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Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

14 September 2026

Reference: 260768.01FA

Clare Loewenthal
by email: clare.loewenthal@gmail.com
Attention: Clare Loewenthal

REVIEW OF TRAFFIC AND PARKING IMPACTS OF THE PROPOSED MIXED-USE DEVELOPMENT AT 1-19 MACKENZIE STREET & 211 BLUES POINT ROAD, LAVENDER BAY

Dear Clare,

Reference is made to your request to provide a review of the traffic and parking impacts of the proposed Residential Flat Building at 1-19 Mackenzie Street & 211 Blues Point Road, Lavender Bay under application SSD-88702457. This letter provides a peer review of the EIS documentation relating to traffic and parking.

1 Introduction

The scope of this study includes:

- Outline of the proposed development;
- Review of the existing site context and conditions, including the existing transport network;
- Peer review the EIS documentation submitted by the proposal relevant to traffic and parking.

1.1 Description and Scale of Development

The subject development has the following characteristics relevant to traffic and parking:

- Lot 1:
 - 20-Storey residential flat building comprising of **107** dwellings, including the provision of 18% affordable housing GFA in perpetuity;
 - 134.3m² retail gross floor area (GFA);
 - Five (**5**) basement parking levels with vehicular access via a proposed two-way driveway from Mackenzie Street, accommodating a total of **119** car parking spaces.
- Lot 2:
 - 7-Storey co-living building comprising of **58** rooms;
 - Upgrade to existing Church forecourt;
 - Basement parking area with vehicular access via a proposed two-way driveway from Mackenzie Street, accommodating a total of **34** car spaces, comprising **12** co-living spaces and **22** parish parking spaces.

1.2 Site Description

The subject site includes eight (8) lots legally identified in **Table 1**.

TABLE 1: LEGAL DESCRIPTIONS AND SITE AREAS

Address	Legal Description	Approximate Site Area (sqm)
1-13 Mackenzie Street, Lavender Bay	1/DP600567	186
	20/DP61273	186
	21/DP974999	186
	22/DP974999	186
	23/DP974999	186
	24/DP974999	186
17-19 Mackenzie Street, Lavender Bay	2/DP86304	4,407
211 Blues Point Road	SP51520	469

The subject site is currently zoned *SP2 – Infrastructure* under the *North Sydney Council Local Environmental Plan 2013* and occupied by the St Francis Xavier Catholic Church, a 3-storey residential building, a retirement living building and an at-grade carpark. The site has a single frontage to Mackenzie Street to the south. The site is generally surrounded by medium-high density residential and mixed-use commercial developments, with North Sydney Train Station to the north of the site and Saint Peters Park to the west of the site.

1.3 Site Context

The location of the site is shown on an aerial photo and a street map in **Figure 1** and **Figure 2** respectively.

