	Near capacity and accident study required.
Έ'	At capacity; at signals incidents will cause excessive	At capacity and requires other control mode.
	delays. Roundabouts require other control mode.	
'F'	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode.

2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
А	less than 14	Good operation.	Good operation.
В	15 to 28	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
С	29 to 42	Satisfactory.	Satisfactory but accident study required.
D	43 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.

3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by traffic signals¹ both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a roundabout or GIVE WAY or STOP signs, satisfactory intersection operation is indicated by a DS of 0.8 or less.

¹

The values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those parking restrictions are:

- NO STOPPING restrictions along both sides of Bestic Street, extending from just west of the existing Barton Park access driveway to just east of the Francis Avenue roundabout
- generally UNRESTRICTED kerbside parking elsewhere along both sides of Bestic Street, including along the majority of the site frontage, and throughout the local area
- BUS ZONES located at regular intervals along both sides of West Botany Street.

Off-Street Car Parking Provisions

The off-street car parking rates applicable to most development types within the former Rockdale LGA are specified in Council's *Development Control Plan 2011, Part 4.6 – Car Parking, Access and Movement* document.

The *RDCP 2011* does not however nominate an off-street parking rate for outdoor playing fields or sporting grandstands. In fact, the vast majority or NSW Councils' *DCPs* as well as the RMS *Guidelines* also do not nominate an off-street parking rate for outdoor playing fields or sporting grandstands.

As per the traffic assessment undertaken in Chapter 3 of this report, in order to determine the traffic generation potential of the proposed sporting facility, reference is made to the anticipated operational characteristics of the facility, detailed in Chapter 2 of this report, including the table on the following page.

Parameter	Description	Notes
Peak use of the site	Winter weekends on competition	
	days	
Number of fields in use	3 x full sized fields & 1 x 2/3 sized	
simultaneously	field	
Number of courts in use	4 tennis courts	
simultaneously		
Total number of players at any	3 fields x 16 x 2 teams = 96	4 field matches & 4 tennis matches
given time	1 field x 10 x 2 teams = 20	16 players per side, full sized
	4 courts x 4 players $= 16$	10 players per side, 2/3 sized
	Total peak players = 132 players	4 players per tennis court
	Total officials = 8	
% of players/officials	75%	Allows for drop-off, public and
that drive/park on site		active transport
% of players that remain on site for	10%	
more than one game		
Spectators/officials per game that	25% x number of players	
drive/park on site		

Again, in order to determine the absolute *worst-case* scenario, it has been assumed that all 4 playing fields and 4 tennis courts will be used concurrently. Factoring in spectators and officials, this equates to 140 parked cars on site. If it is also assumed that 50% of players in the next time slot arrive early, there is the potential for 206 cars to be parked on site. This figure is expected to represent an *upper limit* of parking demand on a typical week-to-week basis.

The proposed masterplan makes provision for 235 car parking spaces, thereby satisfying this anticipated typical peak.

In addition, overflow parking is also proposed for an additional 100 cars on Field 4 during peak spectator periods such as a high-level soccer game on Field 1, noting that Field 4 will not have games operating during these periods.

The proposed development makes provision for a total of 235 permanent off-street parking spaces *plus* 100 overflow parking spaces, thereby satisfying the peak anticipated parking demand of the facility.

The geometric design layout of the proposed car parking areas facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* and *Parking Facilities Part 6 - Off-Street Parking for People with Disabilities AS2890.6* in respect of circulation roadways, parking bay dimensions (Class 2) and aisle widths.

The vehicular access arrangements have been designed to accommodate the swept turning path requirements of the B99 design vehicle as specified in *AS2890.1*, allowing them to circulate through the site without difficulty, and to enter and exit the site in a forward direction at all times.

Driver Sight Distance/Visibility

The driver sight distance/visibility requirements at the proposed exit driveway are specified in *Figure 3.2 Site Distance Requirements at Access Driveways* of *AS2890.1:2004* published by *Standards Australia* and also in *Chapter 3.4 Site Distance at Property Entrances* (*Austroads 2009*). The driver sight distance/visibility requirements in both publications are based on a minimum gap sight distance of 5 seconds. The relevant extract from *AS2890.1:2004* is reproduced below:

Frontage road speed (Note 4)	Distance (Y) along frontage road m Access driveways other than domestic (Note 5)		
	Desirable 5 s gap	Minimum SSD	
40	55	35	
50	69	45	
60	83	65	
70	97	85	
80	111	105	
90	125	130	

FIGURE 3.2 SIGHT DISTANCE REQUIREMENTS AT ACCESS DRIVEWAYS

The *Standards Australia* and *Austroads* publications both specify a minimum safe stopping driver sight distance/visibility of 83m for a frontage road speed of 60 km/h.

The proposed exit driveway in Bestic Street achieves a driver sight distance/visibility *in excess* of 150m in both directions, thereby comfortably satisfying the minimum Standards Australia and *Austroads* requirements.

Site Access Driveway

As noted in the foregoing, traffic volume data along Bestic Street in the vicinity of the site access driveway are in the order of 550 vph *eastbound* and approximately 750 vph *westbound* during the weekday afternoon peak period, and in the order of approximately 650 vph *eastbound* and 500 vph *westbound* during the Saturday peak period.

In order to determine the appropriate access treatment, reference is made to *Austroads Guide* to *Traffic Management Part 6: Intersections, Interchanges and Crossings*, and in particular *Figure 2.26(c): Warrants for turn treatments on major roads at unsignalised intersections* as well as *Figure 2.27: Calculation of the major road traffic volumes Q_M*. Extracts of both figures are reproduced below and on the following page.





⁽c) Design Speed < 100 km/h



Figure 2.27: Calculation of the major road traffic volume Q_M

As detailed in Chapter 3 of this report, it is estimated that the proposed outdoor sports facility could potentially generate up to 264 vehicle trips during the weekday afternoon and Saturday peak periods (i.e. 132 trips IN & 132 trips OUT). For the purposes of this assessment, it has also been assumed that traffic distribution associated with the proposed development will be split 80/20 west/east.

When the above parameters are considered in the context of Figure 2.26(c) and Figure 2.27, the proposed development requires the provision of an AUL/CHL for the left turn entry movements and a CHR for the right turn entry movements. Extracts of those turning treatments are reproduced below and on the following page.

7.5.2 Urban Channelised T-junction – Short Lane Type CHR(S)

A more desirable treatment than the BAR is a CHR(S) turn treatment as shown in Figure 7.7. CHR(S) turn treatments should not be used where there is reduced visibility to the turn treatment. Right-turning drivers on the major road need to perceive the location of the deceleration lane and the side road in time to make the necessary speed reduction in the through lane prior to diverging.



8.2.3 Rural Auxiliary Left-turn Lane Treatment (AUL)

A diagram of an AUL turn treatment on the major leg of a rural road is shown in Figure 8.4. The length of the auxiliary left-turn lane should not be restricted to the minimum if there is little difficulty in making it longer and the demand warrants the treatment (refer to *AGTM Part 6* (Austroads 2013a)).





In this instance, it is recommended to formally linemark AUL(S) and CHR(S) "seagull" turning treatments into the proposed development, as per the marked up aerial concept below. The existing road carriageway width of Bestic Street is sufficient in its current form to accommodate these treatments, and no road widening is required. A concept plan of the proposed access driveway is reproduced in Appendix A and below.



Off-Street Bicycle & Motorcycle Parking Provisions

The off-street bicycle and motorcycle parking requirements applicable to most development types within the former Rockdale LGA are also specified in Council's *Development Control Plan 2011, Part 4.6 – Car Parking, Access and Movement* document. The *RDCP 2011* does not however nominate an off-street bicycle or motorcycle parking rate for outdoor playing fields or sporting grandstands.

Discussions with Council has suggested providing 20 bicycle spaces per playing field, thereby requiring 80 bicycle spaces in total. The proposed development makes provision for 55 bicycle spaces located throughout the site. Given the scale of the development it is expected that additional bicycle parking could be included if necessary, and could be conditioned accordingly should the DA be approved.

Council also suggests providing motorcycle parking at a rate of *1 motorcycle space per 15 car spaces*, thereby requiring in the order of 16 spaces. Consideration could therefore be given to converting 2 car parking spaces within each of the 4 car parking areas to motorcycle parking, equating to a reduction of 8 car spaces but the provision of 16 motorcycle spaces. Again, given the scale of the development it is expected that motorcycle parking could be included if necessary, and could be conditioned accordingly should the DA be approved.

Recommendations and Considerations

In order to ensure the proposed access driveway and on-site parking areas operate safely and efficiently, the following recommendations and considerations are provided:

- signage at the vehicular entry to the site, indicating that the largest vehicle that can access the site is a 14.5m rigid vehicle
- signage at the vehicular exit from the site, advising drivers that vehicles larger than 8.8m in length must turn right out of the site
- consider installing timed parking restrictions throughout all or some of the car park to ensure parking is turned over

- installing suitable wayfinding signage throughout the internal roadway and car parking areas
- providing on-site bus parking in addition to the proposed bus set-down/pick-up area outside Field 1
- signposting a suitable speed limit sign throughout the internal roadway system, in addition to speed humps, in order to ensure vehicle speeds are minimised.

Loading/Servicing Provisions

The proposed new sporting facility is expected to be serviced by a variety of commercial vehicles up to and including 14.5m long tourist coaches. The vehicular access driveway and internal roadway system have been designed to accommodate the swept turning path requirements of these service vehicles, allowing them to enter and exit the site in a forward direction at all times.

Conclusion

The foregoing has found that the two nearby intersections are expected to continue to operate at acceptable *Levels of Service* under the proposed scenario (with minimal delays on all approaches), and that other than the re-linemarking and widening of the vehicular access driveway, no further infrastructure upgrades or road widening will be required.

