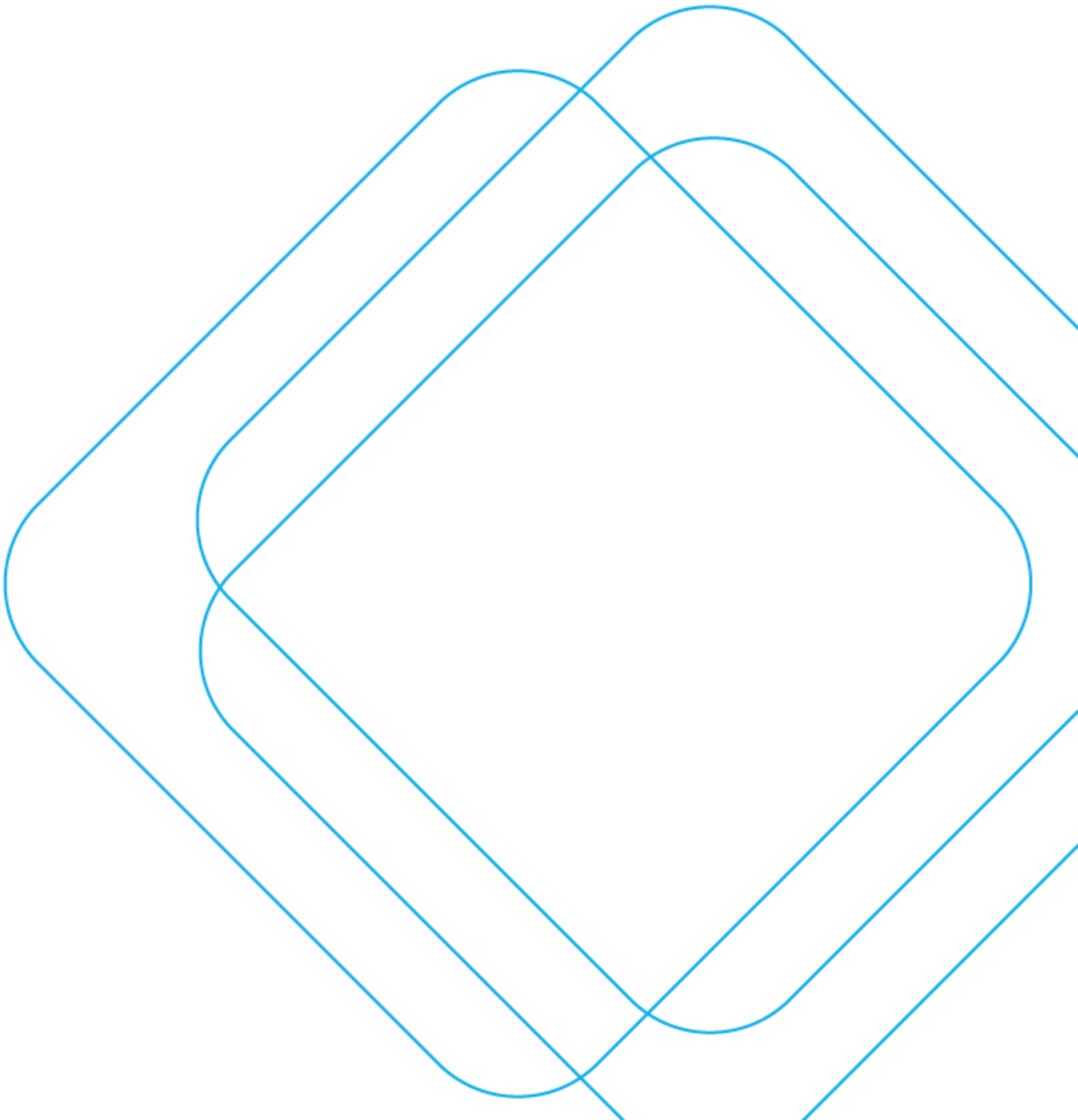
SCT Consulting

THE POINT COMMUNITY CHURCH DA

Traffic Impact Assessment

9 SEPTEMBER 2024

SCT Consulting acknowledges the traditional owners of the lands on which we work.
We pay our respects to Elders past, present and emerging.



Quality Assurance

Project:	The Point Community Church DA		
Project Number:	SCT_00614		
Client:	The Point Community Church Inc	**ABN:**	61 081 086 687
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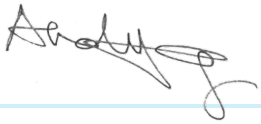
Authoriser:	Andy Yung	Director	

Version	Date	Details
1.0	9 September 2024	Draft report

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Executive Summary

Introduction

SCT Consulting has been engaged by The Point Community Church Inc (the proponent) to prepare a traffic impact assessment (TIA) to support the development application (DA) for a community church located at 171 John Oxley Drive, Port Macquarie (the site), within the Port Macquarie-Hastings Local Government Area (the LGA). The proponent is seeking the construction of a community church with indicatively 500 seats, associated facilities, and an on-site car park of 104 spaces, including eight tandem parking spaces. The parking provision satisfies the Council DCP.

Vehicular access to the site is provided at two locations: The first access point on Annabella Drive to the west of the site and the second is also on Annabella Drive (planned) to the south.

A pre-lodgement meeting for the subject DA was held on 24 June 2021 to discuss the development proposal of the Church. Matters related to traffic and transport were raised by the Port Macquarie-Hastings Council (Council) at the meeting, including a TIA to be prepared by a qualified and/or experienced traffic consultant, utilisation of data obtained from an existing facility manner, and comment on the likely traffic and parking demand ten years after the development, among others.

Existing conditions

The site at 171 John Oxley Drive, Port Macquarie, is legally identified as Lot 2 DP 533058. It is zoned R1 General Residential and C2 Environmental Conservation under the *Port Macquarie-Hastings Local Environmental Plan 2011* (the LEP) and is surrounded predominantly by lands zoned R1 General Residential and C2 Environmental Conservation.

The site is currently vacant land, while the area around it can be characterised as suburban. It is bounded to the north by John Oxley Drive, to the east by a row of single-family dwellings (fronting Freesia Place), to the south by power lines and the Innes Gardens Memorial Park, and to the west by Annabella Drive and single-family dwellings currently under construction.

Key roads in the vicinity of the site that will accommodate the traffic demand generated by the site include the Oxley Highway, John Oxley Drive, and Annabella Drive.

Given the suburban nature of the area, active transport infrastructure around the site is limited. Footpaths are generally provided along newly constructed residential roads immediately to the east and west of the site. No pedestrian crossings and cycling infrastructure are present. The nearest bus stops are located on John Oxley Drive while a stop on The Ruins Way to the east is also within walking distance.

The intersection of John Oxley Drive and Annabella Drive has been identified as the key intersection that will accommodate the majority of traffic generated by the proposed site. An on-site traffic survey was conducted on Sunday 28 July 2024 and found that the Sunday peak hours of the intersection were 10am to 11am during the AM peak hour and 4.30pm to 5.30pm during the PM peak hour.

The modelling results show that the John Oxley Drive / Annabella Drive intersection is currently operating at a good operational level during both Sunday peak hours where the intersection has a LoS A, a minimal DoS of around 0.10, and a delay of less than 10 seconds.

On-site surveys of the current church (at a hired venue in Westport – Hastings Secondary College Hall) were undertaken to develop an understanding of the traffic and parking demands generated on Sundays. The church is anticipated to provide a morning session at 9.30am and an evening session at 5pm every Sunday. Each session lasts for one hour. The visitation peaked at 294 people and 124 people in the morning and afternoon during the three survey dates in June 2024, respectively.

Traffic and transport impact assessment

The population of the study area is projected to grow by 23.67 per cent between 2024 and 2036. An average of 1.79 per cent per annum was applied to estimate the base traffic volumes at the intersection in future years. Additional traffic from 132 separate houses around the site is also expected to pass through the John Oxley Drive / Annabella Drive intersection from 2026 onwards due to the completion of new houses and the planned Annabella Drive transecting the site.

For the purpose of this TIA and reflective of worst-case scenarios, the proposed facility would accommodate a maximum of 294 people in the morning and 176 people in the afternoon (60% of the morning visitation based on survey).

– Based on targeted more share, this results in 95 cars and two buses (leaving from the site between 10:30am and 11am) and 82 cars and one bus (arriving at the site between 5:30am and 6:00pm) which would take place during the network peak hours on Sunday.

– This results in a maximum parking demand of 95 spaces during the Sunday AM peak hour and 82 spaces during the PM peak hour given the nature of the facility.

The potential road network impact of the proposed development was analysed through traffic modelling at the John Oxley Drive / Annabella Drive intersection to assess the changes in the intersection performance. The traffic modelling was performed under the traffic conditions in the year 2026 when the development is planned to be completed and the year 2036 (ten years after its completion). Each design year comprises two scenarios as follows:

1. **Future year base without development** includes projected background traffic volumes in each design year, considering population growth and development in the pipeline in the vicinity of the site.

2. **Future year with development** takes into account the projected background traffic in each design year as well as the traffic expected to be generated by the development.

Based on the modelling results, it is evident that the proposed church facility will not affect the operation of John Oxley Drive / Annabella Drive intersection during both peak hours on Sunday.

It is likely that only a small portion of potential visitors to the Church will travel via active transport or public transport modes. As such, the existing active transport and public transport amenities are expected to be able to accommodate all development-generated travel demands and no infrastructure upgrades will be required.

Through the survey, the estimated 85 percentile parking demand is around 91 and 78 cars in the morning and afternoon sessions, which are fully accommodated within the proposed parking area of the facility.

Conclusion

This TIA concludes that the proposed development will not have significant impact on the operation of the road, active transport, and public transport networks surrounding the site, either in the immediate future or ten years after the development.

1.0 Introduction

1.1 Background

SCT Consulting has been engaged by The Point Community Church Inc (the proponent) to prepare a traffic impact assessment (TIA) to support the development application (DA) for a community church located at 171 John Oxley Drive, Port Macquarie (the site), within the Port Macquarie-Hastings Local Government Area (the LGA).

The proponent is seeking the construction of a community church with indicatively 500 seats, associated facilities, and an on-site car park of 104 spaces, including eight tandem parking spaces. The location of the site is shown in **Figure 1-1**.

Figure 1-1 Location of the site

Source: Satellite imagery from Nearmap (2024) / Annotated by SCT Consulting

1.2 Pre-lodgement meeting advice

A pre-lodgement meeting for the subject DA was held on 24 June 2021 to discuss the development proposal for the site. The following matters related to traffic and transport were raised by the Port Macquarie-Hastings Council at the meeting that would need to be addressed when lodging the DA:

– Provide splays at the corners of the development lot, to be dedicated as public roads to allow space for future services, kerb, footpath and other works (**N/A**).

– A TIA is to be prepared by a qualified and/or experienced traffic consultant (**Addressed in this document**).

– The TIA is to be prepared in accordance with guidelines contained in the Roads and Maritime Services (2002) *Guide to Traffic Generating Developments* and Austroads (2019) *Guide to Traffic Management Part 12: Traffic Impacts of Development* (**Addressed in this document**).

– The TIA should use data obtained from an existing facility that operates in a similar manner to the proposed facility, and comment on any differences in operation (**Section 3.9)**.

- The likely traffic generation should be quantified, in terms of the number of vehicle trips during peak hours, the number of trips per day, and the breakdown of the types of vehicle users (e.g. residents' cars, staff cars, service trucks) (**Section 5.0**).
- The likely 85th percentile (time-weighted) parking demand is to be quantified (**Section 6.4**).
- Comment on the likely traffic and parking demand ten years after the development (**Section 6.1**).
- Internal access aisles and parking bays will be assessed for conformance with AS 2890, and in particular part 1 for cars, part 2 for garbage and delivery trucks, and part 6 for disabled parking (if required by the Building Code of Australia or other standards) (**Section 4.4**).

1.3 Purpose of the report

This traffic impact assessment has been prepared to support the DA for the proposed development at 171 John Oxley Drive, Port Macquarie. The report identifies and assesses potential traffic and transport impacts associated with the development. Specifically, the document addresses the following:

- Review of relevant planning policies and the *Port Macquarie-Hastings Development Control Plan 2013* (the DCP) on matters related to traffic and transport.
- Review of the site context and existing traffic and transport conditions.
- Reference to the Roads and Maritime Services (2002) *Guide to Traffic Generating Developments* and Austroads *Guide to Traffic Management Part 12: Traffic Impacts of Development*.
- On-site traffic surveys at a nearby intersection and traffic and parking surveys at a similar facility.
- Analysis of development traffic and parking demands in the immediate future and ten years after the development.
- Assessment of impacts on road, active transport, and public transport networks.