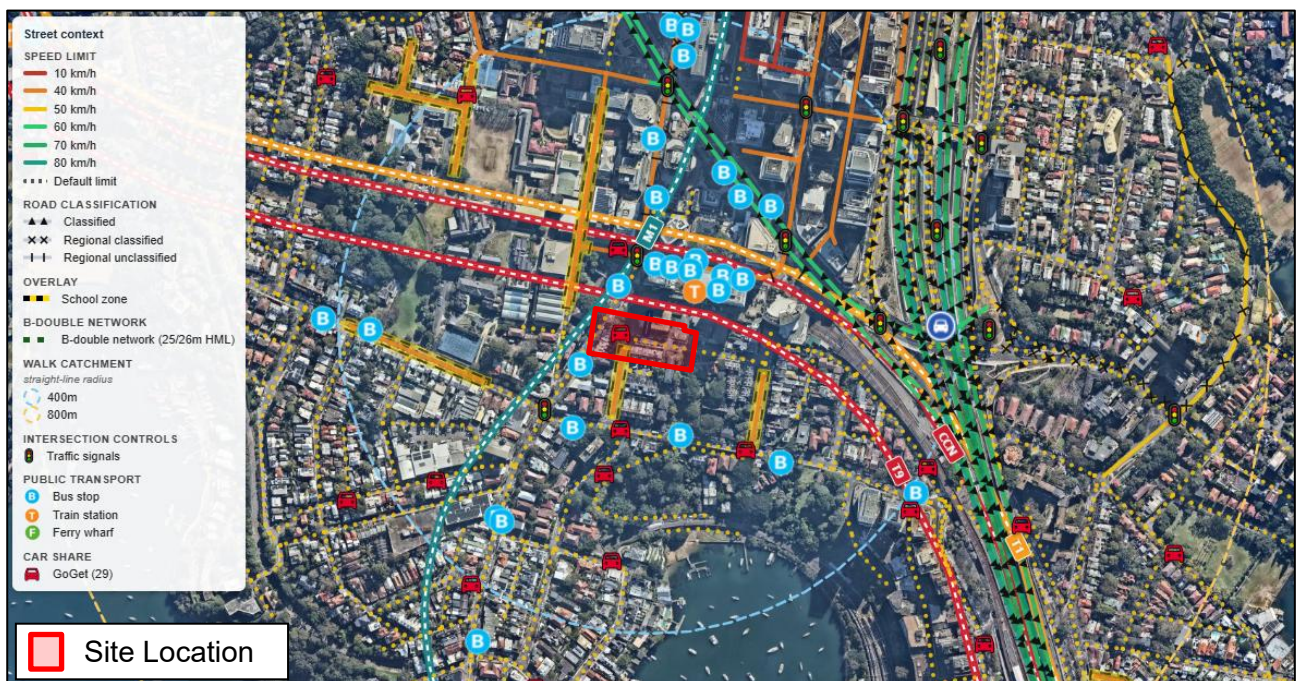


FIGURE 1: SITE CONTEXT - AERIAL PHOTO

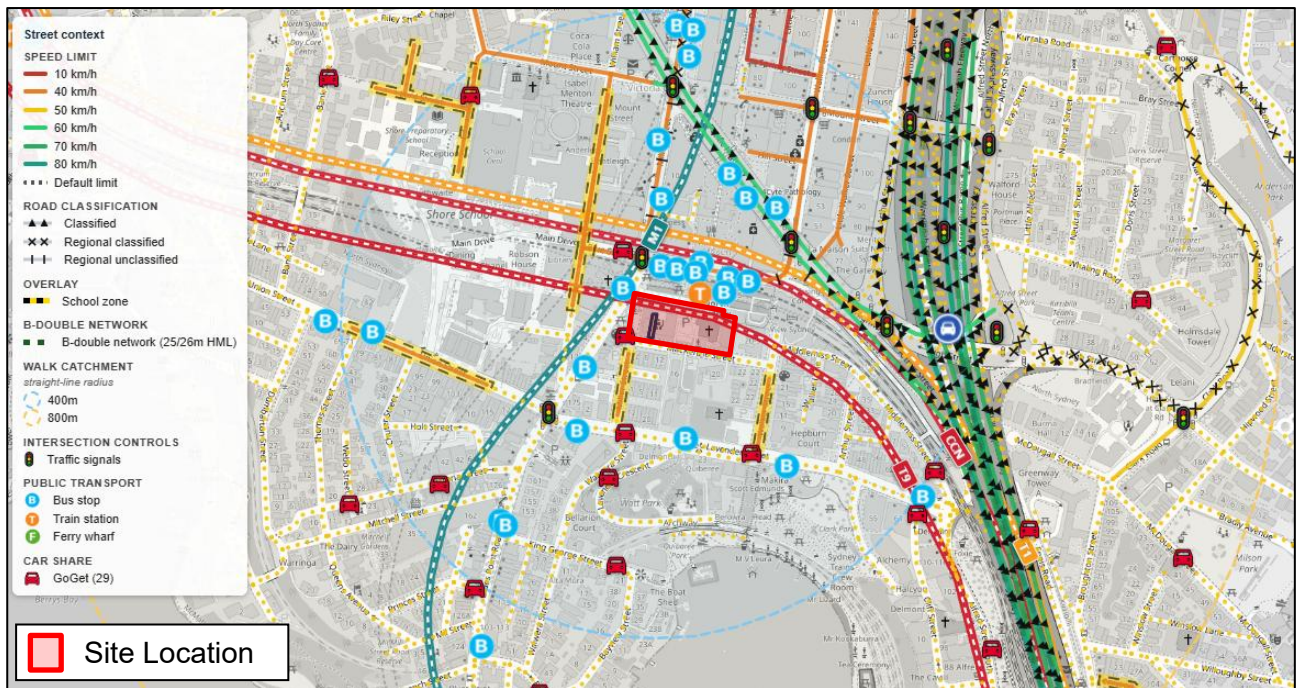


FIGURE 2: SITE CONTEXT - STREET MAP

2 EXISTING CONDITIONS

The following sections review the existing transport network that is likely to be impacted by the proposed development. This includes public transport, bicycle, pedestrian road and freight networks.

2.1 Road Hierarchy

The road network servicing the site has characteristics as described in the following sub-sections.

2.1.1 Mackenzie Street

- Unclassified Local Road;
- The design of the road most closely relates to an urban residential way under the TfNSW Movement and Place Framework;
- Approximately 9.5m wide carriageway facilitating two-way traffic flow and kerbside parking on both sides of the road;
- Default 50km/h speed limit;
- Generally, time restricted 1-hour parking from 8:30AM to 6:00PM from Monday to Friday on both sides of the road;
- Footpaths provided along both sides of the road.

2.1.2 Miller Street

- Unclassified Local Road;
- The design of the road most closely relates to an urban residential way under the TfNSW Movement and Place Framework;
- Approximately 12m wide carriageway facilitating one (1) traffic flow lane in each direction and kerbside parking on both sides of the road;
- Default 50km/h speed limit;
- 40km/h speed limit applies during school zones;
- Generally, time restricted 1-hour parking from 8:30AM to 6:00PM from Monday to Friday on both sides of the road;
- Footpaths provided along both sides of the road.

2.1.3 Walker Street

- Unclassified Local Road;
- The design of the road most closely relates to an urban residential way under the TfNSW Movement and Place Framework;
- Approximately 12.5m wide carriageway facilitating one (1) traffic flow lane in each direction and kerbside parking on both sides of the road;
- Default 50km/h speed limit;
- 40km/h speed limit applies during school zones;
- Generally, time restricted 1-hour parking from 8:30AM to 6:00PM from Monday to Friday on both sides of the road;

- Time-restricted 5-minute parking during school zone hours from Monday to Friday on the eastern side of the road at the school frontage, otherwise time-restricted 15-minute parking from 9:30AM to 2:00PM;
- Footpaths provided along both sides of the road.

2.1.4 Lavender Street

- Unclassified Collector Road;
- The design of the road most closely relates to an urban connector street under the TfNSW Movement and Place Framework;
- Approximately 12m wide carriageway facilitating one (1) traffic flow lane in each direction and a kerbside parking lane on both sides of the road;
- Signposted 40km/h speed limit;
- Time restricted 2-hour meter parking from 8:30AM to Midnight along both sides of the road;
- A footpath is provided on both sides of the road.