Furthermore, the proposed provision of 240 off-street car parking spaces in addition to 48 bicycle spaces and 48 motorcycle spaces is expected to satisfy the parking requirements of the proposed sporting complex, including during peak operational periods.

In the circumstances, it is therefore reasonable to conclude that the proposed development will not have any unacceptable implications in terms of road network capacity or off-street parking, servicing or site access requirements.

APPENDIX A

ACCESS DRIVEWAY CONCEPT PLAN

PROPOSED TURNING ARROWS & CHEVRON LINE-MARKING TO DELINEATE TURNING TREATMENTS WHILST MAINTAINING EXISTING LANE WIDTHS

> **EXISTING CHEVRON &** LINE-MARKING TO BE REMOVED

VARGA TRAFFIC PLANNING Pty Ltd ABN 88 071 762 537 Sulte 6, Level 1 20 Young Street Neutral Bay, NSW 2089 Phone +61 2 9904 3224 PO Box 1868 Neutral Bay, NSW 2089

PROJECT

BARTON PARK ACCESS DRIVEWAY



CONCEPT SEAGULL TURNING TREATMENT Turning Treatment along Bestic Street onto Site Access Driveway ADDRESS

90-96 Bestic Street, Arncliffe

PROJECT NO. 20270 REVIEWED CHRIS PALMER 1:600 @ A3

DATE DRAWN 2021-8-20 DONALD LEE



APPENDIX B

ARCHITECTURAL PLANS

Vehicular Access & Carparking



LEGEND

Two-way access road
Two-way carpark circulation
One-way carpark circulation
Pedestrian access (marked)



Potential event parking Emergency/maintenance vehicle access (turf cell) Potential overflow parking



Detailed Design Package - Rev E - 24/05/2021

Vehicular Access & Carparking - 1 & 2



LEGEND



Two-way carpark circulation

→ One-way carpark circulation

///// Pedestrian access (marked)

Carparking - general DDA carspaces to future design development Bus / Coach drop-off bay **C D** Potential event parking

E E Emergency/maintenance vehicle access

MODE BARTON PARK


Vehicular Access & Carparking - 3 & 4





Two-way access road
Two-way carpark circulation
One-way carpark circulation

///// Pedestrian access (marked)



Carparking - general

E E Emergency/maintenance vehicle access

MODE BARTON PARK



7

Long term bus parking - under design development





Two-way access road Two-way carpark circulation One-way carpark circulation

///// Pedestrian access (marked)



MODE BARTON PARK



APPENDIX C

CIVIL PLANS & TURN PATHS





NATURAL TURF

0 10m 50m SCALE 1:1000 @ A1 Job Title BARTON PARK Discipline FIELD OF PLAY Drawing Title Drawing Status TENDER 50% GENERAL ARRANGEMENT LAYOUT PLAN - FIELD OF PLAY Drawing Number Issue SHEET 1 OF 6 SE_10635_F200 PT3



PLOT DATE: 20/08/2021 PLOT TIME: 3:32 PM FILE PATH: C:\12dS\data\SPORTENG\10635 Barton Park_813\02 Internal Project Data\Drawings\Sheets\SE_10635_F201.dwg



















© SPORTENG

APPENDIX D

TRAFFIC SURVEY DATA

	R.O.A.R. DATA Reliable, Original & Authentic Results Ph 88196847, Mob.0418-239019													Client Job No/Na	ame	: Varg : 7408	a Trafi BANk	fic Plar (SIA Be	ning estic St								
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1545 - 1600	39	157	1	2	32	0	1	77	35	61	97	47	549	1545 - 1645	181	641	2	9	166	0	12	359	164	219	357	139	2249
1600 - 1615	64	158	0	3	47	0	2	108	47	48	82	21	580	1600 - 1700	199	635	1	7	179	0	15	388	162	200	331	130	2247
1615 - 1630	37	172	1	1	23	0	6	91	32	55	74	25	517	1615 - 1715	184	659	1	7	189	0	24	389	172	217	341	146	2329
1630 - 1645	41	154	0	3	64	0	3	83	50	55	104	46	603	1630 - 1730	199	657	0	9	217	0	24	384	169	221	373	163	2416
1645 - 1700	57	151	0	0	45	0	4	106	33	42	71	38	547	1645 - 1745	205	702	0	6	221	0	22	387	154	227	364	151	2439
1700 - 1715	49	182	0	3	57	0	11	109	57	65	92	37	662	1700 - 1800	217	743	0	11	231	0	23	361	176	235	373	140	2510
1715 - 1730	52	170	0	3	51	0	6	86	29	59	106	42	604	1715 - 1815	245	710	0	11	226	0	16	334	172	225	365	136	2440
1730 - 1745	47	199	0	0	68	0	1	86	35	61	95	34	626	1730 - 1830	250	675	0	13	230	0	15	331	198	216	327	130	2385
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1800 - 1815	77	149	0	3	52	0	4	82	53	55	84	33	592	PEAK HOUR	217	743	0	11	231	0	23	361	176	235	373	140	2510
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1615 - 1630	37	174	1	1	23	0	6	95	32	56	74	25	524	1615 - 1715	184	668	1	7	189	0	24	397	172	218	341	147	2348
1630 - 1645	41	158	0	3	64	0	3	84	50	55	104	46	608	1630 - 1730	199	664	0	9	217	0	24	389	169	221	373	164	2429
1645 - 1700	57	153	0	0	45	0	4	107	33	42	71	38	550	1645 - 1745	205	707	0	6	221	0	22	391	154	228	364	152	2450
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1715 - 1730	52	170	0	3	51	0	6	87	29	59	106	42	605	1715 - 1815	245	717	0	12	226	0	16	338	172	226	365	139	2456
1730 - 1745	47	201	0	0	68	0	1	86	35	62	95	34	629	1730 - 1830	250	683	0	14	230	0	15	337	198	217	327	133	2404
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	R.O.A.R. DATA Reliable, Original & Authentic													Client		: Varg	a Traff	ic Plan	ning								
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1045 - 1100	38	84	0	5	63	0	2	100	41	30	61	48	4/2	1045 - 1145	176	393	0	18	225	1	21	397	189	120	239	181	1960
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1115 - 1130	47	92	0	7	61	0	1	105	43	32	45	47	480	1115 - 1215	201	411	0	20	218	0	24	421	196	102	232	175	2000
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1030 - 1045	0	0	0	0	0	0	0	1	0	0	0	0	1	1030 - 1130	0	3	0	0	0	0	0	7	0	0	0	1	11
1045 - 1100	0	1	0	0	0	0	0	3	0	0	0	1	5	1045 - 1145	0	3	0	0	0	0	0	8	0	0	0	1	12
1100 - 1115	0	1	0	0	0	0	0	1	0	0	0	0	2	1100 - 1200	0	6	0	0	0	0	0	6	0	0	0	0	12
1115 - 1130	0	1	0	0	0	0	0	2	0	0	0	0	3	1115 - 1215	0	6	0	0	0	0	0	5	0	0	0	1	12
1130 - 1145	0	0	0	0	0	0	0	2	0	0	0	0	2	1130 - 1230	0	5	0	0	0	0	0	3	0	0	0	1	9
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1000 - 1015	34	64	1	7	59	0	6	96	60	28	55	32	442	1000 - 1100	161	329	1	21	232	0	18	378	189	105	226	150	1810
1015 - 1030	46	85	0	4	55	0	5	101	50	20	55	27	448	1015 - 1115	175	379	0	15	219	1	21	378	179	103	233	154	1857
1030 - 1045	43	95	0	5	55	0	5	78	38	27	55	42	443	1030 - 1130	176	387	0	18	225	1	23	384	172	115	223	174	1898
1045 - 1100	38	85	0	5	63	0	2	103	41	30	61	49	477	1045 - 1145	176	396	0	18	225	1	21	405	189	120	239	182	1972
1100 - 1115	48	114	0	1	46	1	9	96	50	26	62	36	489	1100 - 1200	197	419	0	19	219	1	26	425	200	110	252	167	2035
1115 - 1130	47	93	0	7	61	0	7	107	43	32	45	47	489	1115 - 1215	201	417	0	20	218	0	24	426	196	102	232	176	2012
1130 - 1145	43	104	0	5	55	0	3	99	55	32	71	50	517	1130 - 1230	204	428	0	18	212	0	26	414	208	96	255	176	2037
1145 - 1200	59	108	0	6	57	0	7	123	52	20	74	34	540	1145 - 1245	224	454	0	17	221	0	37	434	228	100	243	165	2123
1200 - 1215	52	112	0	2	45	0	(97	46	18	42	45	466	1200 - 1300	233	478	0	16	205	U	37	398	224	115	224	169	2099
1215 - 1230	50	104	0	5	55	0	9	95	55 75	20	50	4/	514		204	AFA	^	47	204	^	27	42.4	220	100	242	405	24.22
1230 - 1245	03 60	130	0	4	04	0	14	97	10 10	30	59	30 30	516	FEAR HOUR	224	404	U	17	221	U	31	434	220	100	243	100	2123
Pariod End	501	1226	1	56	656	1	01	1201	+0 612	220	702	100	5044														
	391	1220		50	050	1	01	1201	013	330	102	400	J344														