1.4 Report structure

This report is structured into the following sections:

- **Section 2.0** summarises the strategic context in the vicinity of the site.
- **Section 3.0** describes the existing conditions of the road, active transport, and public transport networks.
- **Section 4.0** provides an overview of the proposed development as well as a review of the internal aisles and parking arrangements.
- **Section 5.0** summarises the results of the surveys at a current facility and identifies the likely traffic and parking demands generated by the proposed development.
- **Section 6.0** appraises potential impacts on the road, active transport, and public transport networks.
- **Section 7.0** summarises the study findings and presents the conclusions.

2.0 Strategic context

2.1 Port Macquarie-Hastings Urban Growth Management Strategy 2017 – 2036

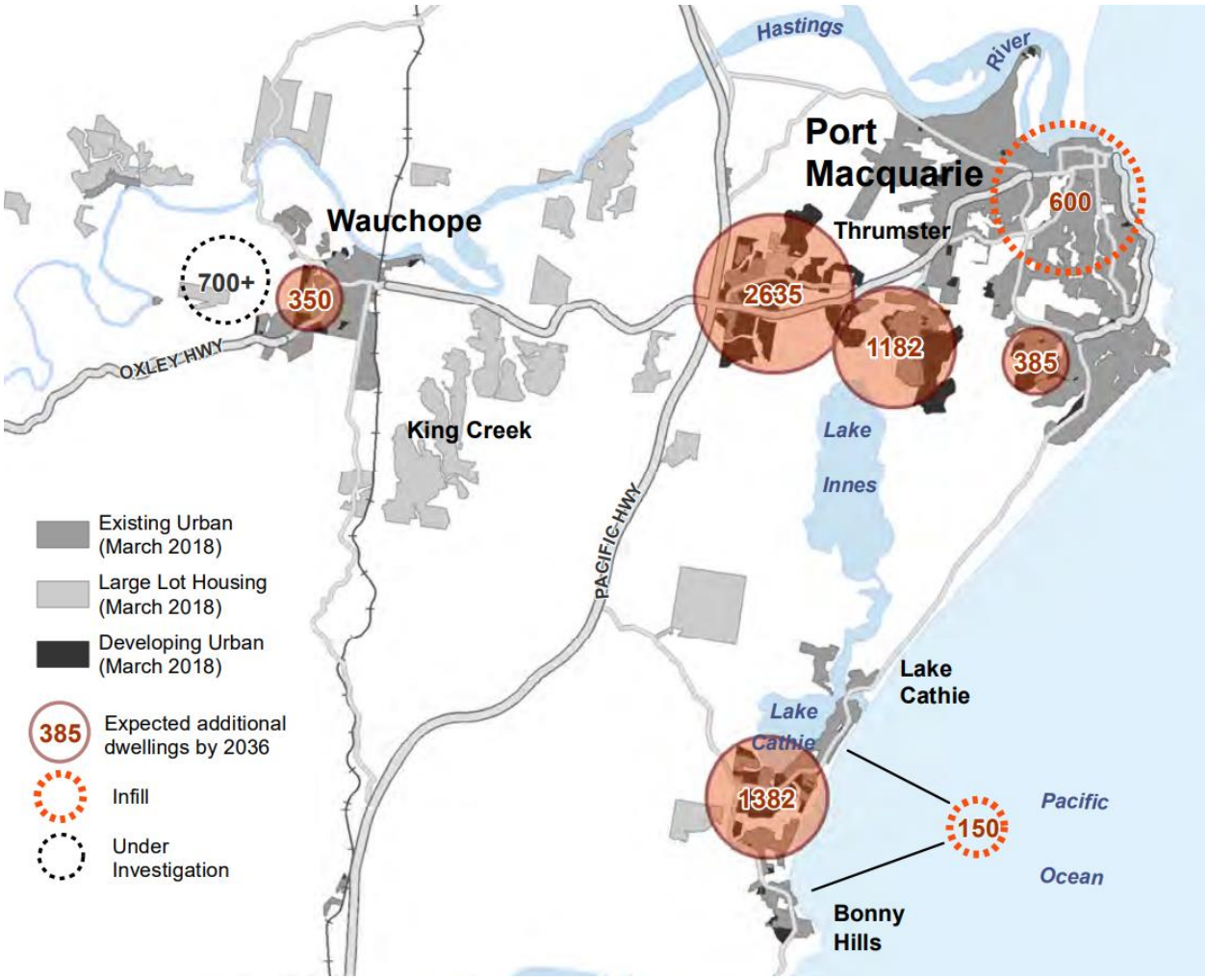
The vision for the Port Macquarie-Hastings Local Government Area is a "sustainable high quality of life for all". In the Urban Growth Management Strategy 2017 – 2036, this means that land use and population growth will be managed to maintain and enhance the quality of life for all persons in the community in a balanced way for current and future generations.

This strategy helps to plan and deliver growth and change, provides opportunities for new housing and economic development and informs the local environmental plan and the assessment of planning proposals and development applications.

The Port Macquarie Urban Growth Area is expected to increase its population by almost 16,000 between 2017 and 2036. Much of the growth is projected to take place in Thrumster, a recent urban release area located to the west of the site across the Oxley Highway, where it is forecast to house more than 7,000 new residents.

With a capacity of around 9,000 new dwellings on undeveloped residential lands, more than 40 per cent or 3,800 dwellings of the potential development are located around the site, as shown in **Figure 2-1**. Thrumster to the west of the site has a capacity of around 2,600 dwellings, while the Innes Peninsula can develop almost 1,200 new dwellings.

Figure 2-1 Potential dwelling yield estimates in the LGA



Source: Port Macquarie-Hastings Council (2018) Port Macquarie-Hastings Urban Growth Management Strategy 2017 – 2036

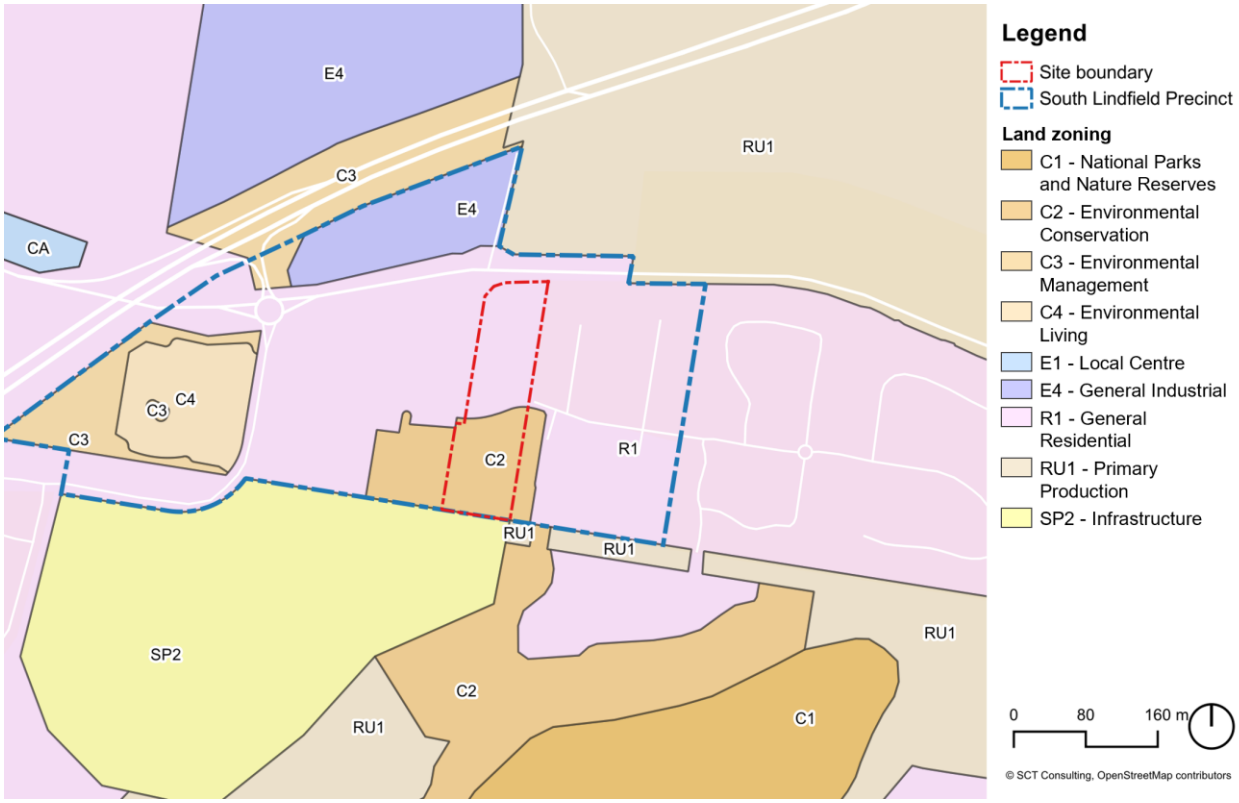
3.0 Existing conditions

3.1 Site context

The site at 171 John Oxley Drive, Port Macquarie, is legally identified as Lot 2 DP 533058. It is zoned R1 General Residential and C2 Environmental Conservation under the *Port Macquarie-Hastings Local Environmental Plan 2011* (the LEP), as shown in **Figure 3-1**. Places of public worship are permissible with consent in R1 General Residential lands under the LEP. The site is within the South Lindfield Precinct under Part D3.2 of the DCP.

The site is surrounded predominantly by lands zoned R1 General Residential and C2 Environmental Conservation. Other land zoning around the site includes SP2 Infrastructure to the southwest, E4 General Industrial and RU1 Primary Production to the north, and E1 Local Centre to the west across the Oxley Highway.

Figure 3-1 Land zoning around the site



Source: NSW Department of Planning, Housing and Infrastructure (2024); The DCP (2013)

The site is currently a vacant land located in a recently developed residential area in the suburb of Port Macquarie. The area can be characterised as suburban with low density in the built-up areas and ample undeveloped lands. The site is bounded to the north by John Oxley Drive, to the east by a row of single-family dwellings, to the south by Innes Gardens Memorial Park, and to the west by Annabella Drive and single-family dwellings currently under construction.

3.2 Road network

Key roads in the vicinity of the site that will accommodate the traffic demand generated by the site are illustrated in **Figure 3-2** and include the following:

– **Oxley Highway** is a major state road that extends east to west between Port Macquarie and Gunnedah. It connects Port Macquarie and several population centres, including Thrumster and Wauchope to the west of the site. The highway is linked to the site via the ramps onto John Oxley Drive located 300m west of the site. Around the ramps, the highway has two lanes in each direction with short entry and exit lanes and a posted speed limit of 100km/h.

– **John Oxley Drive** is a Council-owned sub-arterial road that extends from Port Macquarie Base Hospital in the east to Thrumster and joins Oxley Highway in the west. The road generally has one lane in each direction throughout its length, separated by line markings. At the intersection with Annabella Street and Holland Close, an auxiliary left turn and a channelised right turn lanes are provided. Around the site, the road has a speed limit of 60km/h. There are no footpaths on either side, but the road provides connections to several property access driveways and local roads.

– **Annabella Drive** is a local street serving the residential areas around the site. It is accessible via The Ruins Way to the east and John Oxley Drive to the west. The road allows two-way traffic and on-street parking and has a total carriage width of around 9m. There are no line markings while footpaths are provided only in the newly developed areas, especially those adjacent to the east and west of the site. It has been identified that there is an east-west missing link transecting the site to connect the two segments of Annabella Drive.

Figure 3-2 Key roads in the vicinity of the site

Source: Transport for NSW (2021)

3.3 Active transport

Given the suburban nature of the area, active transport infrastructure around the site is limited. Footpaths are generally provided along newly constructed residential roads immediately to the east and west of the site but none along John Oxley Drive apart from at the bus stop before Holland Close. No pedestrian crossings and cycling infrastructure are present.

The site is within 400m of the new dwellings under construction to the west. Considering the construction of Annabella Drive's missing link and the possibility of walking along the verges of the existing Annabella Drive, the site is within 800m, or a 10-minute walk, from all residences up to The Ruins Way to the east.