2.2 Existing Traffic Management

- Priority controlled intersection of Lavender Street / Miller Street;
- Priority controlled intersection of Walker Street / MacKenzie Street;
- “Give Way” linemarked controlled intersection of Lavender Street / Walker Street.

2.3 Crash Data

The TfNSW website provides crash data statistics for a five (5) year period between 2020 and 2024. The crashes recorded within the vicinity of the site have been summarised in **Table 2** with a diagram of the locations shown in **Figure 3**.

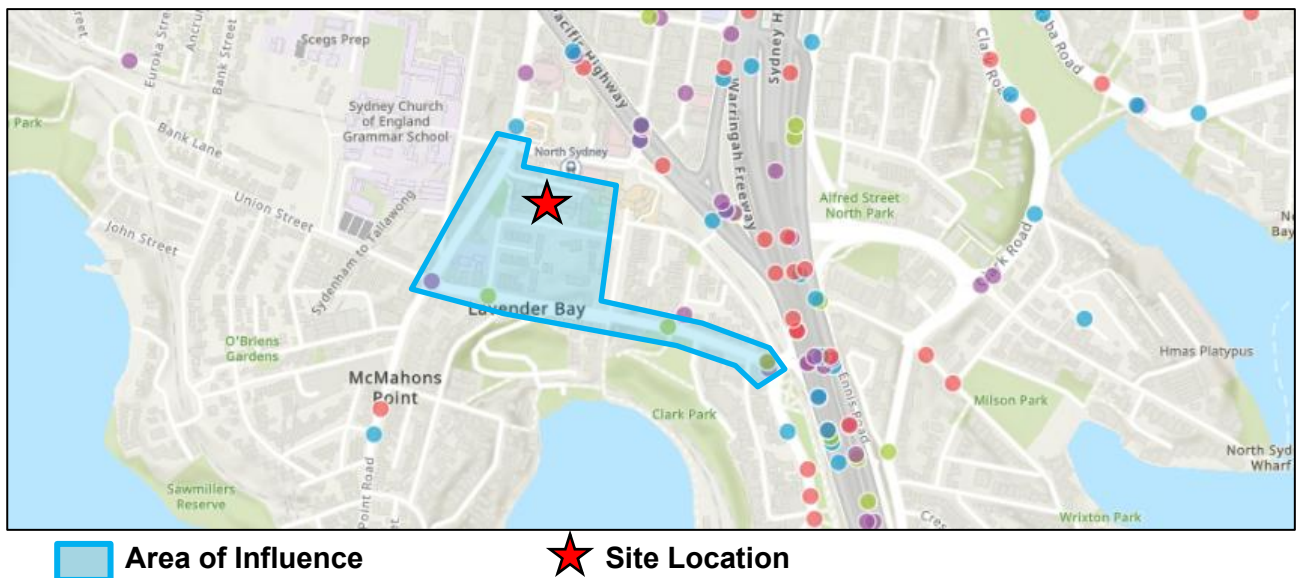


FIGURE 3: TFNSW CRASH STATISTICS

A summary of the crashes within the immediate vicinity of the site has been depicted in **Table 2**.

TABLE 2: CRASH DATA 2020 – 2024

Reporting year	Crash ID	Degree of crash	RUM - description	Type of location	Natural lighting	Street of Crash	Number killed	Number injured	Direction of Travel ⁽¹⁾
2020	1233920	Serious Injury	Fell in/from vehicle	T-junction	Daylight	LAVENDER	0	1	North
2020	1250253	Minor/Other Injury	U turn	T-junction	Daylight	BLUES POINT	0	1	South
2021	1258850	Serious Injury	Lane sideswipe	2-way undivided	Darkness	LAVENDER	0	1	West
2021	1280253	Serious Injury	Off left/right bend	Roundabout	Daylight	ALFRED	0	1	East
2023	1350879	Minor/Other Injury	Cross traffic	Roundabout	Dusk	ALFRED	0	1	North
2024	1342658	Non-casualty (towaway)	Out of cont on bend	Roundabout	Daylight	ALFRED	0	0	North

Notes:

- (1) In this case, the direction of travel of the 'key traffic unit' has been reported.

As shown, during the five (5) year period between 2020 and 2024, a total of six (6) crashes occurred within the vicinity of the site. Of these crashes, three (3) were classified as serious injury, two (2) were classified as minor/other injury and the remaining one (1) crash classified as non-casualty (towaway).

2.4 Public Transport

The public transport facilities and services available for persons travelling to or from the site have been reviewed, with a summary of each transport mode available below. The site is indicated to have Very High access to public transport based on the 2024 Public Transport Accessibility Levels (PTAL) published by Transport for NSW.

2.4.1 Rail

North Sydney Train Station is located 220m walking distance to the north of the subject site and services the following train lines:

- T1 – Berowra to City via Gordon;
- T9 – North Shore to Hornsby via City;
- CCN – Central to Newcastle via Strathfield or Gordon.

A train service is provided every 5 – 15 minutes in commuter peak periods and are provided by Sydney Trains.

2.4.2 Bus

The subject site has access to the existing bus stops located at North Sydney Station, Blue Street, Stand A (ID: 206058), Stand B (ID: 206012), Stand C (ID: 206092), Stand D (ID: 206014), Stand E (ID: 206084) and Stand F (ID: 206015). The bus stops service the following existing bus routes as summarised in **Table 3**.