	R.O.A.R D	АТА															
	Reliable. Origina	al & Authentic Re	sults						w	Bovan	/ St						
	Ph 88196847 Moh	0418-239019															
Client	· Varga Traff	ic Planning															
Job No/Na	ame : 7408 BANK	SIA Bestic St						616									
Dav/Dat	te : Saturday 1	7th October 2020				SAT	PFAK	613	0	6	0	6					
Dayiba						1145	i - 1245	3	0	448	224	672					
								-	0	454	224	678					
									1	1	1						
												•					
								•		V	Ļ	•		Besti	ic St		
						0 238	3 238 ->							0	673	673	➡
						0 17	7 17 ——	1				Ţ		165	163	2	
										0	4						
Peds	NORTH	WEST	SOUTH	EAST		0 22	1 221 ——	•			/	-	←	243	243	0	
	W Boyany St	Bestic St	W Botany St	Bestic St						DN							
Time Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	тот	0 (0 C	-				L L		100	100	0	
1000 - 1015	3	0	1	0	4	280 280	0	•						←	508	506 2	2
1015 - 1030	4	0	3	0	7	Bestic	St										
1030 - 1045	5	5	2	2	14			♠		•	I						
1045 - 1100	3	4	2	0	9				37	434	228						
1100 - 1115	2	0	0	3	5			699	37	433	228	6					
1115 - 1130	2	0	0	0	2			698	0	1	0	548	ļ				
1130 - 1145	2	2	2	0	6			1				554	ļ			N	
1145 - 1200	2	1	2	1	6								ļ			M	
1200 - 1215	0	2	0	0	2											A	
1215 - 1230	0	1	2	2	5				W	Botany	' St						
1230 - 1245	4	2	2	1	9	TOTAL					•						
1245 - 1300	1	2	1	1	5	VOLUMES			W	Boyany	/St						
Period End	28	19	1/	10	74	FOR COUNT					40						
			0.01/7/1			PERIOD			4740		10						
Peds	NORTH	WEST	SOUTH	EAST					1743		1802						
Deals Der		Bestic St		Bestic St	TOT				1724		1818						
1000 1100	UNCLASSIFIED		0	2	24				19								
1015 - 1115	1/	9	7	5	34						•						
1013 - 11130	14	9	4	5	30		0 713	713				0	1860	1860			
1045 - 1145	9	6	4	3	22			710						1000		1	
1100 - 1200	8	3	4	4	19		Bestic St						Besti	ic St			
1115 - 1215	6	5	4	1	16		- 784 784	0			-	1518	1512	6			
1130 - 1230	4	6	6	3	19			-	†					-			
1145 - 1245	6	6	6	4	22												
1200 - 1300	5	7	5	4	21				1895		16						
	-								1882		1541						
PEAK HR	6	6	6	4	22				13		1557		©	Copyrig	Jht ROA	R DATA	
											•						
	1 2	2	3						W	Botany	St						

	R.O.A.R. DATA Reliable, Original & Auther Pb 88196847 Mob.0418-2390						714							Client		: Varg	a Traf	fic Pla	nning	+							
			7 Ma	al & 1	Authe		tesuit	5								. 7400 : Mon	dov 12		tohor 2	020							
Limbto	P11.60	NODT	7, IVIO	0.041	0-2390	19		COLITI			FACT		1	Day/Dai	e					020		COLITU			FACT	<u> </u>	
Lights	Eid		l Iub		Postic	*	E,	anois	1		EAGI Postio S	*		Lights	Eid	NOR IF	1 Jub		WESI Postio S	*	E,		1 A 17		EAGI Postio 9	*	
Time Por		ло,з с Т	P			P				1		P	TOT	Poak Timo		ло,з с т				P						P	тот
1530 - 1545		1	3	2	<u>1</u>	<u> </u>	2	1	<u> </u>	13	<u>1</u>	3	338	1530 - 1630	<u> </u>	<u> </u>	<u>R</u>	<u> </u>	<u>1</u>	75	<u>∟</u> 24	<u> </u>	20	<u> </u>	685	<u> </u>	1205
1545 - 1600	2	1	3	2	03	21	2	0	9	10	100	0	330	1545 - 1645	11	4	7	0 8	401	75	24	0	29	40	670	5	1295
1600 - 1615	2	1	4	2	113	15	6	0	6	10	142	1	206	1600 - 1700	0	4	2	6	414	70	33	0	20	37	625	6	1260
1615 - 1630	5	1	1	3	02	16	8	0	8	10	142	2	230	1615 - 1715	12	2	1	7	430	81 81	42	0	20	30	631	6	1200
1620 1645	2	1	1	2	92	22	11	0	6	0	170	2	247	1620 1720	7	2	4	5	431	70	42	0	24	41	680	0	12/9
1645 - 1700	0	0	0	0	115	24	8	0	5	8	174	1	300	1645 - 1745	1	0	2	4	456	86	45	0	10	30	681	4	1347
1700 - 1715	4	0	1	2	108	10	15	0	5	12	1/18	1	315	1700 - 1800	4	1		5	430	86	40	0	17	41	706	3	1340
1715 - 1730	4	0	1	1	110	14	15 Q	0	<u> </u>	12	210	0	385	1715 - 1815	1	1	7	4	443	83	47	0	17	34	712	7	1361
1730 - 1745	0	0	0	1	114	29	14	0	0	6	175	1	340	1730 - 1830	2	1	8	4	452	82	47	1	10	29	640	5	1281
1745 - 1800	0	1	2	1	108	24	9	0	3	10	164	2	324	1700 1000	~			<u> </u>	402	02	0		10	20	040		1201
1800 - 1815	1	0	4	1	111	16	15	0	5	5	154	0	312	PEAK HOUR	4	1	4	5	449	86	47	0	17	41	706	4	1364
1815 - 1830	1	0	2	0	119	13	10	1	2	8	147	2	305					•				Ţ					
Period End	17	6	20	16	1311	236	115	2	64	116	2005	15	3923														
		•						_	•••																		
<u>Heavies</u>		NORTH			WEST			SOUTH	1		EAST			<u>Heavies</u>		NORTH	1		WEST			SOUTH			EAST		
	Fis	sho,s C	lub	1	Bestic S	St	Fr	ancis /	4 <i>v</i>	E	Bestic S	t			Fis	sho,s C	lub		Bestic S	St	Fr	ancis A	41	Ľ	Bestic S	it	
Time Per	<u>L</u>	<u>T</u>	<u>R</u>	Ŀ	T	<u>R</u>	L	<u>T</u>	<u>R</u>	L	<u>T</u>	<u>R</u>	TOT	Peak Per	Ŀ	<u>T</u>	<u>R</u>	L	<u> </u>	<u>R</u>	L	<u>T</u>	<u>R</u>		<u> </u>	<u>R</u>	тот
1530 - 1545	0	0	0	0	0	0	0	0	0	0	0	0	0	1530 - 1630	0	0	0	0	0	0	0	0	0	0	1	0	1
1545 - 1600	0	0	0	0	0	0	0	0	0	0	0	0	0	1545 - 1645	0	0	0	0	0	0	0	0	0	0	1	0	1
1600 - 1615	0	0	0	0	0	0	0	0	0	0	0	0	0	1600 - 1700	0	0	0	0	0	0	0	0	0	0	2	0	2
1615 - 1630	0	0	0	0	0	0	0	0	0	0	1	0	1	1615 - 1715	0	0	0	0	0	0	0	0	0	0	2	0	2
1630 - 1645	0	0	0	0	0	0	0	0	0	0	0	0	0	1630 - 1730	0	0	0	0	0	0	0	0	0	0	1	0	1
1645 - 1700	0	0	0	0	0	0	0	0	0	0	1	0	1	1645 - 1745	0	0	0	0	0	0	0	0	0	0	1	0	1
1700 - 1715	0	0	0	0	0	0	0	0	0	0	0	0	0	1700 - 1800	0	0	0	0	0	0	0	0	0	0	3	0	3
1715 - 1730	0	0	0	0	0	0	0	0	0	0	0	0	0	1715 - 1815	0	0	0	0	0	0	0	0	0	0	3	0	3
1730 - 1745	0	0	0	0	0	0	0	0	0	0	0	0	0	1730 - 1830	0	0	0	0	0	0	0	0	0	0	3		3
1745 - 1800	0	0	0	0	0	0	0	0	0	0	3	0	3		•	•	•	•	•	•	•	•	•		•	-	•
1800 - 1815	0	0	0	0	0	0	0	0	0	0	0	0	0	PEAK HOUR	U	U	U	U	U	U	0	U	0	U	3	0	3
1815 - 1830	0	0	0	0	0	0	0	0	0	0	0	0	0														
Period End	U	U	U	U	U	U	U	U	U	U	5	U	Э														
Combined		NORTH			WEST			SOUTH	1		EAST			Combined		NORTH	1		WEST			SOUTH			EAST		
	Fis	sho,s C	lub	I	Bestic S	St	Fr	ancis /	4 <i>v</i>	E	Bestic S	t			Fis	sho,s C	lub	l	Bestic S	St	Fr	ancis A	4 <i>v</i>	Ŀ	Bestic S	it	
Time Per	L	<u>T</u>	<u>R</u>	L	T	<u>R</u>	L	<u>T</u>	<u>R</u>	L	<u>T</u>	<u>R</u>	тот	Peak Per	L	T	<u>R</u>	L	<u>T</u>	<u>R</u>	L	<u>T</u>	<u>R</u>	L	<u>T</u>	<u>R</u>	тот
1530 - 1545	0	1	3	2	103	21	2	1	9	13	180	3	338	1530 - 1630	8	4	8	8	401	75	24	1	29	46	686	6	1296
1545 - 1600	2	1	4	2	93	23	8	0	6	12	193	0	344	1545 - 1645	11	4	7	8	414	76	33	0	26	41	680	5	1305
1600 - 1615	1	1	0	1	113	15	6	0	6	10	142	1	296	1600 - 1700	9	3	3	6	436	77	33	0	25	37	627	6	1262
1615 - 1630	5	1	1	3	92	16	8	0	8	11	171	2	318	1615 - 1715	12	2	4	7	431	81	42	0	24	39	633	6	1281
1630 - 1645	3	1	2	2	116	22	11	0	6	8	174	2	347	1630 - 1730	7	1	4	5	458	79	43	0	25	41	681	4	1348
1645 - 1700	0	0	0	0	115	24	8	0	5	8	140	1	301	1645 - 1745	4	0	2	4	456	86	46	0	19	39	682	3	1341
1700 - 1715	4	0	1	2	108	19	15	0	5	12	148	1	315	1700 - 1800	4	1	4	5	449	86	47	0	17	41	709	4	1367
1715 - 1730	0	0	1	1	119	14	9	0	9	13	219	0	385	1715 - 1815	1	1	7	4	452	83	47	0	17	34	715	3	1364
1730 - 1745	0	0	0	1	114	29	14	0	0	6	175	1	340	1730 - 1830	2	1	8	3	452	82	48	1	10	29	643	5	1284
1745 - 1800	0	1	2	1	108	24	9	0	3	10	167	2	327														
1800 - 1815	1	0	4	1	111	16	15	0	5	5	154	0	312	PEAK HOUR	4	1	4	5	449	86	47	0	17	41	709	4	1367
1815 - 1830	1	0	2	0	119	13	10	1	2	8	147	2	305														
Period End	17	6	20	16	1311	236	115	2	64	116	2010	15	3928														