3.4 Public Transport

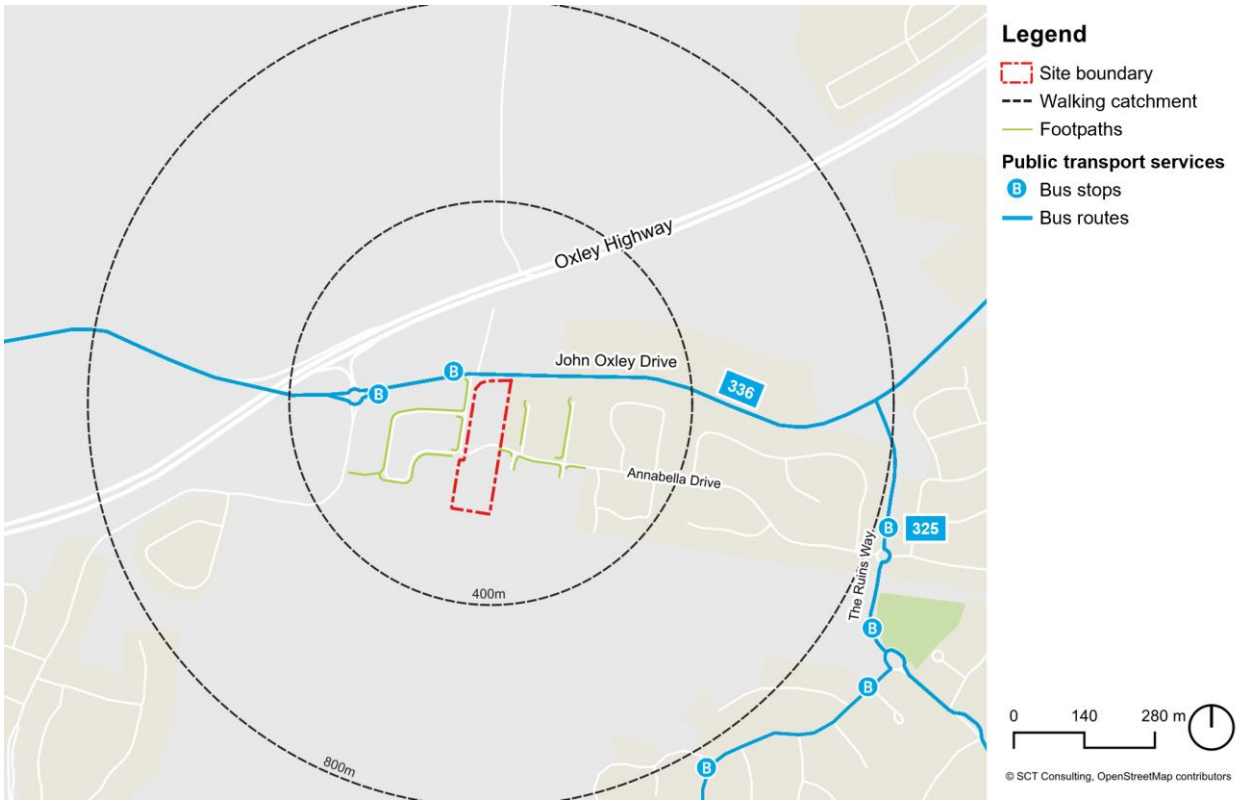
The nearest bus stops are located on John Oxley Drive within 200m of the site. A stop on The Ruins Way 800m to the east is also within walking distance of the site.

Bus stops on John Oxley Drive are serviced by route 336 which operates a loop service between Port Macquarie and Wauchope via Thrumster. Three services are available in either direction during the morning and evening peak hours on weekdays. On weekends, each stop is serviced by seven buses per day on Saturdays and five buses on Sundays, including services at 8am, 10am, and 1pm towards Wauchope and 9am, 11am, and 2pm towards Port Macquarie.

The stop on The Ruins Way is serviced by Route 325 running from Port Macquarie towards The Point Drive. Buses stop every 30 minutes during the weekday morning peak hours and every hour during the evening peak hours. The buses operate at a one-hour frequency on Saturdays and a two-hour frequency on Sundays.

The active transport and public transport amenities around the site are shown in **Figure 3-3**.

Figure 3-3 Active transport and public transport amenities around the site



Source: Satellite imagery from Nearmap (2024) / Annotated by SCT Consulting

3.5 Residents' travel modes

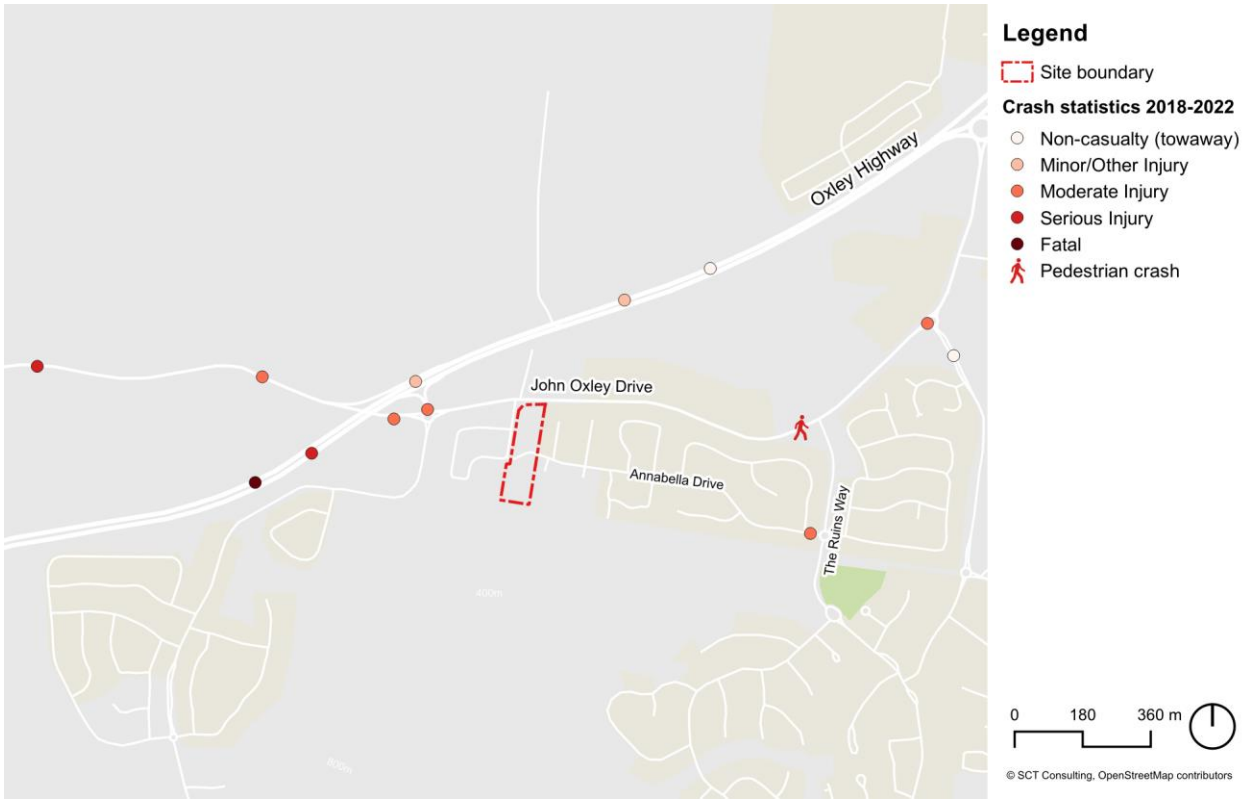
According to the 2021 Census, the Port Macquarie – West Statistical Area Level 2 (the SA2), where the site is located, had a population of 21,147 in 8,705 households, equating to an average of 2.2 persons per household.[1] Ninety per cent of households owned at least one motor vehicle with more than half owning two or more.

Further, the 2016 Census Journey to Work data indicates that 75.4 per cent of the workers who lived in the SA2 travelled to work by private car, either as driver or passenger, while only 0.8 per cent used public transport.[2] Workers who used other travel methods, did not go to work, and worked at home comprised the rest of the workforce, including the 4.5 per cent of workers who walked to work.

3.6 Crash statistics

Crash statistics between 2018 and 2022 were obtained from the Transport Open Data Hub (Transport for NSW, 2023) to develop an understanding of road crashes that occurred around the site. The locations of the crashes recorded in the five-year period are shown in **Figure 3-4**.

Figure 3-4 Locations of crashes around the site between 2018 and 2022



Source: Transport for NSW (2023)

There was a total of 13 crashes recorded over the five years, including four non-casualty and minor injury crashes, five moderate crashes, three serious injury crashes, and one crash that resulted in fatality. Five crashes occurred along John Oxley Drive and one crash on Annabella Drive.

Vehicles driving off the carriageway into objects (RUM Codes 7X and 8X) were the most common cause of crashes, involving six incidents. Rear-end collision (RUM Code 30) was another common type of crash, all occurring on the Oxley Highway including the one that resulted in a fatality.

A cross-traffic collision and a vehicle driving off the carriageway into an object took place less than 200m west of the site. The crash on Annabella Drive also involved a vehicle driving off the carriageway into an object. There was one pedestrian crash on John Oxley Drive west of The Ruins Way that resulted in a serious injury.

[1] Australian Bureau of Statistics (2021) 2021 Census data
[2] Australian Bureau of Statistics (2016) 2016 Census data

3.7 Existing traffic volumes

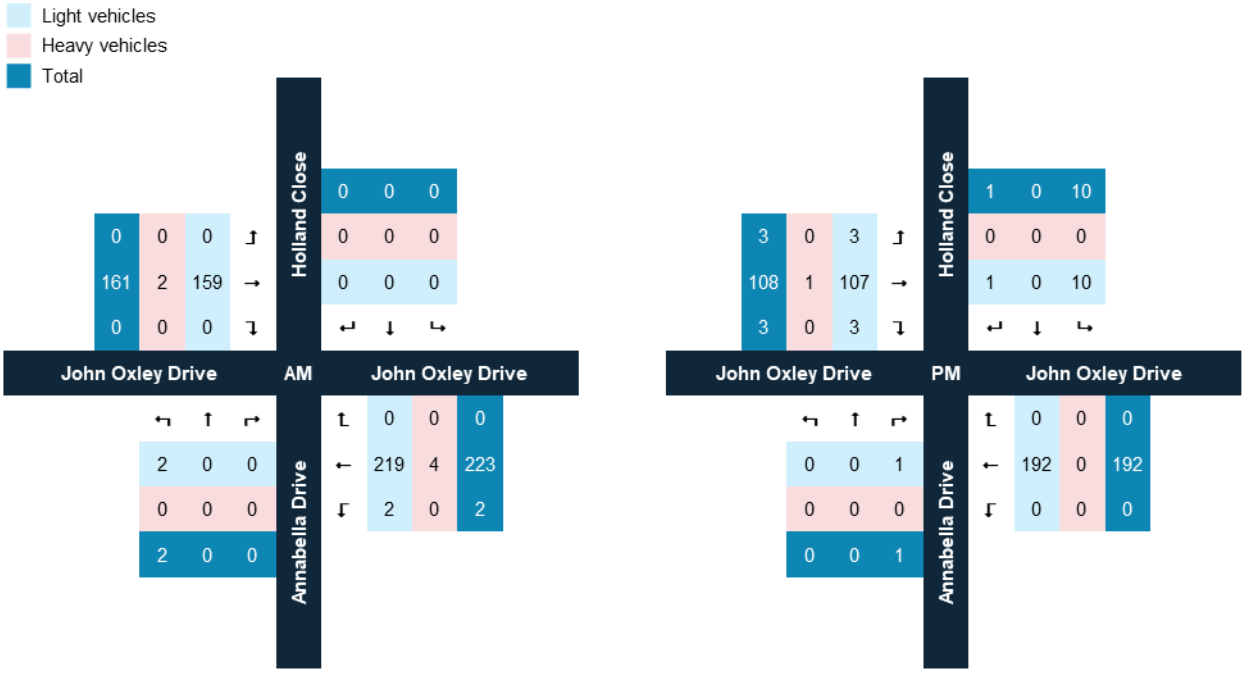
The intersection of John Oxley Drive and Annabella Drive has been identified as the key intersection that will accommodate the majority of traffic generated by the proposed facility. An on-site traffic survey was conducted on Sunday 28 July 2024 to record the existing traffic volumes and understand the current operation of the intersection. The Sunday peak hours of the intersection were found to be:

– AM peak hour: 10am – 11am.

– PM peak hour: 4:30pm – 5:30pm.

The recorded traffic volumes during the peak hours are shown in **Figure 3-5**.

Figure 3-5 Existing peak-hour traffic volumes at the John Oxley Drive / Annabella Drive intersection



3.8 Existing intersection performance

3.8.1 Intersection assessment

Intersection performance was assessed through the intersection Level of Service (LoS)—a measure of the level of congestion at an intersection based on the average delay per vehicle experienced at the intersection. **Table 3-1** provides a summary of the LoS categories as defined by the Road and Maritime Services (2013) *Traffic Modelling Guidelines*.

Table 3-1 Level of Service categories

Level of Service	Average delay per vehicle (seconds)	Performance explanation
A	Less than 14.5	Good operation
B	14.5 to 28.4	Good with acceptable delays and spare capacity
C	28.5 to 42.4	Satisfactory
D	42.5 to 56.4	Operating near capacity
E	56.5 to 70.4	At capacity, at signals incidents will cause excessive delays. Roundabouts and priority intersections require other control method.
F	70.5 or greater	Unsatisfactory with excessive queuing

Source: Road and Maritime Services (2013) *Traffic Modelling Guidelines*

In addition, the Degree of Saturation (DoS) is included to complement the LoS. It is a measure of traffic volume per capacity for the worst turning movement at an intersection. When the DoS approaches 1.00, it implies that the traffic movement is operating at close to its capacity.