TABLE 3: BUS SERVICES

Stop (Walking Distance)	Route Number	Route Name	Provider
North Sydney Station, Blue St, Stand A (ID 206011) (113m)	115	Chatswood via North Sydney Station	Busways North West
	261	North Sydney to Lane Cove	
	263	Crows Nest to City Bridge St via Cremorne	Keolis Downer Northern Beaches
North Sydney Station, Blue St, Stand B (ID 206012) (135m)	119	North Sydney to Gore Hill	Busways North West
	252	North Sydney to Gladesville	
	286	Milsons Point to Denistone East	
	287	Milsons Point to Ryde Depot	
	290	City Sussex St to Epping	
	622	Milsons Point to Cherrybrook	CDC NSW R4
North Sydney Station, Blue St, Stand C (ID 206092) (159m)	202	North Sydney to Northbridge	Busways North West
	203	North Sydney to Castlecrag	
	207	City Gresham St to East Lindfield	
	208	City Gresham St to East Lindfield	
	209	Milsons Point to East Lindfield	
North Sydney Station, Blue St, Stand D (ID 206014) (202m)	150X	Milsons Point to Manly	Keolis Downer Northern Beaches
	154X	Milsons Point to Dee Why	
	229	North Sydney to Beauty Point	
	230	Milsons Point to Mosman Bay Wharf	
	568n	Fitzroy St, Milsons Point to Taronga Park Zoo	
	569n	Fitzroy St, Milsons Point to Balmoral	
	589n	Milsons Point to Spit Jn	
	617n	Broughton St, Milsons Pt to Manly Wharf	
	707n	Milsons Point to North Balgowlah	
	708n	Fitzroy St, Milsons Pt to Musgrave Street Wharf	
	710n	Broughton St, Milsons Pt to Dee Why	
	711n	Broughton St, Milsons Pt to Warringah Mall	
	760n	Broughton St, Milsons Pt to Bantry Bay	
	761n	Broughton St, Milsons Pt to Manly Wharf	
	763n	Milsons Pt - Manly - N Curl Curl	
	764n	Milsons Pt to Beatrice & Ernest Sts	
	765n	Milsons Point to Manly Wharf	
	769n	Milsons Pt to Avalon	
North Sydney Station, Blue St, Stand F (ID 206015) (165m)	260	North Sydney Station, Blue St to Terrey Hills	CDC NSW R14
	265	North Sydney Station, Stand F to Crows Nest	Busways North West
	269	North Sydney via Milsons Point	
North Sydney Station, Blue St, Stand E (ID 206084) (227m)	119	North Sydney to Gore Hill	

2.4.3 Metro

Victoria Cross Metro Station is located 850m walking distance to the north of the subject site and services the M1 – Tallowong to Sydenham line. A metro service is provided every 4 minutes in commuter peak periods and are provided by Sydney Metro.

2.4.4 Summary of Public Transport

The location of the site subject to the surrounding public transport network is shown in **Figure 4**. The subject site is well serviced by public transport modes.

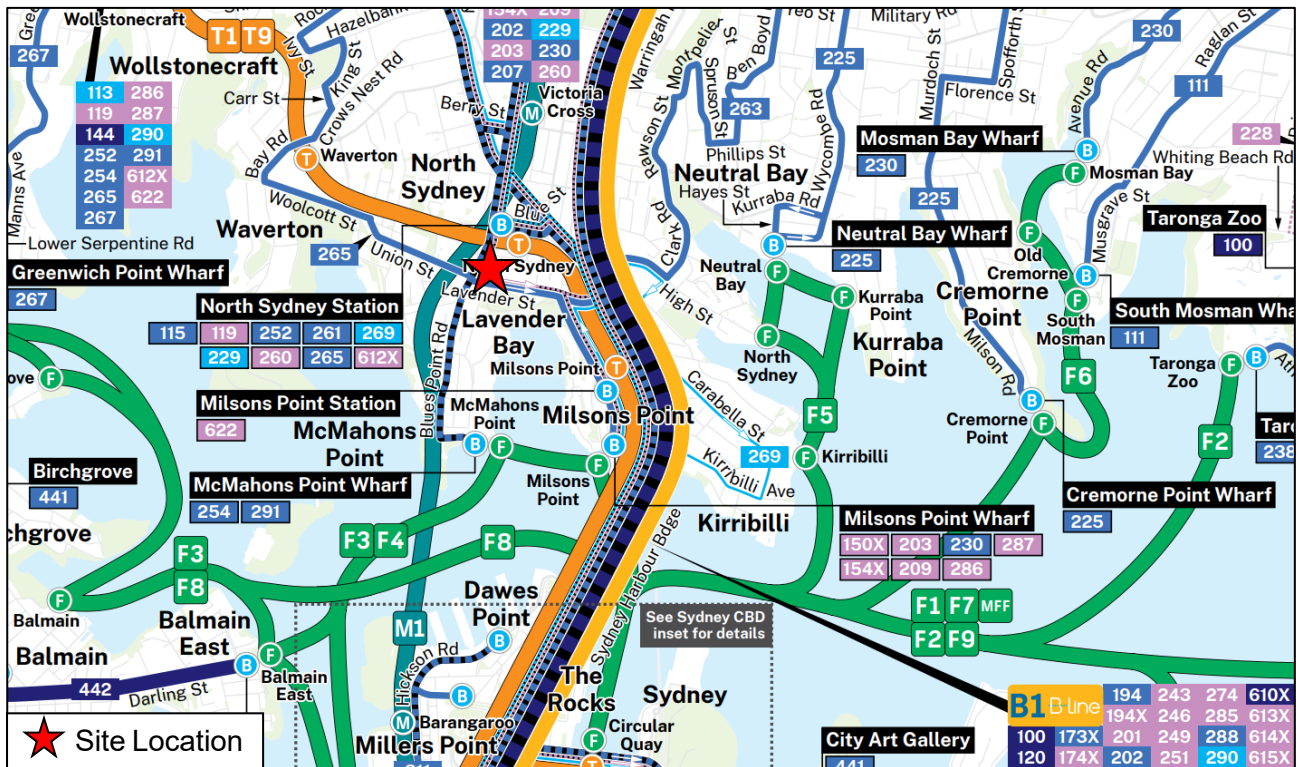


FIGURE 4: PUBLIC TRANSPORT NETWORK MAP

2.5 Day to Day Conditions

Local residents have provided detailed feedback on the application and the traffic and parking conditions in the surrounds of the site. There is inevitably a substantial gap between the information that can be gathered by a consultant, who may visit the site once or twice and has data collected over the course of a similar period, and a local that experiences the area every day. The feedback provided includes:

- Significant traffic activity is experienced on Miller Street associated with the nearby primary school, particularly during school drop-off and pick-up periods. Residents reported frequent instances of vehicles double parking during these periods.
- Residents raised concerns regarding the existing width of Mackenzie Street, noting that emergency vehicles are reportedly unable to pass one another simultaneously.
- Residents reported that traffic congestion on Lavender Street can result in Miller Street and Mackenzie Street being used as alternative routes to Middlemiss Street, contributing to increased traffic volumes on these streets during peak periods.
- On Sunday mornings, parking demand associated with the nearby church reportedly exceeds the available off-street parking supply, resulting in vehicles parking on surrounding streets and, on occasion, private property.
- Residents reported frequent instances of vehicles parking within 'No Parking' zones, which they consider contributing to reduced sight distances and increased blind spots for approaching vehicles and pedestrians.
- Residents reported that on-street parking is generally full after 6:00pm. It was noted that the existing one-hour parking restrictions are not in-force after 6:00pm, resulting in parking spaces being used more broadly rather than primarily by local residents.
- Residents identified the bend at Miller Street and Mackenzie Street as a location with existing sight-line concerns. They reported that vehicles frequently cut across the corner, increasing safety risks.
- Residents raised concerns regarding the existing bicycle path at the Miller Street/Mackenzie Street bend. The path provides a connection towards the Middlemiss Street bicycle lane, and residents identified potential conflicts between vehicles, cyclists and pedestrians in this area.
- Residents advised that Wilona Avenue is a privately owned road and expressed concern that Council and Police are unable to monitor or manage parking and traffic activity along the road. Residents reported that the road is frequently used for overflow parking on Sundays when parking associated with the nearby church reaches capacity.
- Residents noted that parking within the immediate vicinity of the site is currently free of charge, whereas parking in North Sydney CBD is metered. It was suggested that since there are existing pedestrian links between Blue Street and Mackenzie Street, this difference in parking cost contributes to comparatively higher parking demand along Mackenzie Street and Miller Street.

This community feedback should be afforded appropriate consideration and in some cases, such as in *The Presbyterian Church (New South Wales) Property Trust v Woollahra Municipal Council [2014] NSWLEC 1218* heard by Justice Moore (then Senior Commissioner), is instrumental in the decision making of the consent authority.

3 PEER REVIEW OF EIS DOCUMENTATION

The following section provides a peer review of the EIS documentation submitted by the proposal relevant to traffic and parking, including the architectural plans, traffic impact assessment and construction traffic management plan. The key parking, traffic, access, design and construction issues relevant to the proposal are outlined below.

3.1 Parking Issues

3.1.1 Parking Surveys

The *Traffic Transport Impact Assessment (TTIA)* determined the existing on-street parking demand within the vicinity of the site utilising parking surveys. However, the chosen survey periods were found to misalign with the existing peak parking conditions. The dates and time periods of the parking survey were as follows:

- Tuesday 23 September 2025 (6:00am to 6:00pm);
- Saturday 27 September 2025 (6:00am to 6:00pm).

The weekday survey day was undertaken on the second last day of the Montessori Primary School term, which typically observes lower student attendance and is therefore likely to have reduced the parking demand relative to a typical school day.

Further, the weekend parking survey was undertaken on a Saturday, rather than on a Sunday when the existing Catholic Church operates its weekend Mass services. In particular, the principal Sunday Mass is held at 10:30am, which exhibits much greater vehicle and pedestrian volumes than the 5:30pm Saturday vigil mass, representing a key period of activity and parking demand associated with the Church. Given that the proposed development includes an expansion of the existing Church, the failure to undertake parking surveys during the Church's peak period of operation means that the existing parking demand has not been appropriately established.

This deficiency is further compounded by the absence of any on-site parking or patron surveys of the existing Church to quantify its actual parking demand. This is particularly significant given that the proposal seeks to reduce the number of on-site Church parking spaces. The information provided in the TTIA is insufficient for an assessment to be undertaken and does not demonstrate that the proposal can be accommodated without displacing parking demand onto the surrounding street network.

Nonetheless, a summary of the parking survey results provided within the TTIA are reproduced in **Figure 5** for reference.

➤ Tuesday 6:00am-6:00pm	Average 99 spaces occupied	77% Occupancy
➤ Tuesday 6:00am-6:00pm	Maximum 117 spaces occupied	91% Occupancy
➤ Saturday 6:00am-6:00pm	Average 116 spaces occupied	89% Occupancy
➤ Saturday 6:00am-6:00pm	Maximum 129 spaces occupied	99% Occupancy

FIGURE 5: TTIA PARKING SURVEY RESULTS SUMMARY

Reference is made to the TTIA, which stated the following with respect to the parking survey results.

The results of the parking surveys demonstrate there is spare capacity within the vicinity of the site.

However, reference is made to *AUSTROADS Guide to Traffic Management Part 11 – Section 3: Principles of Parking Management* which states the following with regard to on-street car parking thresholds:

3.2.2 Principle 2: Occupancy or Utilisation

... Generally, parking is considered ‘at capacity’ when available spaces are 85% occupied at times of peak demand (Shoup 2005).