	R.O.A.R I	DATA																
	Reliable, Origi	inal & Authentic H	Results								Fis	sho.s (lub					
- D-N -	Ph 88196847 M	hh 0418-239019																
	111.00100047, 10	00.0410 200010																
Client	· Vorgo Tr									1 I								
	. varya 11a									-								
									9		•	0	0					
Day/Da	ie : Monday	12th October 2020					PM PE	AK	9		0	0	0	- 0				
							1700 - 1	800	0		4	1	4	9				
											4	1	4	9				
												_		•				
										-	H-1	•	└ ►		Bes	tic St		
						0	540	540 -	▶ ▲						C	470	470	-
						0	5	5 —						T_	4	4	0	
												0	4					
Peds	NORTH	WEST	SOUTH	EAST		0	449	449 —					4	•	709	706	3	
	Fisho,s Club	Bestic St	Francis Av	Bestic St								P D A						
Time Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	тот	0	86	86 —							41	41	0	
1530 - 1545	0	0	0	0	0	← 760 7	757 3		•						-	754	751	3
1545 - 1600	2	0	0	4	6	Be	stic St			-		T				-		
1600 - 1615	2	1	1	1	5					A								
1615 - 1630	2	0	0	2	4						47	0	17					
1630 - 1645	5	0	3	2	10					64	47	0	17	0				
1645 - 1700	5	0	0	2	7					64	0	0	0	128				
1700 - 1715	3	1	1	2	7					0	Ū		Ū	128			N	
1715 - 1730	4	0	0	5	9					Ū							1	
1730 - 1745	5	2	2	2	11									*				-
1745 - 1800	5	2	2	2	11				-		FI	rancis	Av				-V-	
1800 - 1815	6	1	1	4	12	TOTAL												
1815 - 1830	7	0	2	4	13	VOLUMES	s				Fis	sho.s C	lub					
Period End	46	7	12	30	95	FOR COUN	JT											
T CHOU ENU		· · ·	12	50	00	PERIOD					-T		0					
Pade		WEST	SOUTH	EAST		TERIOD					33		13					
reus	Eisho s Club	Bostic St	Erancis Av	Bostic St							33		43 13					
Poak Por					тот						0		43					
1520 1620	<u>ONCLASSIFIED</u>			7	101						U							
1550 - 1630	0	4		1	10								•					
1040 1700	11	1	4	9 7	20			0 4	1560	1560				<u> </u>	1202 4200			
1600 - 1700	14		4	1	26			0	1563	1563				0	1392 1392		-	
1615 - 1715	15	1	4	8	28				01									
1630 - 1730	17	1	4	11	33			Bestic	51						Bestic St			
1645 - 1745	1/	3	3	11	34	-	← 21	145 21	40 5		-		←	2141 2'	136 5			
1700 - 1800	17	5	5	11	38													
1715 - 1815	20	5	5	13	43						1							
1730 - 1830	23	5	7	12	47						181		0					
											181		358					
PEAK HR	17	5	5	11	38						0		358		© Copyr	ght RO	AR DAT	A
													▼					
	1	2									FI	rancis	Av					

	R.O.A.R. DATA Reliable, Original & Authenti Ph.88196847, Mob.0418-239019 Ints NORTH WEST					tic Re	sults							Client Job No/Na	ame	: Varg : 7408	a Traff BANK	ic Plan (SIA Be	ning estic St	020							
Lights	111.00	NORTH	, 1000 I	.0410-	WEST			SOUTH			FAST			Lights	.0	NORTH	1003		WEST	020		SOUTH			FAST		1
Ligito	Fis	sho.s C	lub		Bestic S	t	FI	rancis A	lv.		Bestic S	t		Lights	Fi	sho.s C	Iub		Bestic S	St.	FI	rancis	4 <i>v</i>		Bestic S	t	-
Time Per	L	T	R	L	Т	R	L	Т	R	L	T	R	тот	Peak Time	L	T	R	L	T	R	L	Т	R	L	Т	R	тот
1000 - 1015	0	0	4	4	118	11	9	1	3	5	103	3	261	1000 - 1100	1	0	11	6	494	46	29	2	24	17	418	7	1055
1015 - 1030	1	0	3	1	126	12	2	0	9	3	88	1	246	1015 - 1115	2	0	7	3	492	52	32	1	25	22	424	7	1067
1030 - 1045	0	0	3	0	119	10	11	1	3	4	116	2	269	1030 - 1130	3	1	7	8	487	55	43	1	20	22	441	7	1095
1045 - 1100	0	0	1	1	131	13	7	0	9	5	111	1	279	1045 - 1145	4	1	10	10	498	60	46	1	24	21	449	5	1129
1100 - 1115	1	0	0	1	116	17	12	0	4	10	109	3	273	1100 - 1200	5	1	13	13	508	64	48	2	21	26	452	4	1157
1115 - 1130	2	1	3	6	121	15	13	0	4	3	105	1	274	1115 - 1215	4	2	16	15	508	72	50	2	24	23	431	3	1150
1130 - 1145	1	0	6	2	130	15	14	1	7	3	124	0	303	1130 - 1230	3	1	15	9	521	78	46	3	30	26	449	5	1186
1145 - 1200	1	0	4	4	141	17	9	1	6	10	114	0	307	1145 - 1245	4	1	10	12	540	83	45	3	30	37	447	7	1219
1200 - 1215	0	1	3	3	116	25	14	0	7	7	88	2	266	1200 - 1300	3	1	8	9	538	88	49	3	31	35	443	9	1217
1215 - 1230	1	0	2	0	134	21	9	1	10	6	123	3	310														
1230 - 1245	2	0	1	5	149	20	13	1	7	14	122	2	336	PEAK HOUR	4	1	10	12	540	83	45	3	30	37	447	7	1219
1245 - 1300	0	0	2	1	139	22	13	1	7	8	110	2	305														
Period End	9	2	32	28	1540	198	126	7	76	78	1313	20	3429														
Lleevice		NODTI			WEGT			COLITU			FACT			Usavias		NODTI			WEGT			COLITI			FACT		-
Heavies	Fie	NORTE	 		WESI Pootio C	**	_	SOUTH	1.7		EASI Deatia S	4		Heavies		NURTH	1		WESI Bootio C	~	E.	50011	1		EASI Bootio S		-
Timo Por		5/10,S C							1V D				TOT	Book Bor		S/10,S C							47			<u> </u>	тот
1000 1015			<u> </u>		<u> </u>	<u> </u>		<u> </u>	<u> </u>		<u> </u>	<u> </u>	0	1000 1100	<u> </u>		<u> </u>		<u> </u>				<u> </u>		<u> </u>	<u> </u>	101
1015 1020	0	0	0	0	0	0	0	0	0	0	0	0	2	1015 1115	0	0	0	0	0	0	0	0	0	0	2		2
1015 - 1030	0	0	0	0	0	0	0	0	0	0	2	0	2	1013 - 1113	0	0	0	0	0	0	0	0	0	0	3		1
1045 - 1100	0	0	0	0	0	0	0	0	0	0	1	0	1	1045 - 1145	0	0	0	0	0	0	0	0	0	0	1		1
1100 - 1115	0	0	0	0	0	0	0	0	0	0	0	0	0	1100 - 1200	0	0	0	0	0	0	0	0	0	0	0		0
1115 - 1130	0	0	0	0	0	0	0	0	0	0	0	0	0	1115 - 1215	0	0	0	0	0	0	0	0	0	0	1		1
1130 - 1145	0	0	0	0	0	0	0	0	0	0	0	0	0	1130 - 1230	0	0	0	0	0	0	0	0	0	0	1		1
1145 - 1200	0	0	0	0	0	0	0	0	0	0	0	0	0	1145 - 1245	0	0	0	0	0	0	0	0	0	0	1	0	1
1200 - 1215	0	0	0	0	0	0	0	0	0	0	1	0	1	1200 - 1300	0	0	0	0	0	0	0	0	0	0	2	0	2
1215 - 1230	0	0	0	0	0	0	0	0	0	0	0	0	0		-	-	Ţ	-						Ť			
1230 - 1245	0	0	0	0	0	0	0	0	0	0	0	0	0	PEAK HOUR	0	0	0	0	0	0	0	0	0	0	1	0	1
1245 - 1300	0	0	0	0	0	0	0	0	0	0	1	0	1		-	-				-							
Period End	0	0	0	0	0	0	0	0	0	0	5	0	5														
																											-
<u>Combined</u>		NORTH			WEST			SOUTH	-		EAST			<u>Combined</u>		NORTH			WEST		_	SOUTH	1		EAST		_
	Fis	sho,s C		. /	Bestic S	t	- H	rancis A	10		Bestic S	t	TOT		H	sho,s C		. '	Bestic S	St -	- FI	rancis /	41	. '	Bestic S	<u>t</u>	TOT
Time Per		<u> </u>	<u>R</u>		<u> </u>	<u>R</u>		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	101	Peak Per	<u> </u>		<u>R</u>		<u> </u>	<u>R</u>		<u> </u>	<u>R</u>		<u> </u>	<u></u>	101
1000 - 1015	0	0	4	4	118	11	9	1	3	5	103	3	261	1000 - 1100	1	0	11	6	494	46	29	2	24	17	421	-7	1058
1015 - 1030	1	0	3	1	126	12	2	0	9	3	90	1	248	1015 - 1115	2	0	7	3	492	52	32	1	25	22	427		1070
1030 - 1045	0	0	3	0	119	10	11	1	3	4	116	2	269	1030 - 1130	3	1	1	8	487	55	43	1	20	22	442		1096
1045 - 1100	1	0	0	1	131	13	12	0	9	5 10	100	2	280	1045 - 1145	4	1	10	10	498	64	40	2	24	21	450	2 4	1150
1100 - 1115	1	0	0	1	110	17	12	0	4	10	109	3	273	1100 - 1200	5	1	13	13	508	04	48	2	21	20	452	4	1157
1120 1145	∠ 		3 6	0	121	15	13	0	4	3	105	0	2/4	1110 - 1215	4	4	10	10	508	70	50	2	24	23	432	<u>ح</u>	1101
1130 - 1145	1	0	0	Z 	1.30	10	0	1	6	3 10	124	0	303	1145 1245	3	1	10	12	521	10 92	40	3 2	30	20	430		1220
1200 - 1215	0	1	4	4	141	25	9 14	0	0 7	10	80	2	267	1200 - 1200	4	1	10 0	12	529	20	40	2	30	37	440	<u> </u>	1220
1215 - 1220	1	0	2	0	13/	20	0 0	1	10	6	123	2	310	1200 - 1300	5	1	U	J	550	00	43	5	51	55	445	3	1219
1230 - 1245	2	0	1	5	149	20	13	1	7	14	123	2	336	PEAK HOUR	4	1	10	12	540	83	45	3	30	37	448	7	1220
1245 - 1300	0	0	2	1	139	22	13	1	7	8	111	2	306	,	-	-			0.40		-70	5		5.		<u> </u>	
Period End	9	2	32	28	1540	198	126	7	76	78	1318	20	3434														