The intersection performance was analysed via SIDRA Intersection 9.1, the most recent version of the software at the time of writing. The software is a traffic modelling tool commonly utilised for developments of this scale.

3.8.2 Intersection performance

The existing intersection performance is shown in **Table 3-2**.

Table 3-2 Existing intersection performance (2024)

Intersection	AM peak hour			PM peak hour		
	Delay (sec)	LoS	DoS	Delay (sec)	LoS	DoS
John Oxley Drive / Annabella Drive	9.1	A	0.12	7.9	A	0.10

Notes: LoS = Intersection Level of Service; DoS = Degree of Saturation; For priority intersections, the delay, LoS, and DoS of the worst movement are reported.

The modelling results show that the John Oxley Drive / Annabella Drive intersection is currently operating at a good operational level during both Sunday peak hours. During both peak periods, the intersection has a LoS A, a minimal DoS of around 0.10, and a delay of less than 10 seconds. Detailed SIDRA results are provided in **Appendix A**.

3.9 Surveys of current church operation

On-site surveys of the current church (hiring at Hastings Secondary College Westport Campus in Port Macquarie) have been undertaken to develop an understanding of the traffic and parking demands generated by the existing facility. The surveys were carried out over three Sundays in June 2024. **Table 3-3** provides a summary of the survey results.

Table 3-3 Summary of survey

Date	Sunday morning			Sunday afternoon		
	Attendance (persons)	Parking demand (veh)	Vehicle occupancy (persons/veh)	Attendance (persons)	Parking demand (veh)	Vehicle occupancy (persons/veh)
16 June	261	102	2.56	110	67	1.64
23 June	268	120	2.23	101	60	1.68
30 June	294	112	2.63	124	67	1.85
Average	**274**	**111**	**2.47**	**112**	**65**	**1.73**

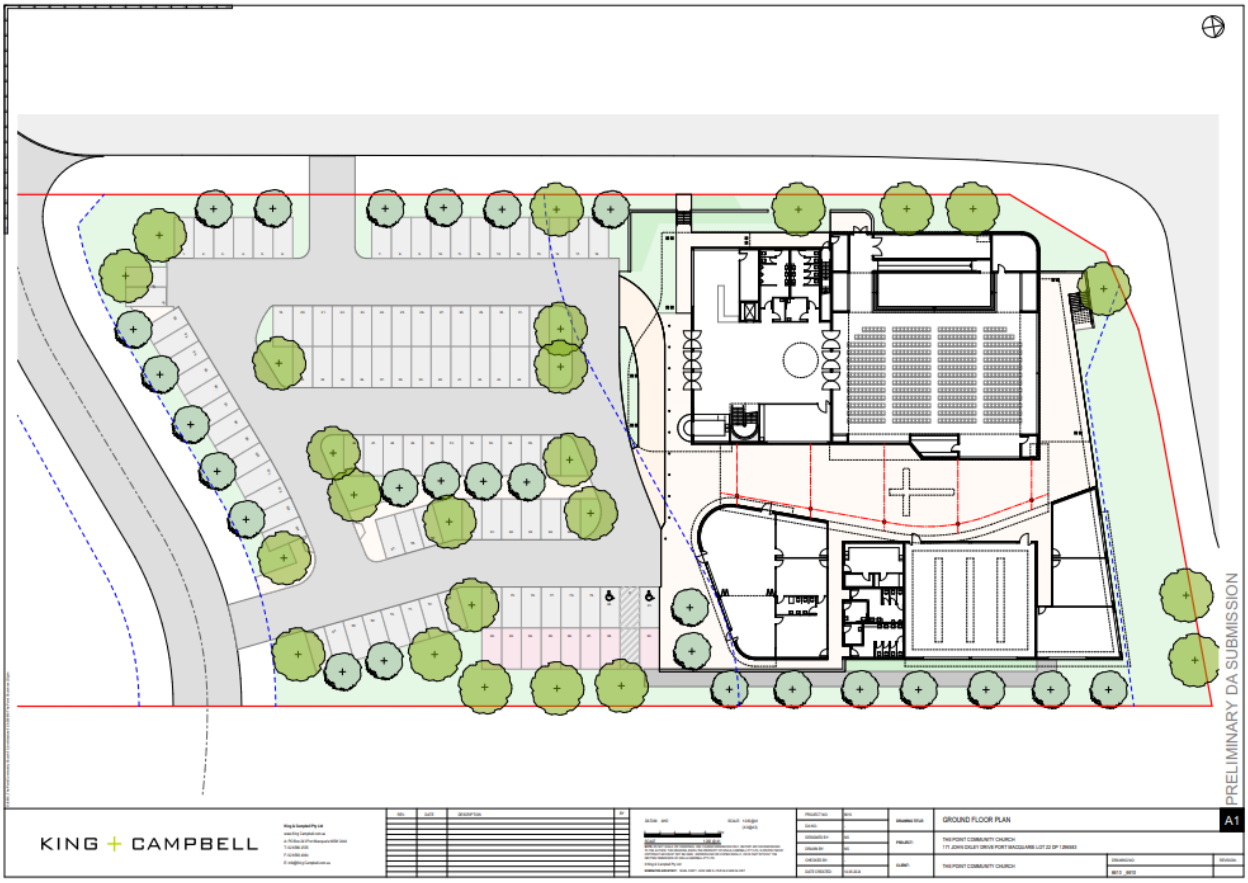
- The results indicate that the morning sessions generally held more attendance than the afternoon sessions: 274 persons on average compared to 112 persons, respectively.
- The parking demand was also higher during the morning sessions, with an average of 111 vehicles compared to 65 vehicles during the afternoon sessions.
- Further, the vehicle occupancy rates were found to be higher in the morning sessions (2.47 persons per car) than in the afternoon sessions (1.73 persons per car). This suggests that morning session attendees may travel to the facility in larger groups or are less reliant on private cars and, hence, create fewer vehicle trips per attendee.

4.0 Proposed development

4.1 The proposal

The proposal is the construction of a community church on currently vacant land at 171 John Oxley Drive, Port Macquarie. The proposed facility would be able to accommodate indicatively 500 seats and comprise associated facilities and an on-site car park of 104 spaces, including eight tandem parking spaces. An indicative site plan is illustrated in **Figure 4-1**.

Figure 4-1 Indicative site plan



Source: King & Campbell (2024)

4.2 Site access

Vehicular access to the site is provided at two locations. The western access point is on Annabella Drive while the southern access point is on the planned section of Annabella Drive to the south. Both access points would direct vehicles to the car park to the south of the proposed buildings.

4.3 Car parking

4.3.1 Parking requirements

Part B4 of the DCP provides minimum parking requirements for various developments within the LGA to ensure adequate parking provision and that the function of traffic and roads within the LGA would not be adversely impacted by new developments.

The calculation of the parking requirements applied to the site was based only on the church and the main assembly hall as they are considered the main traffic-generating component and representative of the peak parking demand

induced by the development. Other facilities can be regarded as ancillary uses and will not generate travel demand individually or as much as the church and the main assembly.

Table 4-1 summarises the parking requirements according to the DCP for uses that are relevant to the proposed development.

Table 4-1 Parking requirements of the proposed development

Use	Development scale	Parking rate	Minimum parking requirement (spaces)
Place of public worship	500 seats	1 per 6 seats	84 spaces
	257 m^2	1 per 10m^2 GFA	26 spaces
Whichever is greater			**84 spaces**

According to Part B4 of the DCP, the proposed development is required to provide a minimum of 84 parking spaces.

The DCP does not require minimum parking spaces for accessible parking, motorcycles, or bicycles. However, a reference was made to the Building Code of Australia (BCA), specifically Part D3 Access for people with a disability. The proposed site is classified as a Class 9b building. Under Part D3 of the BCA, Class 9b buildings with up to 1,000 car parking spaces are required to provide one space that complies with the AS 2890.6 standard for every 50 car parking spaces. The proposed site is thus required to provide two accessible parking spaces.

4.3.2 Parking provision

A total of 104 on-site parking spaces are proposed for the development, including eight tandem parking spaces. The provision satisfies the minimum parking requirement set out in the DCP (even considering the parking provision except for tandem parking, i.e. 96 spaces). The provision of two accessible parking spaces is also consistent with BCA.

4.4 AS 2890 review

The car park design has been reviewed against AS2890.1 – Off-street car parking, AS2890.2 – Off-street commercial vehicle facilities and AS2890.6 – Off-street parking for people with disabilities. It is noted that the design will be further refined in detailed design stages.

4.4.1 Vehicular access

The proposed access driveway has been assessed in accordance with Table 3.1 and 3.2 of AS2890.1. The proposed car parking facility represents a typical Class 3 facility for 'Short-term city and town centre parking, parking stations, hospitals, and medical centres. The proposed accesses are provided on Annabella Drive which is classified as a local road.

Therefore, considering the above factors, AS2890.1 indicates that the proposed development needs to provide Category 3 access driveways to accommodate the ingress and egress of vehicles associated with the development. Except for the 6m access to the south, the proposal involves the provision of a 7m wide access driveway on the west, which exceeds the required maximum width of 6m. However, it is arguable that the proposed access needs to satisfy the entry of a medium rigid vehicle (MRV). It is confirmed that the access driveway has been designed to the requirements of AS2890.2 (further verified by the swept path in **Appendix B**).

4.4.2 Sight distance

The sight distance requirements are described in Section 3.2.4 of AS2890.1 and are prescribed on the basis of the sign-posted speed limit or 85th percentile vehicle speeds along the frontage road.

Annabella Drive has a posted speed limit of 50km/h, which requires a desirable visibility distance of 69 metres and a minimum stopping distance of 45 metres. From a desktop study, a sight distance assessment was carried out and demonstrated that the proposed driveway is located on a straight/flat section of the road where sufficient sight distance is provided.

The proposed car park also allows for all vehicles to enter and exit in a forward direction, therefore minimising potential conflict points and maintaining the overall safety of the road network.

4.4.3 Carpark arrangement

4.4.3.1 Typical requirements

The car parking requirements have been assessed against the requirements of AS2890.1:2004, with reference to Class 3 (Short term stay) facilities:

– Car space dimensions: 2.6m x 5.4m

– Aisle width: 6.2m double-sided aisles

All spaces have been individually assessed and are compliant with the minimum requirements of AS2890.1. All spaces are to meet the clearance requirement (door openings, entry flanges) of the parking space envelope requirements provided in Figure 5.2 of AS2890.1.

4.4.3.2 Accessible parking

The two accessible parking spaces have been individually assessed against the requirements of AS2890.6. The parking spaces have been designed based on the following dimensions:

– Accessible space dimensions: 2.6m x 5.4m

– Adjacent shared space: 2.6m x 5.4m

The accessible spaces and shared spaces have been individually assessed and are compliant with the minimum requirements of AS2890.6 with relevant pavement parking and bollards.

4.4.3.3 Waste collection

A swept path assessment (**Appendix B**) has been undertaken using an 8.8m MRV to assess the manoeuvrability of the waste vehicles within the proposed carpark. The assessment indicates that the vehicles can enter via the western access and exit the site via the southern access in a forward direction. A temporary waste collection spot is on the parking aisle to the southwest of the building. It is expected that the waste collection will occur outside the church operation hours.

5.0 Future conditions and traffic generation

5.1 Background traffic in future years

The 2022 NSW Population, Housing, and Implied Dwelling Projections estimate that the population in the local area will grow from 22,085 in 2024 to 27,312 by 2036. The growth equates to a total of 23.67 per cent growth over 12 years, or an average of 1.79 per cent per annum.

With the construction of new dwellings around the site and the planned Annabella Drive, the John Oxley Drive / Annabella Drive intersection is also anticipated to accommodate new traffic generated by these houses. A desktop spatial analysis indicates that a total of 132 separate houses are expected to generate new traffic through the intersection. Given the lack of trip rates on weekends for residential in NSW's Guide to Traffic Generating Development 2002, based on Transport for London's TRICS data 2010, the 132 dwellings are estimated to generate 64 vehicles and 83 vehicles during the Sunday AM and PM peak hours, respectively, from 2026 onwards.[3] For the worst-case scenario, it is assumed that all 132 new houses will use the newly constructed Annabella Drive, which links to Lewis Circuit, to access John Oxley Drive for both eastbound and westbound travel.

Hence, background traffic volumes at the John Oxley Drive / Annabella Drive intersection during the Sunday peak hours in 2026 and 2036 are shown in **Figure 5-1** and **Figure 5-2**, respectively.