As shown above, the TTIA incorrectly and dishonestly concludes that the results of the on-street parking survey indicate “spare capacity” despite the peak parking demand of 91% – 99%. Accordingly, the survey results demonstrate that the surrounding on-street parking network is operating at capacity during peak demand periods, with minimal spare capacity available to accommodate additional parking demand generated by the proposed development.

3.1.2 Removal of Parking spaces

Reference is made to the TTIA, which stated the following with respect to the removal of **32** car parking spaces associated with the existing Church.

7.4 Overall Car Parking Provision

The St Francis Xavier Catholic Church has been operating with 54 off-street parking spaces for at least 45 years, with parishioners having established travel behaviours and parking patterns associated with the site;

The proposal seeks to expand the church and parish building GFA by approximately 902m² and, as such, the removal of 42 (54 existing minus 12) existing church parking spaces may result in a compounding impact on surrounding on-street parking demand;

The church typically caters to an older demographic that may have a greater reliance on convenient and accessible off-street parking opportunities.

As shown, the above statements are inconsistent with the proposed reduction in on-site parking provision. The TTIA acknowledges that parishioners have established parking patterns associated with the existing provision of **54** off-street parking spaces, however, the proposal seeks to retain only **22** of these **54** spaces, representing a reduction of **32** parking spaces. It is therefore unclear how the established parking patterns of parishioners are intended to be accommodated following such a substantial reduction in on-site parking provision.

Further, the TTIA expressly acknowledges that the removal of **32** (incorrectly stated as 42 in the TTIA) parking spaces would have a compounding impact on surrounding on-street parking demand. This is particularly concerning given the TTIA's acknowledgement that the Church caters to an older demographic who may have a greater reliance on convenient and accessible off-street parking, while the proposal simultaneously removes a significant proportion of the very parking spaces upon which those parishioners currently rely. This displaced parking demand is of particular concern having regard to reported observations from local residents that the Church car park is already at capacity on Sunday mornings, as outlined in **Section 2.5**.

Accordingly, the proposed reduction in on-site parking is likely to exacerbate existing parking pressures and displace additional Church-related parking demand onto the surrounding on-street parking network, which, as established above, is already operating with minimal spare capacity during peak periods.

It is reiterated that the increase of 922m² GFA to the Church is likely to exacerbate parking demand which is unlikely to be accommodated on-site or within close walking distance on-street.

Additionally, the proposal seeks to remove four (4) on-street car parking spaces to accommodate the additional vehicular crossing from Mackenzie Street. Considering the already constricted parking environment of Mackenzie Street, the TTIA fails to assess the impact of the removal of car parking spaces on the surrounding on-street parking network. The application should assess how equivalent parking capacity will be provided or otherwise appropriately mitigated prior to determination.

3.1.3 Oversupply of Residential On-Site Parking

The proposed development provides a residential parking supply that exceeds the maximum requirements of the North Sydney DCP by **35** parking spaces. Based on a typical parking space footprint (including circulation areas), this represents approximately **1,200m²** of additional basement floor area and approximately **3,800m³** of excess excavation. The provision of this excess parking necessitates a corresponding increase in excavation that would not otherwise be required to satisfy the parking demand. The unnecessary increase in excavation results in greater construction impacts, including additional bulk earthworks, spoil generation and removal, construction traffic and associated environmental impacts. It is likely that the overprovision of residential car parking will result in an increased rate of traffic generation.

3.2 **Traffic Issues**

3.2.1 Traffic Surveys

The *Traffic Transport Impact Assessment (TTIA)* determined the existing traffic conditions within the vicinity of the site utilising traffic surveys. However, the reliability and representativeness of the traffic survey data cannot be verified due to deficiencies in the information provided within the TTIA, as outlined below:

- The TTIA does not identify the dates on which the traffic surveys were undertaken. Consequently, it cannot be established whether the surveys were conducted during representative peak periods or under typical traffic conditions. In particular, without confirmation of the survey dates, it cannot be determined whether the surveys were undertaken during or outside of school holiday periods, which is particularly relevant given the site's proximity to the Montessori Primary School and the potential influence of school-related traffic on the surrounding road network.
- The TTIA does not provide the underlying traffic survey data within the report annexures to substantiate the traffic volumes and results relied upon in its assessment. In the absence of the raw or detailed survey data, the reported traffic volumes cannot be independently verified, and there is insufficient information to assess whether the results accurately reflect existing traffic conditions.

As such, the application should clarify the traffic survey dates and provide detailed survey data to be verified, prior to determination.

Additionally, the TTIA is dated 15 July 2026, whereas, from 10 July 2026, the right-turn movement from the Pacific Highway northbound off-ramp to High Street eastbound was permanently closed. This change in the surrounding road network is likely to have resulted in a redistribution of traffic movements and associated flow-on effects within Lavender Bay and at the surrounding intersections. Given that the TTIA does not identify the dates on which the traffic surveys were undertaken and gives no regard to these changes in the road network, it is likely that the surveys pre-date the closure and therefore do not capture the current traffic conditions or the effects of the changed turning movement.

Accordingly, the traffic survey data relied upon by the TTIA is unlikely to provide a representative basis for assessing existing traffic conditions, and the relevant intersection surveys should be undertaken again following the implementation of the road network change to accurately capture the resulting traffic patterns and establish an appropriate existing-condition baseline for the assessment.

3.2.2 Place of Worship Traffic Generation

The TTIA argues that the increase of Church GFA by 922m² is not expected to generate any additional vehicular traffic. Reference is made to the TTIA, which argues the following with respect to the traffic generation associated with the Church expansion.