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									▲								
Client	: Varga Traff	ic Planning															
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Day/Dat	e : Saturday 1	7th October 2020					SAT	PEAK	22	0	0	0	C	נ			
-							1145	- 1245	0	10	1	4	15	5			
										10	1	4	15	5			
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						0	12	12				\			- 1	- '	0
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Time Der					TOT	0	02	02							27	27	0
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1000 - 1015	4	2	1	1	0	<u> </u>	502			н	-		•	·'	_	492	491 1
1015 - 1030	2	0	0	2	4	В	estic .	St									
1030 - 1045	4	0	0	3	1					1		1		_			
1045 - 1100	5	6	1	3	15					45	3	30		_			
1100 - 1115	0	0	2	3	5				78	45	3	30	0	_			
1115 - 1130	7	0	1	1	9				78	0	0	0	121				
1130 - 1145	2	0	0	0	2				0				121	_			N
1145 - 1200	2	0	1	7	10												Na
1200 - 1215	3	0	0	1	4								V				AF
1215 - 1230	3	0	0	6	9					Fra	ancis /	4v					•
1230 - 1245	3	0	2	7	12	TOTAL	-										
1245 - 1300	1	0	0	5	6	VOLUME	ES			Fis	ho,s C	lub					
Period End	36	8	8	39	91	FOR COU	JNT			▲							
						PERIO	D					0					
Peds	NORTH	WEST	SOUTH	EAST						55		43					
	Fisho,s Club	Bestic St	Francis Av	Bestic St						55		43					
Peak Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	тот					0		1					
1000 - 1100	15	8	2	9	34												
1015 - 1115	11	6	3	11	31							۲	1				
1030 - 1130	16	6	4	10	36			0 176	66 1766	\rightarrow			C) 1625	1625		
1045 - 1145	14	6	4	7	31								—	===	_		
1100 - 1200	11	0	4	11	26			Bestic St	t					Bestic	: St		
1115 - 1215	14	0	2	9	25		-	1476 147	1 5			◀	1416	1411 5	;		
1130 - 1230	10	0	1	14	25				-	1			1				
1145 - 1245	11	0	3	21	35								-				
1200 - 1300	10	0	2	19	31					209		0	-				
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PEAK HR	11	0	3	21	35					0		278	+	© (Copyrig	Iht ROA	R DATA
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APPENDIX E

SIDRA MOVEMENT SUMMARIES

NETWORK LAYOUT

■ Network: N101 [Existing Network PM (Network Folder:

General)]

New Network Network Category: (None)

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



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Site: 101 [BES_WBOX PM (Site Folder: General)]

Bestic Street & W Botany Street, Banksia

Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Optimum Cycle Time -Minimum Delay)

Vehio	cle Mo	vement	Perfo	rmand	e									
Mov ID	Tum	DEMA FLOV [Total	ND NS HV]	ARRI FLO [Total	VAL WS HV]	Deg. Satn	Aver. Delay	Level of Service	AVERAG OF Q [Veh.	GE BACK UEUE Dist]	Prop. Que	EffectiveA Stop Rate	ver. No. Cycles	Aver. Speed
South	· W Bo	ven/n tany St (9	% S)	veh/h	%	V/C	sec	_	ven	m	_	_	_	km/h
1	12	23	0.0	23	0.0	0 220	19.5	LOSB	3.2	22.4	0.60	0.53	0.60	47.7
2	T1	366	1.4	366	1.4	0.220	25.3	LOS B	9.2	62.0	0.00	0.55	0.00	41.1
2	22	176	0.0	176	0.0	*0.883	42.8		8.8	62.0	1.00	1.04	1 33	26.2
Appro	ach	565	0.0	565	0.0	0.883	30.5	105.0	8.8	62.0	0.85	0.85	1.05	37.8
Appro	acri	505	0.5	505	0.5	0.000	50.5	2000	0.0	02.0	0.00	0.00	1.00	57.0
East:	Bestic	St (E)												
4	L2	236	0.4	236	0.4	0.466	26.3	LOS B	7.0	49.2	0.78	0.76	0.78	41.2
5	T1	373	0.0	373	0.0	0.839	34.7	LOS C	11.4	80.6	0.93	0.92	1.06	36.4
6	R2	143	2.1	143	2.1	*0.839	46.8	LOS D	11.4	80.6	1.00	0.99	1.20	33.6
Appro	ach	752	0.5	752	0.5	0.839	34.4	LOS C	11.4	80.6	0.89	0.88	1.00	37.2
North	: W Bot	tany St (N	۷)											
7	L2	217	0.0	217	0.0	0.868	48.2	LOS D	14.3	100.3	1.00	1.02	1.23	24.6
8	T1	747	0.5	747	0.5	*0.868	41.8	LOS C	14.6	102.3	1.00	1.03	1.23	35.3
Appro	ach	964	0.4	964	0.4	0.868	43.2	LOS D	14.6	102.3	1.00	1.02	1.23	33.4
West:	Bestic	St (W)												
10	L2	12	8.3	12	8.3	0.559	51.3	LOS D	2.6	18.5	1.00	0.78	1.02	33.6
11	T1	231	0.0	231	0.0	*0.851	49.5	LOS D	4.5	31.4	1.00	0.90	1.26	23.1
Appro	ach	243	0.4	243	0.4	0.851	49.6	LOS D	4.5	31.4	1.00	0.89	1.25	23.8
All Ve	hicles	2524	0.6	2524	0.6	0.883	38.4	LOS C	14.6	102.3	0.93	0.93	1.12	34.6

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Ped	edestrian Movement Performance														
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE	BACK OF UE	Prop. Ef Que	fective Stop	Travel Time	Travel Dist.	Aver. Speed				
		ned/h	ser		[Ped	Dist]		Rate	ser	m	m/sec				
Sout	D Crossing Flow Delay Service QUEDE Que Stop Time Dist. Speed ped/h sec ped m sec m m/sec South: W Botany St (S) P1 Full 3 39.2 LOS D 0.0 0.03 0.93 204.7 215.2 1.05														
P1	Full	3	39.2	LOS D	0.0	0.0	0.93	0.93	204.7	215.2	1.05				
East	: Bestic St (E)													
P2	Full	5	39.2	LOS D	0.0	0.0	0.93	0.93	204.7	215.2	1.05				
North	h: W Botany S	St (N)													
P3	Full	22	39.2	LOS D	0.1	0.1	0.93	0.93	204.8	215.2	1.05				
West	t: Bestic St (V	N)													

P4 Full	7	39.2	LOS D	0.0	0.0	0.93	0.93	204.7	215.2	1.05
All Pedestrians	37	39.2	LOS D	0.1	0.1	0.93	0.93	204.8	215.2	1.05

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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V Site: 101 [BES_FRAX PM (Site Folder: General)]

■■ Network: N101 [Existing Network PM (Network Folder: General)]