Figure 5-1 Base traffic volumes at the John Oxley Drive / Annabella Drive intersection in 2026

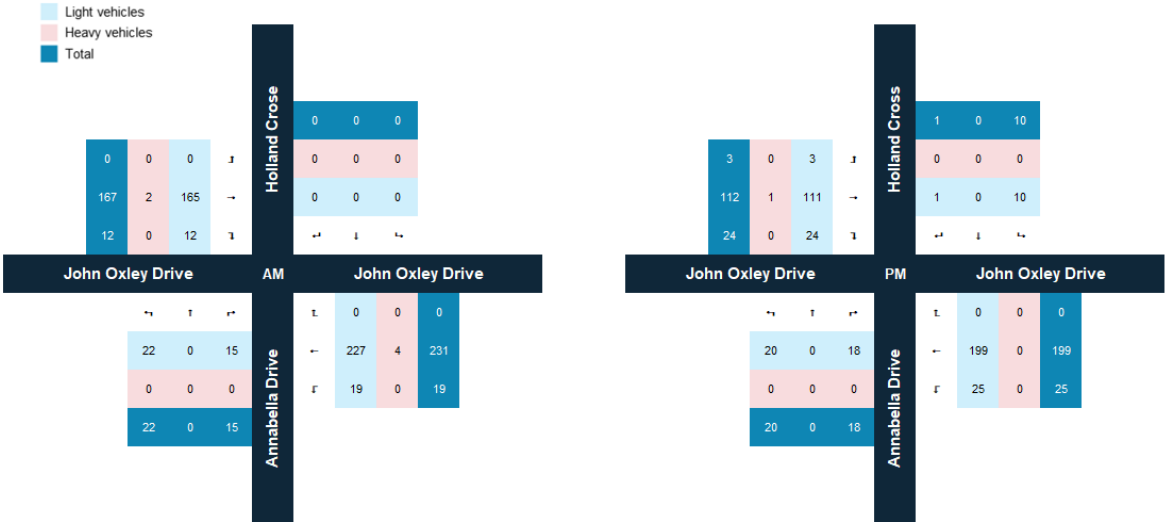
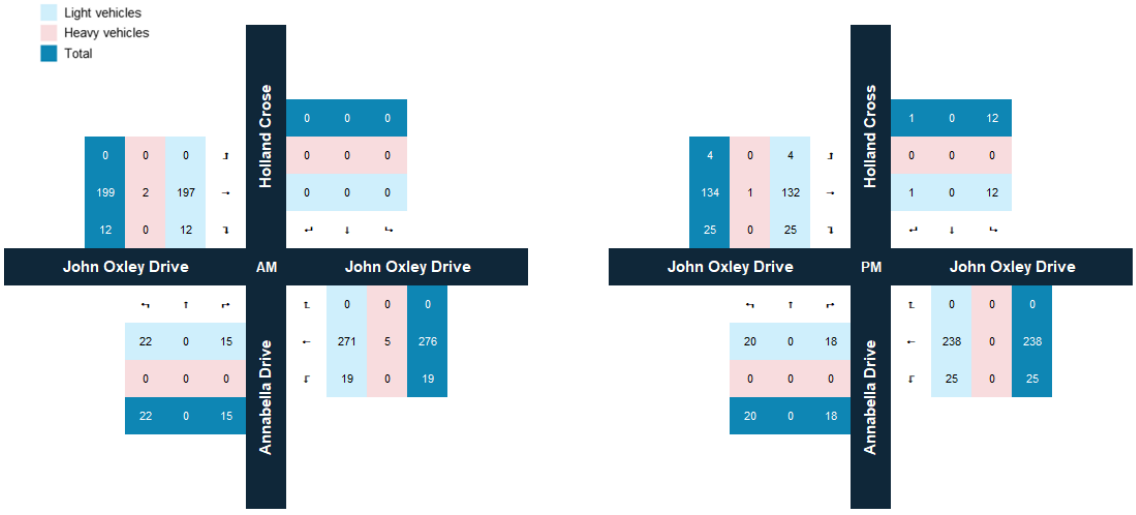


Figure 5-2 Base traffic volumes at the John Oxley Drive / Annabella Drive intersection in 2036



[3] Gennaoui F & Sannikov O (2010) as adopted from Transport for London (2010)

5.2 Traffic generation

As discussed in the survey results in **Section 3.9**, the maximum attendance for the church[4] event was 294 people in the morning session. The afternoon attendance is about 60 per cent of the morning visitation, i.e. 176 people. Hence, it is assumed the visitation for the proposed site will be 294 people and 176 people in the morning and afternoon session, respectively.

A targeted mode share was also assumed as part of the trip generation as seen in **Table 5-1** which considers a relatively high car mode share, good bus accessibility and the coach service (which is available in current operation).

Table 5-1 Target mode share

Travel mode	Targeted mode share	AM session	PM session
Coach / public bus	15%	44 people	26 people
Vehicle (car, as driver, as passenger)	80%	235 people	141 people
Active Transport	5%	14 people	9 people
Total	**100%**	**294 people**	**176 people**

The site is anticipated to provide services similar to those of the existing operation, comprising a morning session at 9.30am and an evening session at 5pm every Sunday. Assuming each session last about one hour and people usually arrive at and leave the site in 30 minutes before and after each session.

The estimation of the vehicle trips is calculated based on the surveyed vehicle occupancy. One bus is estimated to accommodate 25 people (**Table 5-2**):

– 95 cars and two buses will leave the site during the morning peak hour (10am – 11am).

– 82 cars and one bus will arrive at the site during the afternoon peak hour (4.30am – 5.30pm).

Table 5-2 Development-generated traffic

Network peak hours	Total trips per direction	Incoming	Outgoing
Morning (10:00-11:00)	95 cars and 2 buses	Outside peak hours	95 cars and 2 buses
Afternoon (16:30-17:30)	82 cars and 1 bus	82 cars and 1 bus	Outside peak hours

According to the research[5], one staff for every 76 persons in average weekly worship attendance can be assumed to estimate the number of staff on site. This will result in up to four staff for the proposed facility during both sessions. However, given staff usually generate trips outside the peak hours, the staff car trips will not be included in the peak hour traffic analysis.

5.3 Traffic distribution

The distribution of vehicular traffic generated by the development was estimated based on the locations of existing churches in the Port Macquarie region and the overall built-up areas around the site.

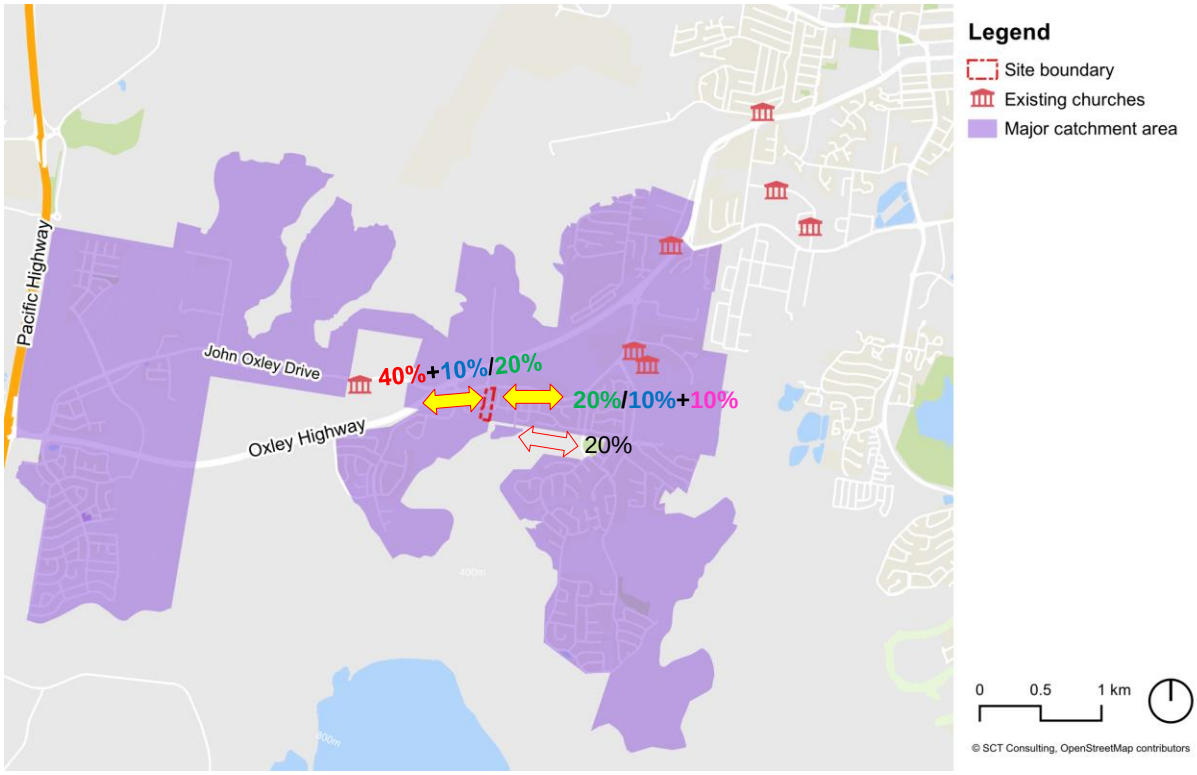
The desktop spatial analysis suggests that the areas northeast of the site towards the Port Macquarie town centre are well served by a number of existing churches. Meanwhile, the residential areas along John Oxley Drive are within relatively short distances from only one existing church slightly to the west of the Oxley Highway.

The proposed Church is thus expected to provide services primarily for local residents who reside in the proximity of the site. Based on the Urban Growth Management Strategy 2017 – 2036 and the spatial analysis, the major catchment area of the Church would cover around 8,000 dwellings by 2036, as shown in **Figure 5-3**. Out of these,

[4] It is advised that the church currently hires Westport – Hastings Secondary College Hall. The campus has a student body of approx. 1,450 students. Which would not restrict the visitation of the church operation. Regardless, a maximum attendance of 294 persons were recorded during the survey in June.
[5] What Budget Percentages Are Right For Your Church?" (Vanderbloemen)

roughly 4,500 dwellings are located to the east of the site and the Oxley Highway, while the other 3,500 dwellings would be around Thrumster and west of the Oxley Highway.[6]

Figure 5-3 Existing churches around the site and traffic distribution



Noted that the percentages of A/B represent inbound and outbound.

Source: Google Maps (2024) / Annotated by SCT Consulting

Based on the above, the places of residence of potential church visitors are expected to be the Innes Peninsula, Thrumster, the western fringe of Port Macquarie, and the Port Macquarie town centre (**Figure 5-3**).

– Visitors from the Innes Peninsula are expected to travel to and from the Church via the access on the Annabella Drive missing link and would not pass through the John Oxley Drive / Annabella Drive intersection (20%).

– Most of the Thrumster residents would access the site from the access point on Annabella Drive via the western approach of the John Oxley Drive / Annabella Drive intersection (**40%**).

– The rest of the Thrumster residents would travel along the Oxley Highway and use the roundabout at John Oxley Drive in the east and further access from the east approach of the intersection (**20%**). It is noted that outgoing traffic can use the roundabout at Philip Charles Drive to the west to access Oxley Highway, hence, they will turn left from Annabella Drive when returning.

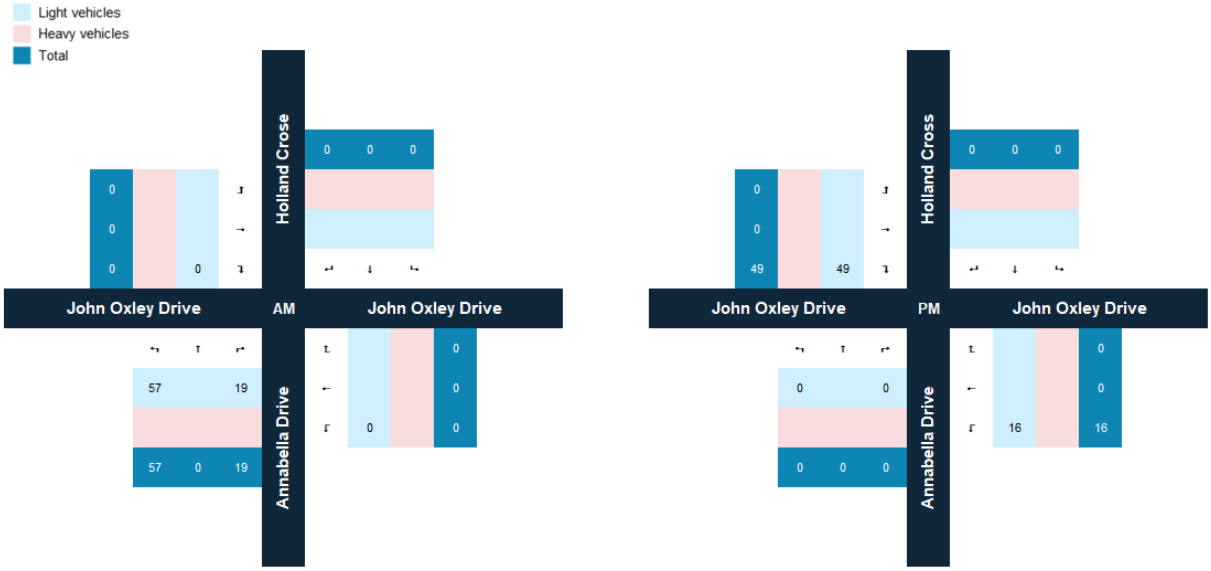
– The residents from the western fringe of Port Macquarie would access the site via east approach of John Oxley Drive / Annabella Drive intersection (**10%**).