8.2.5 Church Expansion

The proposal seeks to remove 42 church car parking spaces, likely resulting in a shift to sustainable travel to and from the site.

This conclusion is not adequately substantiated, as the TTIA provides no evidence to demonstrate that the proposed reduction in on-site parking will result in a corresponding shift to sustainable modes of transport. Further, this assumption is inconsistent with the TTIA's earlier acknowledgement that parishioners have established travel patterns associated with the existing Church, as outlined in **Section 3.1.2**, and therefore cannot reasonably be relied upon without supporting survey data.

3.2.3 School Operations

The TTIA does not assess the impact of the proposal on the existing school pick-up and drop-off operations of Montessori Primary School that occurs on Miller Street. During school pick-up and drop-off operations, Miller Street experiences instances of double parking and intensified traffic conditions, as identified in **Section 2.5**. The future performance of Miller Street during school peak periods has not been assessed with respect to the increase in traffic volumes and removal of on-street parking spaces resulting from the proposal.

3.2.4 SIDRA Traffic Modelling

Reference is made to the *Guide to Transport Impact Assessment (GTIA 2024)* which states the following with respect to traffic modelling.

Appendix D – TIA report structure outline

Reporting of any transport modelling undertaken including methodology, calibration and results. A summary should be provided within the body of the report.

The TTIA does not provide any details of the calibration and validation of the SIDRA traffic modelling undertaken. As such, without evidence that the traffic models have been appropriately calibrated and validated, there is no basis to verify that the model accurately reflects the existing traffic conditions and hence reliably predicts the impacts of the proposed development.

This reduces confidence in the reported operational performance of the surrounding intersections and questions the validity of the traffic modelling. For instance, information has been provided to M^CLaren Traffic Engineering by local residents regarding the existing performance of the Lavender Street / Alfred Street Soth / Middlemiss Street intersection, including the presence of queue lengths extending to Miller Street. Additional traffic and parking demand generated from the development has the potential to worsen these existing conditions. However, these conditions have not been reflected in the traffic modelling due to the absence of evidence that validation and calibration exercises have been undertaken appropriately. As such, details of both calibration and validation of the traffic model are required to adequately determine the existing and proposed traffic conditions.

Furthermore, the intersection of Blues Point Road / Lavender Street / Union Street was not assessed within the TTIA. This intersection is critical in accommodating the traffic generated by the proposed development and as such should be assessed to determine the traffic impact on the surrounding road network.

It is relevant to note that the SIDRA assessment was undertaken in 2025. However, significant changes to the surrounding traffic environment have been made since 2025, including the opening of the Harbour Bridge Bike Path in January 2026 and changes to access arrangements associated with the Warringah Freeway upgrade in 2026. These traffic changes have altered the existing traffic conditions at these intersections and therefore should be reassessed as part of the application.

In addition, the TTIA concludes that the forecast traffic generation associated with the proposal is negligible and will not adversely impact the surrounding road network. However, this conclusion has not been supported by any quantitative assessment of the surrounding road network.

Reference is made to the *Austrroads Guide to Traffic management – Part 3: Integrated Transport Assessment for Development (AUSTROADS 2020)* which provides the following applicable to the proposed development:

5.2 The Need for Traffic Impact Assessment

The traffic attracted to a new land use development or a major expansion of an existing development, such as an industrial project or a major shopping centre, can have significant impacts on the performance of the current or future arterial road network. These need to be properly assessed and addressed so that a satisfactory level of road safety and transport efficiency is maintained.

Additionally, *AUSTROADS 2020* also the level of traffic impact assessment required for a development, as shown in **Figure 6**.

Land Use	Moderate impact	High impact
	Traffic impact statement required	Traffic impact assessment required
	10–100 vehicle trips in the peak hour	> 100 vehicle trips in the peak hour
Residential	10–100 dwellings	> 100 dwellings
Schools	10–100 students	> 100 students
Entertainment venues, restaurants	100–1 000 persons (seats) or 200–2 000 m ² gross floor area	> 1 000 persons (seats) or > 2 000 m ² gross floor area
Fast food restaurants	50–500 m ² gross floor area	> 500 m ² gross floor area
Food retail/shopping centres with significant food retail outlet	100–1 000 m ² gross floor area	> 1 000 m ² gross floor area
Non-food retail	250–2 500 m ² gross floor area	> 2 500 m ² gross floor area
Offices	500–5 000 m ² gross floor area	> 5 000 m ² gross floor area
Industrial	1 000–10 000 m ² gross floor area	> 10 000 m ² gross floor area

**FIGURE 6: LEVEL OF TRAFFIC ASSESSMENT REQUIRED BY LAND USE AND SIZE
(AUSTROADS TABLE 5.2 EXTRACT)**

As such, the development is expected to have a high impact on traffic and therefore a traffic impact assessment is required. However, no traffic modelling been completed to assess the operational performance of the surrounding road network under future conditions. In the absence of future intersection performance assessments, it is not possible to verify the assertion that the surrounding road network possesses sufficient spare capacity to accommodate the additional vehicle movements generated by the proposal.

As such, without a future assessment of these intersections, the consent authority cannot be satisfied that the proposed development will not have an adverse impact on the surrounding road network.

3.2.5 Cumulative Traffic Impact Assessment

In addition to the subject site, several other HDA Housing SSD proposals have been proposed within the immediate vicinity of the site. A summary of these developments is provided in **Table 4**.