Bestic Street & Francis Ave, Banksia Site Category: (None) Roundabout

Vehi	cle Mo	vement	Perfo	rmano	e									
Mov ID	Tum	DEMA FLO	ND NS HV 1	ARR FLO	IVAL WS	Deg. Satn	Aver. Delay	Level of Service	AVERA OF C	GE BACK QUEUE Dist 1	Prop. Que	EffectiveA Stop Rate	ver. No. Cycles	Aver. Speed
		veh/h	· %	veh/h	%	v/c	sec		veh	m		T tatto		km/h
South	h: Franc	is Ave (S	i)											
1	L2	47	0.0	47	0.0	0.099	8.6	LOS A	0.2	1.6	0.72	0.75	0.72	39.9
2	T1	1	0.0	1	0.0	0.099	9.7	LOS A	0.2	1.6	0.72	0.75	0.72	34.4
3	R2	17	0.0	17	0.0	0.099	11.5	LOS A	0.2	1.6	0.72	0.75	0.72	47.0
Appro	oach	65	0.0	65	0.0	0.099	9.3	LOS A	0.2	1.6	0.72	0.75	0.72	42.5
East: Bestic St (E) 4 L2 41 0.0 41 0.0 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 49.0 5 T1 709 0.4 709 0.4 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 49.4 6 D2 10 0.20 10.0 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 49.4														
East: Bestic St (E) 4 L2 41 0.0 41 0.0 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 4 5 T1 709 0.4 709 0.4 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 4 6 R2 4 0.0 4 0.0 0.560 8.6 LOS A 2.3 16.0 0.40 0.49 0.40 4 Approach 754 0.4 756 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 4														49.0
Approach 65 0.0 65 0.0 0.099 9.3 LOS A 0.2 1.6 0.72 East: Bestic St (E) 4 L2 41 0.0 41 0.0 0.560 5.6 LOS A 2.3 16.0 0.40 5 T1 709 0.4 709 0.4 0.560 5.6 LOS A 2.3 16.0 0.40 6 R2 4 0.0 4 0.0 0.560 8.6 LOS A 2.3 16.0 0.40 Approach 754 0.4 754 0.4 0.560 5.6 LOS A 2.3 16.0 0.40										0.49	0.40	49.4		
6	R2	4	0.0	4	0.0	0.560	8.6	LOS A	2.3	16.0	0.40	0.49	0.40	43.7
Appro	oach	754	0.4	754	0.4	0.560	5.6	LOS A	2.3	16.0	0.40	0.49	0.40	49.3
East: Bestic St (E) 4 L2 41 0.0 41 0.0 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 49.0 5 T1 709 0.4 709 0.4 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 49.0 6 R2 4 0.0 4 0.0 0.560 8.6 LOS A 2.3 16.0 0.40 0.49 0.40 49.0 6 R2 4 0.0 4 0.0 0.560 8.6 LOS A 2.3 16.0 0.40 0.49 0.40 43. Approach 754 0.4 754 0.4 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 49.0 North: Fisho's Club (N) 7 L2 4 0.0 0.010 3.6 LOS A 0.0 0.2 0.62 <														
East: Bestic St (E) 4 L2 41 0.0 41 0.0 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 45 5 T1 709 0.4 709 0.4 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 45 6 R2 4 0.0 4 0.0 0.560 8.6 LOS A 2.3 16.0 0.40 0.49 0.40 45 6 R2 4 0.0 4 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 43 Approach 754 0.4 7560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 45 North: Fisho's Club (N) 7 L2 4 0.0 4 0.0 0.010 3.6 LOS A 0.0 0.2 0.62 0.36 0.62 36 8 T1 1 0.0 4 0.0 0.010 3.6 LOS A													38.7	
6 R2 4 0.0 4 0.0 0.560 8.6 LOS A 2.3 16.0 0.40 0.49 0.40 Approach 754 0.4 754 0.4 0.560 5.6 LOS A 2.3 16.0 0.40 0.49 0.40 North: Fisho's Club (N) 7 L2 4 0.0 0.010 3.6 LOS A 0.0 0.2 0.62 0.36 0.62 0.62 0.36 0.62 0.62 0.36 0.62 0.62 0.36 0.62 0.62 0.36 0.62 0.62 0.36 0.62 0.62 0.36 0.62 0.62 0.36 0.62 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36 0.62 0.36										0.62	36.0			
9	R2	4	0.0	4	0.0	0.010	4.6	LOS A	0.0	0.2	0.62	0.36	0.62	16.8
Appro	oach	9	0.0	9	0.0	0.010	4.1	LOS A	0.0	0.2	0.62	0.36	0.62	32.6
West	: Bestic	St (W)												
10	L2	5	0.0	5	0.0	0.355	5.0	LOS A	1.0	6.8	0.11	0.51	0.11	39.3
11	T1	449	0.0	449	0.0	0.355	4.9	LOS A	1.0	6.8	0.11	0.51	0.11	53.8
12	R2	86	0.0	86	0.0	0.355	7.9	LOS A	1.0	6.8	0.11	0.51	0.11	49.7
Appro	oach	540	0.0	540	0.0	0.355	5.4	LOS A	1.0	6.8	0.11	0.51	0.11	53.0
All Ve	ehicles	1368	0.2	1368	0.2	0.560	5.7	LOS A	2.3	16.0	0.30	0.51	0.30	50.8
Site Le	evel of \$	Service (L	OS) M	lethod:	Delay	(RTA NSW	/). Site L(OS Metho	d is specifi	ed in the Ne	etwork Dat	a dialog (N	letwork t	ab).

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included). Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

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NETWORK LAYOUT

 Network: N101 [Existing Network SAT (Network Folder: General)]

New Network Network Category: (None)

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



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Site: 101 [BES_WBOX SAT (Site Folder: General)]

Bestic Street & W Botany Street, Banksia

Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Optimum Cycle Time -Minimum Delay)

Vehic	Vehicle Movement Performance													
Mov ID	Tum	DEMA FLOV [Total	ND NS HV]	ARRI FLO [Total	VAL WS HV]	Deg. Satn	Aver. Delay	Level of Service	AVERAC OF Q [Veh.	GE BACK UEUE Dist]	Prop. Que	EffectiveA Stop Rate	ver. No. Cycles	Aver. Speed
South	: W Bo	tany St (S	3))	ven/m	70	V/C	SEL	_	Ven		_		_	KIIVII
1	L2	37	0.0	37	0.0	0.213	15.4	LOS B	3.0	21.3	0.51	0.48	0.51	49.9
2	T1	434	0.2	434	0.2	0.857	18.6	LOS B	9.2	64.2	0.77	0.75	0.89	45.1
3	R2	228	0.0	228	0.0	*0.857	31.1	LOS C	9.2	64.2	1.00	0.98	1.22	31.3
Appro	ach	699	0.1	699	0.1	0.857	22.5	LOS B	9.2	64.2	0.83	0.81	0.98	41.7
East: Bestic St (E)														
4	L2	100	0.0	100	0.0	0.482	33.8	LOS C	6.1	42.8	0.86	0.76	0.86	38.9
5	T1	243	0.0	243	0.0	*0.868	33.6	LOS C	7.1	50.0	0.90	0.83	1.00	36.9
6	R2	165	1.2	165	1.2	0.868	55.8	LOS D	7.1	50.0	1.00	1.02	1.37	30.4
Appro	ach	508	0.4	508	0.4	0.868	40.8	LOS C	7.1	50.0	0.92	0.88	1.09	34.8
North	: W Bot	tany St (N	I)											
7	L2	224	0.0	224	0.0	0.339	29.3	LOS C	4.4	31.0	0.78	0.78	0.78	31.2
8	T1	454	1.3	454	1.3	*0.863	36.9	LOS C	12.5	88.7	0.90	0.95	1.14	37.4
Appro	ach	678	0.9	678	0.9	0.863	34.4	LOS C	12.5	88.7	0.86	0.89	1.02	36.0
West:	Bestic	St (W)												
10	L2	17	0.0	17	0.0	0.546	51.3	LOS D	2.6	18.0	1.00	0.78	1.01	33.7
11	T1	221	0.0	221	0.0	0.832	48.9	LOS D	4.3	30.3	1.00	0.89	1.24	23.2
Approach		238	0.0	238	0.0	0.832	49.1	LOS D	4.3	30.3	1.00	0.88	1.22	24.2
All Ve	hicles	2123	0.4	2123	0.4	0.868	33.7	LOS C	12.5	88.7	0.88	0.86	1.05	36.0

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Peo	Pedestrian Movement Performance													
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Effective Que Stop Rate		Travel Time	Travel Aver Dist. Speed				
		ped/h	sec		ped	m โ			sec	m	m/sec			
South: W Botany St (S)														
P1	Full	6	39.2	LOS D	0.0	0.0	0.93	0.93	204.7	215.2	1.05			
Eas	t: Bestic St (E)												
P2	Full	4	39.2	LOS D	0.0	0.0	0.93	0.93	204.7	215.2	1.05			
North: W Botany St (N)														
P 3	Full	6	39.2	LOS D	0.0	0.0	0.93	0.93	204.7	215.2	1.05			
We	West: Bestic St (W)													

P4 Full	6	39.2	LOS D	0.0	0.0	0.93	0.93	204.7	215.2	1.05
All Pedestrians	22	39.2	LOS D	0.0	0.0	0.93	0.93	204.7	215.2	1.05

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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V Site: 101 [BES_FRAX SAT (Site Folder: General)]