– Lastly, a small number of visitors from the Port Macquarie town centre are expected to travel to and from the Church on the Oxley Highway and exit via the roundabout at Philip Charley Drive. Hence, they will use the west approach of the John Oxley Drive / Annabella Drive intersection (**10%**). It is noted that outgoing traffic can use the roundabout at John Oxley Drive to the east to access Oxley Highway, hence, they will turn right from Annabella Drive when returning.

The distribution of the site-generated traffic is shown diagrammatically in **Figure 5-4**.

[6] Australian Bureau of Statistics (2021) 2021 Census data

Figure 5-4 Distribution of traffic generated by the proposed development



6.0 Traffic and transport impact assessment

6.1 Road network impact

The potential road network impact of the proposed development was analysed through traffic modelling at the John Oxley Drive / Annabella Drive intersection to assess the changes in the intersection performance with and without the proposed site. The traffic modelling was performed under the traffic conditions in the year 2026 when the development is planned to be completed and the year 2036 (ten years after its completion). Each design year comprises two scenarios as follows:

1. **Future year base without development:** This scenario includes projected background traffic volumes in each design year, considering population growth and development in the pipeline in the vicinity of the site.
2. **Future year with development:** This scenario takes into account the projected background traffic in each design year as well as the traffic expected to be generated by the development.

The modelling results for the John Oxley Drive / Annabella Drive intersection performance under the four scenarios are presented in **Table 6-1**.

Table 6-1 Summary of intersection performance in future years

AM peak hour			PM peak hour		
Delay (sec)	**LoS**	**DoS**	**Delay (sec)**	**LoS**	**DoS**
2026 without development					
9.9	**A**	0.13	8.8	**A**	0.11
2026 with development					
10.8	**A**	0.13	9.7	**A**	0.11
2036 without development					
11.6	**A**	0.15	10.0	**A**	0.13
2036 with development					
12.6	**A**	0.15	11.0	**A**	0.13

Notes: LoS = Intersection Level of Service; DoS = Degree of Saturation; For priority intersections, the delay, LoS, and DoS of the worst movement are reported.

Based on the modelling results, it is evident that the proposed development will not have any significant impact on the operation of the John Oxley Drive / Annabella Drive intersection, either in the immediate future or ten years after the development. The level of service will be maintained in the same category with sufficient remaining capacity during the peak hours. The increase in intersection delay is no more than one second and there is no change to the degree of saturation.

6.2 Active transport

Based on the analyses discussed in earlier sections of this TIA, it is evident that most of the travel demand induced by the proposed development will likely be taken by private cars. Considering the household vehicle ownership and residents' travel modes at the SA2 level, only a small portion of potential visitors to the Church will travel via active transport or public transport modes. As such, the existing active transport and public transport amenities are expected to be able to accommodate all development-generated travel demands and no infrastructure upgrades will be required.

6.3 Public transport impact

The proposed development is in the vicinity of the bus stops on John Oxley Drive, which supports the visitor's access by public buses. It is expected that the public transport demand would be accommodated by the existing public transport network given the relatively small scale of the yield.

Given the nature of church activities, it is also proposed that the coach service will continue to operate during the events which will further reduce car trips and improve sustainability outcomes. It is suggested that a green travel plan is developed by the proponent before the operation to inform the visitors of detailed information for using coach services.

6.4 Parking impact

The analysis concludes that parking demand of a maximum of 95 and 82 spaces may be generated by the proposed development based on the traffic generation estimation. Based on the survey data across the three dates, the calculated 85th percentile parking demand would be 93 and 79 parking spaces.

A total of 104 parking spaces are proposed to be provided on-site, including eight tandem parking spaces. This will accommodate both the maximum visitation of the church and 85 percentile parking demand (even excluding the tandem parking spaces). It will not adversely impact the operation and safety of the surrounding road network.

In events of full-capacity attendance, i.e. 500 people, parking overflow onto public roads may take place, which will need to be resolved by a combination of:

– A Temporary Traffic Management Plan that identifies on-street parking and overflow parking

– Additional coach services or coaches with larger capacity to further reduce car use

– Encouragement of increased car occupancy

– Re-time of the events to avoid overlapping with network pear hours.

7.0 Conclusion

The proponent is seeking the construction of a community church on currently vacant land at 171 John Oxley Drive, Port Macquarie. The proposed site would be able to accommodate 500 seats and comprise an on-site car park of 104 spaces, including eight tandem parking spaces, and associated facilities.

– Vehicular access to the site is provided at two locations on Annabella Drive to the west of the site and on the planned Annabella Drive to the south.

– The design of the proposed car park conforms with the AS 2890 standards. An MRV will be accommodated within the car park for waste collection.

– According to Part B4 of the DCP, the proposed development is required to provide a minimum of 84 parking spaces. Meanwhile, Part D3 of the BCA requires two accessible parking spaces out of the total 84 parking spaces. A total of 104 parking spaces are proposed, including eight tandem parking spaces and two accessible parking spaces, satisfying the requirements.

– The intersection of John Oxley Drive and Annabella Drive has been identified as the key intersection that will accommodate the majority of traffic generated by the proposed facility. The network peak hours are identified to be 10am to 11am and 4.30pm to 5.30pm on Sundays.

– The maximum attendance for the proposed facility is estimated to be 294 people in the morning session and 176 people in the afternoon session. Hence, based on the assumed mode share and surveyed vehicle occupancy, the proposed Church is estimated to generate a total of 95 vehicles during the Sunday AM peak hour and 82 vehicles during the Sunday PM peak hour.

– Assuming people usually arrive at and leave the site 30 minutes before and after each session, 95 cars and two buses will leave the site during the morning peak hour (10am to 11am) whereas 82 cars and one bus will arrive at the site during the afternoon peak hour (4.30am to 5.30pm).

– The SIDRA modelling results show that the proposed development will not have any significant impact on the operation of the John Oxley Drive / Annabella Drive intersection during either peak hour.

– Parking demand of a maximum of 95 and 82 spaces may be generated by the proposed development. Based on the survey data across the three dates, the calculated 85th percentile parking demand would be 93 and 79 parking spaces. A total of 104 parking spaces are proposed to be provided on-site, including eight tandem parking spaces. This will still accommodate the parking demand of both the maximum and 85 percentile visitations of the church. It will not adversely impact the operation and safety of the surrounding road network.

The TIA concludes that the impact of the proposal will be fully accommodated by the existing and planned infrastructure.

APPENDIX A

SIDRA RESULTS

MOVEMENT SUMMARY

Site: 1AMX [1.JOH_ANN_24_AM_X (Site Folder: Base 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Base year 2024
Sunday AM (10AM-11AM)
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	2	0.0	2	0.0	0.002	5.4	LOS A	0.0	0.0	0.32	0.50	0.32	39.0
2	T1	All MCs	1	0.0	1	0.0	0.004	7.2	LOS A	0.0	0.1	0.52	0.57	0.52	30.4
3	R2	All MCs	1	0.0	1	0.0	0.004	9.1	LOS A	0.0	0.1	0.52	0.57	0.52	44.8
Approach			4	0.0	4	0.0	0.004	6.8	LOS A	0.0	0.1	0.42	0.54	0.42	39.5
East: John Oxley Drive (E)															
4	L2	All MCs	2	0.0	2	0.0	0.001	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	235	1.8	235	1.8	0.122	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
6	R2	All MCs	1	0.0	1	0.0	0.122	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.6
Approach			238	1.8	238	1.8	0.122	0.1	NA	0.0	0.1	0.00	0.01	0.00	59.8
North: Holland Close (N)															
7	L2	All MCs	1	0.0	1	0.0	0.005	5.2	LOS A	0.0	0.1	0.45	0.53	0.45	46.1
8	T1	All MCs	1	0.0	1	0.0	0.005	7.2	LOS A	0.0	0.1	0.45	0.53	0.45	31.7
9	R2	All MCs	1	0.0	1	0.0	0.005	9.1	LOS A	0.0	0.1	0.45	0.53	0.45	38.4
Approach			3	0.0	3	0.0	0.005	7.2	LOS A	0.0	0.1	0.45	0.53	0.45	40.6
West: John Oxley Drive (W)															
10	L2	All MCs	1	0.0	1	0.0	0.088	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.1
11	T1	All MCs	169	1.2	169	1.2	0.088	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	All MCs	1	0.0	1	0.0	0.001	6.2	LOS A	0.0	0.0	0.33	0.51	0.33	38.9
Approach			172	1.2	172	1.2	0.088	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
All Vehicles			417	1.5	417	1.5	0.122	0.2	NA	0.0	0.1	0.01	0.02	0.01	59.6

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1PMX [1.JOH_ANN_24_PM_X (Site Folder: Base 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Base year 2024
Sunday PM (4.30PM-5.30PM)
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	1	0.0	1	0.0	0.001	5.3	LOS A	0.0	0.0	0.29	0.48	0.29	39.2
2	T1	All MCs	1	0.0	1	0.0	0.004	6.2	LOS A	0.0	0.1	0.47	0.54	0.47	31.8
3	R2	All MCs	1	0.0	1	0.0	0.004	7.9	LOS A	0.0	0.1	0.47	0.54	0.47	45.8
Approach			3	0.0	3	0.0	0.004	6.5	LOS A	0.0	0.1	0.41	0.52	0.41	40.6
East: John Oxley Drive (E)															
4	L2	All MCs	1	0.0	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	202	0.0	202	0.0	0.104	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
6	R2	All MCs	1	0.0	1	0.0	0.104	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.6
Approach			204	0.0	204	0.0	0.104	0.1	NA	0.0	0.1	0.00	0.01	0.00	59.9
North: Holland Close (N)															
7	L2	All MCs	11	0.0	11	0.0	0.012	5.0	LOS A	0.0	0.3	0.25	0.50	0.25	47.8
8	T1	All MCs	1	0.0	1	0.0	0.012	6.3	LOS A	0.0	0.3	0.25	0.50	0.25	34.2
9	R2	All MCs	1	0.0	1	0.0	0.012	7.9	LOS A	0.0	0.3	0.25	0.50	0.25	40.6
Approach			13	0.0	13	0.0	0.012	5.3	LOS A	0.0	0.3	0.25	0.50	0.25	46.8
West: John Oxley Drive (W)															
10	L2	All MCs	3	0.0	3	0.0	0.060	5.5	LOS A	0.0	0.0	0.00	0.02	0.00	52.8
11	T1	All MCs	114	0.9	114	0.9	0.060	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
12	R2	All MCs	3	0.0	3	0.0	0.002	6.1	LOS A	0.0	0.1	0.30	0.52	0.30	39.0
Approach			120	0.9	120	0.9	0.060	0.3	NA	0.0	0.1	0.01	0.03	0.01	59.3
All Vehicles			340	0.3	340	0.3	0.104	0.4	NA	0.0	0.3	0.02	0.04	0.02	59.0

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1AMF26 [1.JOH_ANN_26_AM_F (Site Folder: Future base 2026)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Future base 2026
Sunday AM (10AM-11AM)
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	23	0.0	23	0.0	0.021	5.5	LOS A	0.1	0.5	0.33	0.54	0.33	38.9
2	T1	All MCs	1	0.0	1	0.0	0.038	7.9	LOS A	0.1	1.0	0.54	0.70	0.54	28.4
3	R2	All MCs	16	0.0	16	0.0	0.038	9.9	LOS A	0.1	1.0	0.54	0.70	0.54	43.2
Approach			40	0.0	40	0.0	0.038	7.3	LOS A	0.1	1.0	0.42	0.61	0.42	41.0
East: John Oxley Drive (E)															
4	L2	All MCs	20	0.0	20	0.0	0.011	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	243	1.7	243	1.7	0.126	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
6	R2	All MCs	1	0.0	1	0.0	0.126	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.7
Approach			264	1.6	264	1.6	0.126	0.4	NA	0.0	0.1	0.00	0.05	0.00	59.1
North: Holland Close (N)															
7	L2	All MCs	1	0.0	1	0.0	0.005	5.2	LOS A	0.0	0.1	0.47	0.54	0.47	45.7
8	T1	All MCs	1	0.0	1	0.0	0.005	7.8	LOS A	0.0	0.1	0.47	0.54	0.47	31.1
9	R2	All MCs	1	0.0	1	0.0	0.005	9.9	LOS A	0.0	0.1	0.47	0.54	0.47	37.9
Approach			3	0.0	3	0.0	0.005	7.6	LOS A	0.0	0.1	0.47	0.54	0.47	40.1
West: John Oxley Drive (W)															
10	L2	All MCs	1	0.0	1	0.0	0.091	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.1
11	T1	All MCs	176	1.2	176	1.2	0.091	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	All MCs	13	0.0	13	0.0	0.009	6.3	LOS A	0.0	0.3	0.35	0.55	0.35	38.8
Approach			189	1.1	189	1.1	0.091	0.5	NA	0.0	0.3	0.02	0.04	0.02	59.0
All Vehicles			497	1.3	497	1.3	0.126	1.0	NA	0.1	1.0	0.05	0.09	0.05	57.7

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1PMF26 [1.JOH_ANN_26_PM_F (Site Folder: Future base 2026)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Future base 2026
Sunday PM (4.30PM-5.30PM)
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	21	0.0	21	0.0	0.018	5.4	LOS A	0.1	0.5	0.30	0.52	0.30	39.1
2	T1	All MCs	1	0.0	1	0.0	0.040	6.9	LOS A	0.1	1.0	0.51	0.67	0.51	29.6
3	R2	All MCs	19	0.0	19	0.0	0.040	8.8	LOS A	0.1	1.0	0.51	0.67	0.51	44.2
Approach			41	0.0	41	0.0	0.040	7.0	LOS A	0.1	1.0	0.40	0.59	0.40	42.0
East: John Oxley Drive (E)															
4	L2	All MCs	26	0.0	26	0.0	0.014	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	209	0.0	209	0.0	0.108	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
6	R2	All MCs	1	0.0	1	0.0	0.108	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.6
Approach			237	0.0	237	0.0	0.108	0.6	NA	0.0	0.1	0.00	0.07	0.00	58.7
North: Holland Close (N)															
7	L2	All MCs	11	0.0	11	0.0	0.012	5.0	LOS A	0.0	0.3	0.26	0.50	0.26	47.7
8	T1	All MCs	1	0.0	1	0.0	0.012	6.9	LOS A	0.0	0.3	0.26	0.50	0.26	34.1
9	R2	All MCs	1	0.0	1	0.0	0.012	8.7	LOS A	0.0	0.3	0.26	0.50	0.26	40.5
Approach			13	0.0	13	0.0	0.012	5.4	LOS A	0.0	0.3	0.26	0.50	0.26	46.8
West: John Oxley Drive (W)															
10	L2	All MCs	3	0.0	3	0.0	0.062	5.5	LOS A	0.0	0.0	0.00	0.02	0.00	52.8
11	T1	All MCs	118	0.9	118	0.9	0.062	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
12	R2	All MCs	25	0.0	25	0.0	0.017	6.2	LOS A	0.1	0.5	0.33	0.55	0.33	38.9
Approach			146	0.7	146	0.7	0.062	1.2	NA	0.1	0.5	0.06	0.11	0.06	57.3
All Vehicles			437	0.2	437	0.2	0.108	1.6	NA	0.1	1.0	0.07	0.14	0.07	56.5

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1AMDev26 [1.JOH_ANN_26_AM_Dev (Site Folder: Future 2026 with Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Future year 2026 with development
Sunday AM (10AM-11AM)
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	82	0.0	82	0.0	0.073	5.8	LOS A	0.3	2.0	0.35	0.58	0.35	39.9
2	T1	All MCs	1	0.0	1	0.0	0.083	8.1	LOS A	0.3	2.1	0.55	0.76	0.55	28.5
3	R2	All MCs	36	0.0	36	0.0	0.083	10.4	LOS A	0.3	2.1	0.55	0.76	0.55	43.3
Approach			119	0.0	119	0.0	0.083	7.2	LOS A	0.3	2.1	0.41	0.64	0.41	41.3
East: John Oxley Drive (E)															
4	L2	All MCs	20	0.0	20	0.0	0.011	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	243	1.7	243	1.7	0.126	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
6	R2	All MCs	1	0.0	1	0.0	0.126	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.7
Approach			264	1.6	264	1.6	0.126	0.4	NA	0.0	0.1	0.00	0.05	0.00	59.1
North: Holland Close (N)															
7	L2	All MCs	1	0.0	1	0.0	0.006	5.2	LOS A	0.0	0.1	0.49	0.54	0.49	45.4
8	T1	All MCs	1	0.0	1	0.0	0.006	7.8	LOS A	0.0	0.1	0.49	0.54	0.49	30.6
9	R2	All MCs	1	0.0	1	0.0	0.006	10.8	LOS A	0.0	0.1	0.49	0.54	0.49	37.5
Approach			3	0.0	3	0.0	0.006	7.9	LOS A	0.0	0.1	0.49	0.54	0.49	39.7
West: John Oxley Drive (W)															
10	L2	All MCs	1	0.0	1	0.0	0.091	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.1
11	T1	All MCs	176	1.2	176	1.2	0.091	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	All MCs	13	0.0	13	0.0	0.009	6.3	LOS A	0.0	0.3	0.35	0.55	0.35	38.8
Approach			189	1.1	189	1.1	0.091	0.5	NA	0.0	0.3	0.02	0.04	0.02	59.0
All Vehicles			576	1.1	576	1.1	0.126	1.9	NA	0.3	2.1	0.10	0.17	0.10	56.0

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1PMDev26 [1.JOH_ANN_26_PM_Dev (Site Folder: Future 2026 with Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Future year 2026 with development
Sunday PM (4.30PM-5.30PM)
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	21	0.0	21	0.0	0.018	5.4	LOS A	0.1	0.5	0.30	0.52	0.30	39.1
2	T1	All MCs	1	0.0	1	0.0	0.044	7.7	LOS A	0.2	1.1	0.54	0.70	0.54	28.6
3	R2	All MCs	19	0.0	19	0.0	0.044	9.7	LOS A	0.2	1.1	0.54	0.70	0.54	43.4
Approach			41	0.0	41	0.0	0.044	7.4	LOS A	0.2	1.1	0.42	0.61	0.42	41.5
East: John Oxley Drive (E)															
4	L2	All MCs	43	0.0	43	0.0	0.023	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	209	0.0	209	0.0	0.108	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
6	R2	All MCs	1	0.0	1	0.0	0.108	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.6
Approach			254	0.0	254	0.0	0.108	1.0	NA	0.0	0.1	0.00	0.10	0.00	58.0
North: Holland Close (N)															
7	L2	All MCs	11	0.0	11	0.0	0.012	5.0	LOS A	0.0	0.3	0.27	0.50	0.27	47.7
8	T1	All MCs	1	0.0	1	0.0	0.012	7.8	LOS A	0.0	0.3	0.27	0.50	0.27	34.1
9	R2	All MCs	1	0.0	1	0.0	0.012	9.4	LOS A	0.0	0.3	0.27	0.50	0.27	40.4
Approach			13	0.0	13	0.0	0.012	5.6	LOS A	0.0	0.3	0.27	0.50	0.27	46.7
West: John Oxley Drive (W)															
10	L2	All MCs	3	0.0	3	0.0	0.062	5.5	LOS A	0.0	0.0	0.00	0.02	0.00	52.8
11	T1	All MCs	118	0.9	118	0.9	0.062	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
12	R2	All MCs	76	0.0	76	0.0	0.053	6.3	LOS A	0.2	1.7	0.35	0.58	0.35	38.8
Approach			197	0.5	197	0.5	0.062	2.5	NA	0.2	1.7	0.13	0.23	0.13	53.8
All Vehicles			504	0.2	504	0.2	0.108	2.2	NA	0.2	1.7	0.09	0.20	0.09	55.0

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1AMF36 [1.JOH_ANN_36_AM_F (Site Folder: Future base 2036)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Future base 2036
Sunday AM (10AM-11AM)
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	23	0.0	23	0.0	0.022	5.8	LOS A	0.1	0.6	0.37	0.55	0.37	38.7
2	T1	All MCs	1	0.0	1	0.0	0.044	9.2	LOS A	0.2	1.1	0.59	0.75	0.59	26.7
3	R2	All MCs	16	0.0	16	0.0	0.044	11.6	LOS A	0.2	1.1	0.59	0.75	0.59	41.9
Approach			40	0.0	40	0.0	0.044	8.1	LOS A	0.2	1.1	0.46	0.64	0.46	40.2
East: John Oxley Drive (E)															
4	L2	All MCs	20	0.0	20	0.0	0.011	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	291	1.8	291	1.8	0.151	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	60.0
6	R2	All MCs	1	0.0	1	0.0	0.151	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.7
Approach			312	1.7	312	1.7	0.151	0.4	NA	0.0	0.1	0.00	0.04	0.00	59.2
North: Holland Close (N)															
7	L2	All MCs	1	0.0	1	0.0	0.006	5.3	LOS A	0.0	0.2	0.52	0.57	0.52	44.8
8	T1	All MCs	1	0.0	1	0.0	0.006	9.1	LOS A	0.0	0.2	0.52	0.57	0.52	29.8
9	R2	All MCs	1	0.0	1	0.0	0.006	11.4	LOS A	0.0	0.2	0.52	0.57	0.52	36.8
Approach			3	0.0	3	0.0	0.006	8.6	LOS A	0.0	0.2	0.52	0.57	0.52	39.0
West: John Oxley Drive (W)															
10	L2	All MCs	1	0.0	1	0.0	0.109	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.1
11	T1	All MCs	211	1.5	211	1.5	0.109	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	All MCs	13	0.0	13	0.0	0.009	6.5	LOS A	0.0	0.3	0.38	0.56	0.38	38.6
Approach			224	1.4	224	1.4	0.109	0.4	NA	0.0	0.3	0.02	0.03	0.02	59.1
All Vehicles			579	1.5	579	1.5	0.151	1.0	NA	0.2	1.1	0.04	0.08	0.04	58.0

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1PMF36 [1.JOH_ANN_36_PM_F (Site Folder: Future base 2036)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Future base 2036
Sunday PM (4.30PM-5.30PM)
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	21	0.0	21	0.0	0.019	5.5	LOS A	0.1	0.5	0.34	0.54	0.34	38.9
2	T1	All MCs	1	0.0	1	0.0	0.045	7.8	LOS A	0.2	1.1	0.54	0.71	0.54	28.4
3	R2	All MCs	19	0.0	19	0.0	0.045	10.0	LOS A	0.2	1.1	0.54	0.71	0.54	43.2
Approach			41	0.0	41	0.0	0.045	7.6	LOS A	0.2	1.1	0.44	0.62	0.44	41.3
East: John Oxley Drive (E)															
4	L2	All MCs	26	0.0	26	0.0	0.014	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	251	0.0	251	0.0	0.129	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	60.0
6	R2	All MCs	1	0.0	1	0.0	0.129	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.7
Approach			278	0.0	278	0.0	0.129	0.5	NA	0.0	0.1	0.00	0.06	0.00	58.9
North: Holland Close (N)															
7	L2	All MCs	14	0.0	14	0.0	0.015	5.1	LOS A	0.1	0.4	0.29	0.50	0.29	47.6
8	T1	All MCs	1	0.0	1	0.0	0.015	7.9	LOS A	0.1	0.4	0.29	0.50	0.29	34.0
9	R2	All MCs	1	0.0	1	0.0	0.015	9.8	LOS A	0.1	0.4	0.29	0.50	0.29	40.4
Approach			16	0.0	16	0.0	0.015	5.6	LOS A	0.1	0.4	0.29	0.50	0.29	46.8
West: John Oxley Drive (W)															
10	L2	All MCs	4	0.0	4	0.0	0.074	5.5	LOS A	0.0	0.0	0.00	0.02	0.00	52.8
11	T1	All MCs	140	0.8	140	0.8	0.074	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
12	R2	All MCs	26	0.0	26	0.0	0.019	6.4	LOS A	0.1	0.6	0.36	0.56	0.36	38.7
Approach			171	0.6	171	0.6	0.074	1.1	NA	0.1	0.6	0.05	0.10	0.05	57.5
All Vehicles			505	0.2	505	0.2	0.129	1.5	NA	0.2	1.1	0.06	0.13	0.06	56.7