Bestic Street & Francis Ave, Banksia Site Category: (None) Roundabout

Vehicle Movement Performance														
Mov ID	Tum	DEM/ FLO	AND WS	ARR FLO	IVAL WS	Deg. Satn	Aver. Delay	Level of Service	AVERA OF C	GE BACK	Prop. Que	Effective A Stop	ver. No. Cycles	Aver. Speed
		[lotal veh/h	HV J %	[lota veh/h	IHV] ⊨%	v/c	sec		[Veh. veh	Dist J m		Rate		km/h
South	n: Franc	is Ave (S	5)											
1	L2	45	0.0	45	0.0	0.092	6.5	LOS A	0.2	1.4	0.57	0.68	0.57	41.5
2	T1	3	0.0	3	0.0	0.092	7.7	LOS A	0.2	1.4	0.57	0.68	0.57	35.3
3	R2	30	0.0	30	0.0	0.092	9.4	LOS A	0.2	1.4	0.57	0.68	0.57	48.0
Appro	bach	78	0.0	78	0.0	0.092	7.7	LOS A	0.2	1.4	0.57	0.68	0.57	44.5
East:	Bestic	St (E)												
4	L2	37	0.0	37	0.0	0.378	5.4	LOS A	1.1	8.1	0.32	0.49	0.32	49.2
5	T1	448	0.2	448	0.2	0.378	5.4	LOS A	1.1	8.1	0.32	0.49	0.32	49.9
6	R2	7	0.0	7	0.0	0.378	8.5	LOS A	1.1	8.1	0.32	0.49	0.32	44.0
Appro	bach	492	0.2	492	0.2	0.378	5.4	LOS A	1.1	8.1	0.32	0.49	0.32	49.7
North	: Fisho'	s Club (l	V)											
7	L2	4	0.0	4	0.0	0.019	4.7	LOS A	0.1	0.4	0.69	0.45	0.69	37.7
8	T1	1	0.0	1	0.0	0.019	4.7	LOS A	0.1	0.4	0.69	0.45	0.69	35.1
9	R2	10	0.0	10	0.0	0.019	5.6	LOS A	0.1	0.4	0.69	0.45	0.69	16.1
Appro	bach	15	0.0	15	0.0	0.019	5.3	LOS A	0.1	0.4	0.69	0.45	0.69	27.2
West	Bestic	St (W)												
10	L2	12	0.0	12	0.0	0.437	5.2	LOS A	1.3	9.0	0.18	0.50	0.18	39.1
11	T1	540	0.0	540	0.0	0.437	5.0	LOS A	1.3	9.0	0.18	0.50	0.18	53.7
12	R2	83	0.0	83	0.0	0.437	8.1	LOS A	1.3	9.0	0.18	0.50	0.18	49.5
Appro	bach	635	0.0	635	0.0	0.437	5.4	LOS A	1.3	9.0	0.18	0.50	0.18	52.9
All Ve	hicles	1220	0.1	1220	0.1	0.437	5.6	LOS A	1.3	9.0	0.27	0.51	0.27	51.1

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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NETWORK LAYOUT

■ Network: N101 [Proposed Network PM (Network Folder: General)] New Network Network Category: (None)



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Site: 101 [BES_WBOP PM (Site Folder: General)]

Bestic Street & W Botany Street, Banksia

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time -Minimum Delay)

Vehicle Movement Performance														
Mov ID	Tum	DEMA FLOV [Total	ND NS HV]	ARRI FLO [Total	IVAL WS IHV]	Deg. Satn	Aver. Delay	Level of Service	AVERAC OF Q [Veh.	E BACK UEUE Dist]	Prop. Que	Effective A Stop Rate	wer. No. Cycles	Aver. Speed
South	: W Bo	tany St (3)	venim	/0	V/C	566	_	ven		_		_	MILVII
1	L2	23	0.0	23	0.0	0.229	21.9	LOS B	4.0	28.5	0.59	0.53	0.59	46.2
2	T1	366	1.4	366	1.4	0.921	33.7	LOS C	12.6	88.8	0.78	0.78	0.94	38.1
3	R2	202	0.0	202	0.0	*0.921	60.2	LOS E	12.6	88.8	1.00	1.10	1.37	21.0
Appro	ach	591	0.8	591	0.8	0.921	42.3	LOS C	12.6	88.8	0.84	0.88	1.08	32.8
East:	Bestic	St (E)												
4	L2	262	0.4	262	0.4	0.516	31.0	LOS C	9.8	68.5	0.79	0.77	0.79	37.7
5	T1	393	0.0	393	0.0	*0.929	49.4	LOS D	18.4	129.6	0.93	0.98	1.16	30.0
6	R2	202	1.5	202	1.5	0.929	68.1	LOS E	18.4	129.6	1.00	1.10	1.36	26.3
Appro	ach	857	0.5	857	0.5	0.929	48.2	LOS D	18.4	129.6	0.90	0.95	1.09	30.9
North	: W Bot	tany St (N	1)											
7	L2	276	0.0	276	0.0	0.916	63.8	LOS E	19.8	138.8	1.00	1.05	1.30	20.3
8	T1	747	0.5	747	0.5	*0.916	57.2	LOS E	20.2	142.2	1.00	1.09	1.29	30.7
Appro	ach	1023	0.4	1023	0.4	0.916	59.0	LOS E	20.2	142.2	1.00	1.08	1.29	28.4
West:	Bestic	St (W)												
10	L2	12	8.3	12	8.3	0.591	60.8	LOS E	3.4	24.3	1.00	0.79	1.02	31.0
11	T1	251	0.0	251	0.0	0.900	62.1	LOS E	6.1	42.6	1.00	0.94	1.30	20.0
Appro	ach	263	0.4	263	0.4	0.900	62.1	LOS E	6.1	42.6	1.00	0.93	1.29	20.6
All Ve	hicles	2734	0.5	2734	0.5	0.929	52.3	LOS D	20.2	142.2	0.94	0.98	1.18	29.3

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.

Delay Model: SIDRA Standard (Geometric Delay is included). Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Effective Que Stop Rate		Travel Time	Travel Dist.	Aver. Speed		
	ped/h	sec		ped	m			sec	m	m/sec		
South: W Botany	St (S)											
P1 Full	3	49.2	LOS E	0.0	0.0	0.95	0.95	214.7	215.2	1.00		
East: Bestic St (E	E)											
P2 Full	5	49.2	LOS E	0.0	0.0	0.95	0.95	214.7	215.2	1.00		
North: W Botany	St (N)											
P3 Full	22	49.2	LOS E	0.1	0.1	0.95	0.95	214.7	215.2	1.00		
West: Bestic St (W)												

P4 Full	7	49.2	LOS E	0.0	0.0	0.95	0.95	214.7	215.2	1.00
All Pedestrians	37	49.2	LOS E	0.1	0.1	0.95	0.95	214.7	215.2	1.00

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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V Site: 101 [BES_FRAP PM (Site Folder: General)]

Bestic Street & Francis Ave, Banksia Site Category: (None) Roundabout

Vehi	Vehicle Movement Performance													
Mov ID	Tum	DEM/ FLO	AND WS	ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERA OF (GE BACK QUEUE	Prop. Que	Effective A Stop	ver. No. Cycles	Aver. Speed
		veh/h	y	veh/h	₩ %	v/c	sec		ven. veh	m		Rate		km/h
South	n: Franc	is Ave (S	5)											
1	L2	60	0.0	60	0.0	0.121	8.8	LOS A	0.3	2.0	0.73	0.77	0.73	39.9
2	T1	1	0.0	1	0.0	0.121	9.9	LOS A	0.3	2.0	0.73	0.77	0.73	34.3
3	R2	17	0.0	17	0.0	0.121	11.7	LOS A	0.3	2.0	0.73	0.77	0.73	46.9
Appro	bach	78	0.0	78	0.0	0.121	9.4	LOS A	0.3	2.0	0.73	0.77	0.73	42.0
East:	Bestic	St (E)												
4	L2	41	0.0	41	0.0	0.577	5.8	LOS A	2.6	18.3	0.44	0.48	0.44	48.9
5	T1	722	0.4	722	0.4	0.577	5.8	LOS A	2.6	18.3	0.44	0.48	0.44	49.2
6	R2	4	0.0	4	0.0	0.577	8.8	LOS A	2.6	18.3	0.44	0.48	0.44	43.5
Appro	bach	767	0.4	767	0.4	0.577	5.8	LOS A	2.6	18.3	0.44	0.48	0.44	49.1
North	: Fisho'	s Club (N	۷)											
7	L2	4	0.0	4	0.0	0.009	1.5	LOS A	0.0	0.2	0.42	0.24	0.42	40.2
8	T1	1	0.0	1	0.0	0.009	1.5	LOS A	0.0	0.2	0.42	0.24	0.42	37.2
9	R2	4	0.0	4	0.0	0.009	2.5	LOS A	0.0	0.2	0.42	0.24	0.42	18.3
Appro	bach	9	0.0	9	0.0	0.009	1.9	LOS A	0.0	0.2	0.42	0.24	0.42	34.3
West	Bestic	St (W)												
10	L2	5	0.0	5	0.0	0.183	4.6	LOS A	0.4	2.8	0.09	0.55	0.09	24.3
11	T1	162	0.0	162	0.0	0.183	4.4	LOS A	0.4	2.8	0.09	0.55	0.09	50.7
12	R2	99	0.0	99	0.0	0.183	7.6	LOS A	0.4	2.8	0.09	0.55	0.09	45.0
Appro	bach	266	0.0	266	0.0	0.183	5.6	LOS A	0.4	2.8	0.09	0.55	0.09	48.1
All Ve	hicles	1120	0.3	1120	0.3	0.577	6.0	LOS A	2.6	18.3	0.38	0.52	0.38	48.1

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.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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NETWORK LAYOUT

■ Network: N101 [Proposed Network SAT (Network Folder: General)] New Network Network Category: (None)

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



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Site: 101 [BES_WBOP SAT (Site Folder: General)]

Metwork: N101 [Proposed Network SAT (Network Folder: General)]

Bestic Street & W Botany Street, Banksia

Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time -Minimum Delay)