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1AMDev36 [1.JOH_ANN_36_AM_Dev (Site Folder: Future 2036 with Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Future year 2036 with development
Sunday AM (10AM-11AM)
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	82	0.0	82	0.0	0.077	6.0	LOS A	0.3	2.1	0.38	0.60	0.38	39.7
2	T1	All MCs	1	0.0	1	0.0	0.096	9.5	LOS A	0.3	2.4	0.60	0.81	0.60	26.8
3	R2	All MCs	36	0.0	36	0.0	0.096	12.1	LOS A	0.3	2.4	0.60	0.81	0.60	41.9
Approach			119	0.0	119	0.0	0.096	7.9	LOS A	0.3	2.4	0.45	0.67	0.45	40.6
East: John Oxley Drive (E)															
4	L2	All MCs	20	0.0	20	0.0	0.011	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	291	1.8	291	1.8	0.151	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	60.0
6	R2	All MCs	1	0.0	1	0.0	0.151	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.7
Approach			312	1.7	312	1.7	0.151	0.4	NA	0.0	0.1	0.00	0.04	0.00	59.2
North: Holland Close (N)															
7	L2	All MCs	1	0.0	1	0.0	0.006	5.3	LOS A	0.0	0.2	0.54	0.57	0.54	44.5
8	T1	All MCs	1	0.0	1	0.0	0.006	9.1	LOS A	0.0	0.2	0.54	0.57	0.54	29.3
9	R2	All MCs	1	0.0	1	0.0	0.006	12.6	LOS A	0.0	0.2	0.54	0.57	0.54	36.4
Approach			3	0.0	3	0.0	0.006	9.0	LOS A	0.0	0.2	0.54	0.57	0.54	38.6
West: John Oxley Drive (W)															
10	L2	All MCs	1	0.0	1	0.0	0.109	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	53.1
11	T1	All MCs	211	1.5	211	1.5	0.109	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	All MCs	13	0.0	13	0.0	0.009	6.5	LOS A	0.0	0.3	0.38	0.56	0.38	38.6
Approach			224	1.4	224	1.4	0.109	0.4	NA	0.0	0.3	0.02	0.03	0.02	59.1
All Vehicles			658	1.3	658	1.3	0.151	1.8	NA	0.3	2.4	0.09	0.15	0.09	56.3

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1PMDev36 [1.JOH_ANN_36_PM_Dev (Site Folder: Future 2036 with Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

1. John Oxley Drive / Annabella Drive / Holland Close
Future year 2036 with development
Sunday PM (4.30PM-5.30PM)
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Annabella Drive (S)															
1	L2	All MCs	21	0.0	21	0.0	0.019	5.5	LOS A	0.1	0.5	0.34	0.54	0.34	38.9
2	T1	All MCs	1	0.0	1	0.0	0.049	8.6	LOS A	0.2	1.2	0.57	0.74	0.57	27.3
3	R2	All MCs	19	0.0	19	0.0	0.049	11.0	LOS A	0.2	1.2	0.57	0.74	0.57	42.3
Approach			41	0.0	41	0.0	0.049	8.1	LOS A	0.2	1.2	0.45	0.64	0.45	40.8
East: John Oxley Drive (E)															
4	L2	All MCs	43	0.0	43	0.0	0.023	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	48.7
5	T1	All MCs	251	0.0	251	0.0	0.129	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	60.0
6	R2	All MCs	1	0.0	1	0.0	0.129	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	54.7
Approach			295	0.0	295	0.0	0.129	0.8	NA	0.0	0.1	0.00	0.09	0.00	58.3
North: Holland Close (N)															
7	L2	All MCs	14	0.0	14	0.0	0.016	5.1	LOS A	0.1	0.4	0.29	0.51	0.29	47.6
8	T1	All MCs	1	0.0	1	0.0	0.016	8.8	LOS A	0.1	0.4	0.29	0.51	0.29	33.9
9	R2	All MCs	1	0.0	1	0.0	0.016	10.6	LOS A	0.1	0.4	0.29	0.51	0.29	40.3
Approach			16	0.0	16	0.0	0.016	5.7	LOS A	0.1	0.4	0.29	0.51	0.29	46.8
West: John Oxley Drive (W)															
10	L2	All MCs	4	0.0	4	0.0	0.074	5.5	LOS A	0.0	0.0	0.00	0.02	0.00	52.8
11	T1	All MCs	140	0.8	140	0.8	0.074	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
12	R2	All MCs	77	0.0	77	0.0	0.056	6.5	LOS A	0.2	1.7	0.38	0.59	0.38	38.7
Approach			221	0.5	221	0.5	0.074	2.4	NA	0.2	1.7	0.13	0.22	0.13	54.3
All Vehicles			573	0.2	573	0.2	0.129	2.1	NA	0.2	1.7	0.09	0.19	0.09	55.4

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

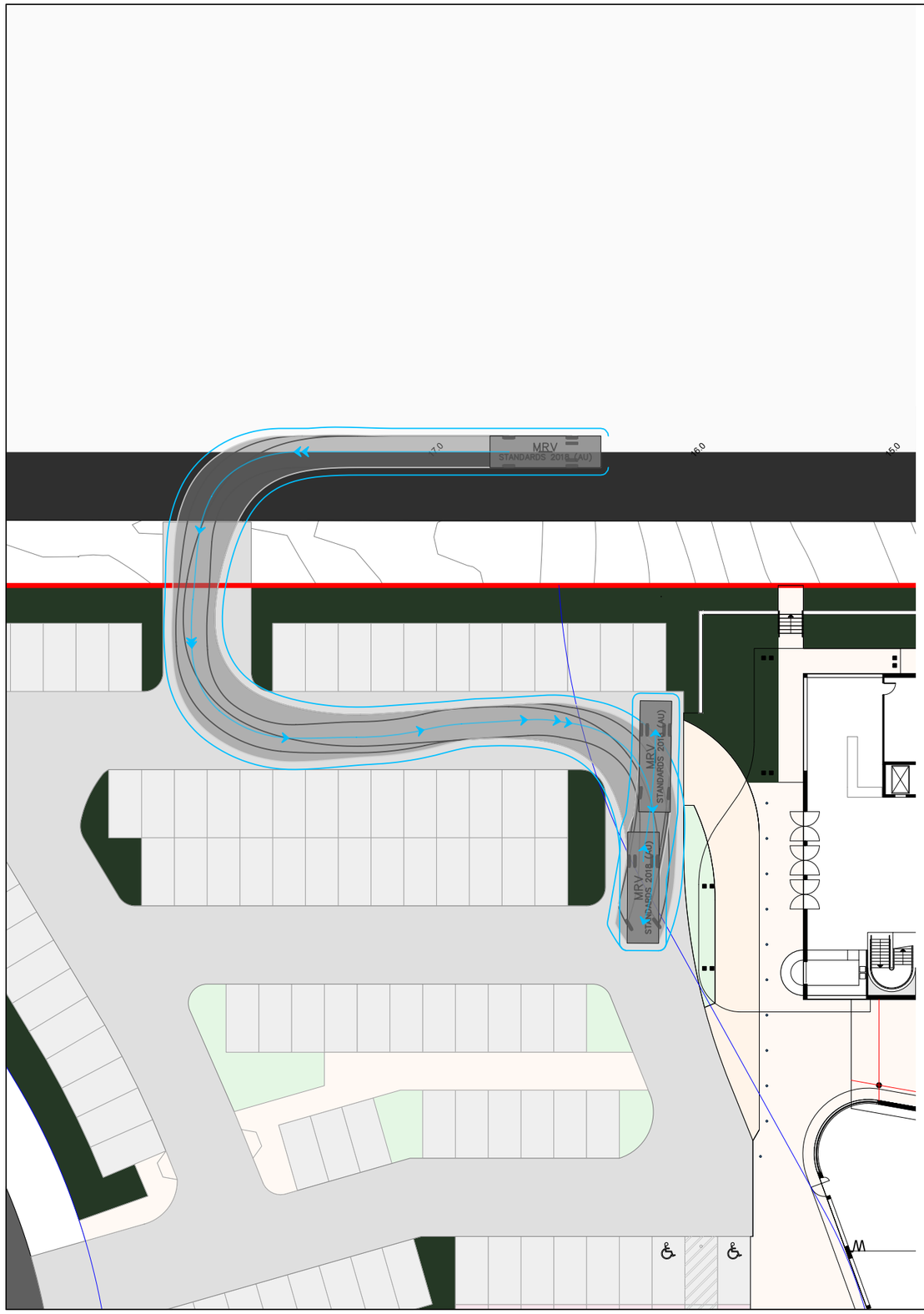
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

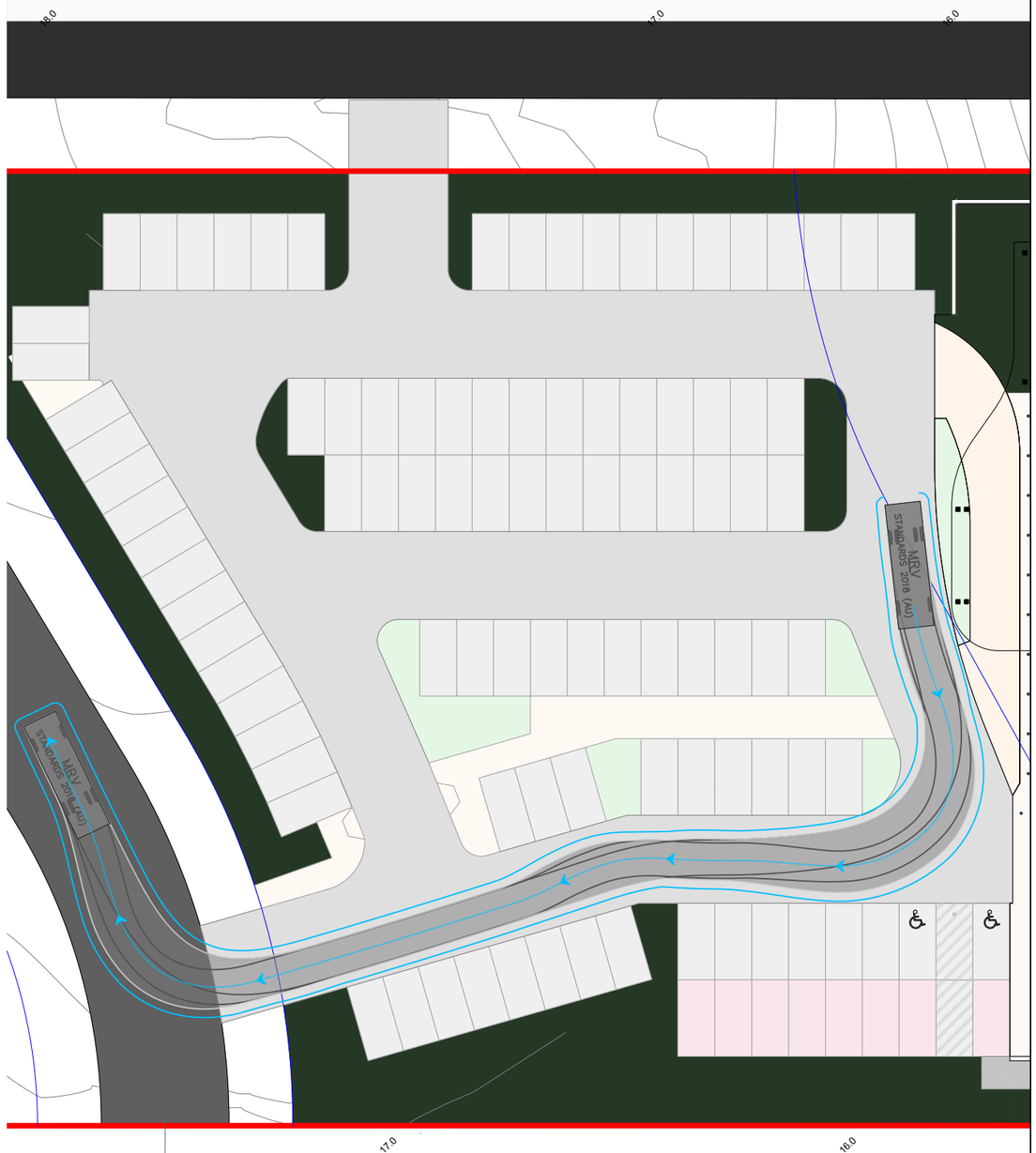
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

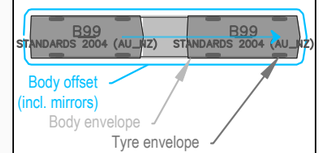
APPENDIX B

SWEPT PATH



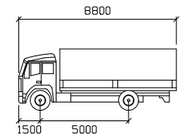


Legend



This swept path assessment is based on:

- 600mm body offset
- Vehicle speed of 5-10km/h
- A MRV



MRV

	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

Not for construction

V	Description	Date
1.0	PRELIMINARY DRAFT	06/09/2024

SCT Consulting

Prepared for: POINT COMMUNITY CHURCH

Quality information	
Date	09/24
Prepared	L.W
Reviewed	S.C
Authorised	S.C

Scale @ A3

0 3 6

Scale 1:40

Project: The Point Community Church

Title: Swept path assessment

Project Number: SCT_00614_CAD_Swept path

Sheet number: 01

A3

S:\Projects\SCT_00614_The Point Community Church DA\4. Tech Work\5. Engineering\SCT_00614_The Point Community Church DA_v0.2

XREF DATE | FILE NAME | PROVIDER

Thoughtful Transport Solutions

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