Vehicle Movement Performance														
Mov ID	Tum	DEM/ FLOV [Total	ND NS HV]	ARRI FLO [Total	IVAL WS I HV]	Deg. Satn	Deg. Aver.Lev Satn Delay Se		AVERAGE BACK OF QUEUE [Veh. Dist]		Prop. Que	Prop. Effective Que Stop Rate		Aver. Speed
veh/h % veh/h %				%	v/c	sec	_	veh	m	_	_		km/h	
4	10	27	-,	27	0.0	0.005	17.2	LOC P	2.0	27.5	0.54	0.40	0.51	40.7
1		31	0.0	31	0.0	0.225	17.5	LOS B	3.9	21.5	0.51	0.40	0.51	40.7
2	11	434	0.2	434	0.2	0.903	25.1	LOS B	12.6	88.0	0.76	0.76	0.90	41.8
3	R2	254	0.0	254	0.0	*0.903	42.9	LOS D	12.6	88.0	1.00	1.03	1.28	26.1
Appro	ach	725	0.1	725	0.1	0.903	30.9	LOS C	12.6	88.0	0.83	0.84	1.01	37.3
East:	Bestic	St (E)												
4	L2	126	0.0	126	0.0	0.519	38.8	LOS C	8.5	59.3	0.86	0.77	0.86	35.4
5	T1	263	0.0	263	0.0	*0.933	42.3	LOS C	12.1	84.9	0.90	0.86	1.03	32.2
6	R2	224	0.9	224	0.9	0.933	74.4	LOS F	12.1	84.9	1.00	1.08	1.46	24.6
Appro	ach	613	0.3	613	0.3	0.933	53.3	LOS D	12.1	84.9	0.93	0.92	1.15	29.4
North	: W Bot	tany St (N	4)											
7	L2	283	0.0	283	0.0	0.664	33.9	LOS C	6.9	48.0	0.79	0.79	0.79	29.1
8	T1	454	1.3	454	1.3	*0.907	49.9	LOS D	16.0	113.4	0.88	0.99	1.18	33.0
Appro	ach	737	0.8	737	0.8	0.907	43.8	LOS D	16.0	113.4	0.84	0.91	1.03	32.0
West:	Bestic	St (W)												
10	L2	17	0.0	17	0.0	0.579	60.8	LOS E	3.4	23.6	1.00	0.79	1.01	31.0
11	T1	241	0.0	241	0.0	0.882	60.9	LOS E	5.8	40.9	1.00	0.92	1.27	20.2
Appro	ach	258	0.0	258	0.0	0.882	60.9	LOS E	5.8	40.9	1.00	0.91	1.25	21.1
All Ve	hicles	2333	0.4	2333	0.4	0.933	44.2	LOS D	16.0	113.4	0.88	0.89	1.08	31.4

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. Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Effective Que Stop Rate		Travel Time	Travel Dist.	Aver. Speed		
	ped/h	sec		ped	m			sec	m	m/sec		
South: W Botan	y St (S)											
P1 Full	6	49.2	LOS E	0.0	0.0	0.95	0.95	214.7	215.2	1.00		
East: Bestic St ((E)											
P2 Full	4	49.2	LOS E	0.0	0.0	0.95	0.95	214.7	215.2	1.00		
North: W Botany	y St (N)											
P3 Full	6	49.2	LOS E	0.0	0.0	0.95	0.95	214.7	215.2	1.00		
West: Bestic St	(W)											

P4 Full	6	49.2	LOS E	0.0	0.0	0.95	0.95	214.7	215.2	1.00
All Pedestrians	22	49.2	LOS E	0.0	0.0	0.95	0.95	214.7	215.2	1.00

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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V Site: 101 [BES_FRAP SAT (Site Folder: General)]

Network: N101 [Proposed Network SAT (Network Folder: General)]

Bestic Street & Francis Ave, Banksia Site Category: (None) Roundabout

Vehicle Movement Performance														
Mov ID	Tum	DEM/ FLO	AND WS HV]	ARR FLO [Tota	IVAL WS IHV]	Deg. Satn	Aver. Delay	Level of Service	AVERA OF ([Veh.	GE BACK QUEUE Dist]	Prop. Que	Effective/ Stop Rate	ver. No. Cycles	Aver. Speed
South	n: Franc	is Ave (S) 5)	venim	/0	V/C	586	_	ven		_	_	_	NITAL
1	L2	58	0.0	58	0.0	0.109	6.6	LOS A	0.2	1.7	0.59	0.68	0.59	41.5
2	T1	3	0.0	3	0.0	0.109	7.8	LOS A	0.2	1.7	0.59	0.68	0.59	35.3
3	R2	30	0.0	30	0.0	0.109	9.5	LOS A	0.2	1.7	0.59	0.68	0.59	48.1
Appro	bach	91	0.0	91	0.0	0.109	7.6	LOS A	0.2	1.7	0.59	0.68	0.59	44.2
East:	Bestic	St (E)												
4	L2	37	0.0	37	0.0	0.393	5.5	LOS A	1.3	9.1	0.35	0.49	0.35	49.1
5	T1	461	0.2	461	0.2	0.393	5.5	LOS A	1.3	9.1	0.35	0.49	0.35	49.7
6	R2	7	0.0	7	0.0	0.393	8.6	LOS A	1.3	9.1	0.35	0.49	0.35	43.9
Appro	bach	505	0.2	505	0.2	0.393	5.6	LOS A	1.3	9.1	0.35	0.49	0.35	49.5
North	: Fisho'	s Club (N	V)											
7	L2	4	0.0	4	0.0	0.019	6.2	LOS A	0.1	0.5	0.77	0.43	0.77	36.8
8	T1	1	0.0	1	0.0	0.019	6.2	LOS A	0.1	0.5	0.77	0.43	0.77	34.3
9	R2	10	0.0	10	0.0	0.019	7.2	LOS A	0.1	0.5	0.77	0.43	0.77	15.2
Appro	bach	15	0.0	15	0.0	0.019	6.9	LOS A	0.1	0.5	0.77	0.43	0.77	26.1
West	Bestic	St (W)												
10	L2	12	0.0	12	0.0	0.454	4.8	LOS A	1.4	9.7	0.16	0.50	0.16	24.5
11	T1	553	0.0	553	0.0	0.454	4.6	LOS A	1.4	9.7	0.16	0.50	0.16	51.1
12	R2	96	0.0	96	0.0	0.454	7.7	LOS A	1.4	9.7	0.16	0.50	0.16	45.4
Appro	bach	661	0.0	661	0.0	0.454	5.0	LOS A	1.4	9.7	0.16	0.50	0.16	49.8
All Ve	hicles	1272	0.1	1272	0.1	0.454	5.4	LOS A	1.4	9.7	0.27	0.51	0.27	48.9

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.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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SITE LAYOUT

V Site: 101 [BES_ACCP SAT (Site Folder: General)]

Bestic St & Barton Park Access Driveway, Banksia Site Category: (None) Give-Way (Two-Way)

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



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Bestic St & Barton Park Access Driveway, Banksia Site Category: (None) Give-Way (Two-Way)

Vehi	Vehicle Movement Performance													
Mov ID	Tum	INF VOLU [Total veh/h	PUT JMES HV] veh/h	DEM/ FLO [Total veh/h	AND WS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BA QUE [Veh. veh	ACK OF EUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Bestic St (E)														
6	R2	26	0	26	0.0	0.035	6.6	LOS A	0.1	0.9	0.54	0.68	0.54	20.4
Appro	bach	26	0	26	0.0	0.035	6.6	NA	0.1	0.9	0.54	0.68	0.54	20.4
North: Barton Park Access Driveway (N)														
7	L2	26	0	26	0.0	0.026	2.1	LOS A	0.1	0.7	0.49	0.35	0.49	20.1
8	T1	106	0	106	0.0	0.182	5.2	LOS A	0.8	5.5	0.62	0.60	0.62	25.8
Appro	bach	132	0	132	0.0	0.182	4.6	LOS A	0.8	5.5	0.59	0.55	0.59	24.8
West	: Besti	c St (W)												
10	L2	106	0	106	0.0	0.057	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.6
11	T1	540	0	540	0.0	0.277	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Appro	bach	646	0	646	0.0	0.277	1.0	NA	0.0	0.0	0.00	0.09	0.00	57.5
All Vehic	les	804	0	804	0.0	0.277	1.7	NA	0.8	5.5	0.12	0.19	0.12	41.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab). Vehicle movement LOS values are based on average delay per movement.

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

NA: Interaction 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.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

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V Site: 101 [BES_ACCP SAT (Site Folder: General)]

Bestic St & Barton Park Access Driveway, Banksia Site Category: (None) Give-Way (Two-Way)

Vehi	Vehicle Movement Performance													
Mov ID	Tum	INF VOLU [Total veh/h	UT JMES HV] veh/h	DEM/ FLO [Total veh/h	AND WS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BA QUE [Veh. veh	ACK OF EUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East:	Bestic	: St (E)												
6	R2	26	0	26	0.0	0.039	7.4	LOS A	0.1	1.0	0.58	0.73	0.58	20.3
Appro	bach	26	0	26	0.0	0.039	7.4	NA	0.1	1.0	0.58	0.73	0.58	20.3
North: Barton Park Access Driveway (N)														
7	L2	26	0	26	0.0	0.030	2.6	LOS A	0.1	0.8	0.53	0.41	0.53	20.0
8	T1	106	0	106	0.0	0.211	6.6	LOS A	0.9	6.2	0.66	0.66	0.66	25.5
Appro	bach	132	0	132	0.0	0.211	5.8	LOS A	0.9	6.2	0.63	0.61	0.63	24.6
West	: Besti	c St (W)												
10	L2	106	0	106	0.0	0.057	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.6
11	T1	635	0	635	0.0	0.326	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Appro	bach	741	0	741	0.0	0.326	0.9	NA	0.0	0.0	0.00	0.08	0.00	57.7
All Vehic	les:	899	0	899	0.0	0.326	1.8	NA	0.9	6.2	0.11	0.18	0.11	42.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab). Vehicle movement LOS values are based on average delay per movement.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

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

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

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