TABLE 4: SURROUNDING STATE SIGNIFICANT DEVELOPMENTS

Address	Storeys	Residential Units	Commercial / Retail Area
64-66 Lavender Street and 3-7 Middlemiss Street, Lavender Bay	22-32	186	Unknown
68 Alfred Street South, Milsons Point	Unknown	114	340m ²
5 Blue Street, North Sydney	29	395	Unknown
15 Blue Street, North Sydney	30	200	1,200m ²
52 Alfred Street South, Milsons Point	27-30	127	1,993m ²

Reference is made to the *NSW Government Cumulative Impact Assessment Guidelines for State Significant Projects 2021* which provides the following applicable to the proposed development:

4. Assessing and evaluating cumulative impacts

During the preparation of the EIS, the proponent must undertake the cumulative impact assessment in accordance with the requirements in the SEARs.

This will involve:

- *assessing the scale and nature of the cumulative impacts, and undertaking standard assessment on each of the assessment matters or issues*
- *identifying and undertaking more detailed assessment of cumulative impacts on key matters (issue-specific CIA and combined CIA)*
- *developing strategies to minimise the project's contribution to any cumulative impacts*
- *evaluating the project as a whole, having regard to:*
 - *the findings of the standard assessment on each of the assessment matters or issues*
 - *the findings of the detailed cumulative impact assessment on each of the key matters (issue-specific CIA)*
 - *the combined effect of these cumulative impacts on key matters (combined CIA)*

The TTIA considers the traffic impacts of the proposed development in isolation and does not assess cumulative impacts arising from the above proposals, therefore does not meet the *NSW Cumulative Impact Assessment Guidelines* requirements. The developments outlined in **Table 3** have the potential to contribute to cumulative traffic and parking impacts within the local road network.

Without consideration of these developments, the consent authority is unable to fully understand the future operational performance of the surrounding road network or the extent to which the proposal may contribute to broader transport impacts within the area.

3.3 Access Issues

3.3.1 Western Driveway Location

The proposed location of the western driveway is of concern, as it is positioned immediately adjacent to the Mackenzie Street / Miller Street bend, an area identified in **Section 2.5** as presenting existing safety concerns arising from interactions between bicycles, pedestrians and vehicles. The proposed driveway will provide access to **119** car parking spaces and will also accommodate loading and servicing activities, resulting in additional vehicle movements in close proximity to the bend. The introduction of these additional vehicle movements has the potential to exacerbate existing conflicts and safety risks at a location that already experiences identified traffic and road user issues. Accordingly, further consideration of the suitability and safety of the proposed western driveway location is warranted.

3.3.2 Sight Line Assessment

The TTIA does not provide a sight distance assessment for vehicles exiting driveways onto Mackenzie Street, which is essential in assessing safety impacts of the development. This is required to ensure exiting vehicles have adequate visibility when entering the road network in order to reduce the likelihood of collisions.

In particular, the western driveway is located adjacent to the Mackenzie Street / Miller Street bend, which has the potential to restrict available sight distance between existing vehicles and approaching traffic. Without a detailed assessment demonstrating that the sight distance can be achieved in accordance with *AS2890.1:2004*, it cannot be concluded that the proposed western access driveway will operate safely.

3.3.3 Multiple Driveways

It is relevant to note that no justification has been provided within the TTIA regarding the need for three (3) driveways from Mackenzie Street. It is commonly best practice to limit the number of access driveways to reduce the number of points of conflict and maintain the amount of on-street parking. As such, adequate justification for both driveways should be provided, otherwise the number of driveways provided from Mackenzie Street should be reduced.

3.4 Design Issues

The architectural plans have been reviewed against the requirements of the AS2890 (Parking Facilities) suite, with the following subsections outlining identified non-compliances.

3.4.1 Ramp Gradients and Vertical Headroom

The proposal includes servicing by an SRV design vehicle, the design requirements for which are set out in *AS2890.2:2018* and include:

- Minimum vertical clearance of 3.5m;
- Maximum ramp gradient of 15.4%;
- Maximum ramp gradient rate of change of 8.3% in 4m of travel.

The eastern access from Mackenzie Street is designed to accommodate SRV Loading within Basement Level 1. However, the access ramp includes a maximum gradient of 20% which exceeds the design requirements. As a result, the concept design is not fit for purpose for access by an SRV and it is likely that on-street parking will be relied upon for deliveries or servicing activities by any vehicles larger than a B99 as defined by *AS2890.1:2004*. This operation will be detrimental to traffic and parking conditions on the surrounding roads.

Additionally, a long section of the ramp is not provided within the architectural plans. As a result, the headroom of the ramp remains unknown and therefore cannot be approved for use by an SRV.

3.4.2 Minimum Queueing Length at Car Park Entrance

An extract of AS2890.1:2004 – Table 3.3 is provided in **Figure 7**.

Capacity of car park (Note 1)	Peak hourly in-flow of traffic	
	Up to 75% of capacity (Note 2)	More than 75% of capacity (Note 3)
Not more than 100 cars	The greater of a minimum of 2 cars or 3% of capacity	The greater of a minimum of 2 cars or 4% of capacity
More than 100 cars	1st 100 cars: 3% of capacity 2nd 100 cars: 2% of capacity Additional cars: 1% of capacity A minimum queueing length of 3 cars/lane	1st 100 cars: 4% of capacity 2nd 100 cars: 2% of capacity Additional cars: 1.5% of capacity A minimum queueing length of 3 cars/lane

NOTES:

- 1 Equal to the total number of parking spaces served by the entrance (proportioned where several entrances service a common parking area).
- 2 Generally casual (short-staying) and mixed patronage.
- 3 Tidal traffic typical of car parking for a special event.

The number of cars calculated from Table 3.3 shall be rounded up to the next whole number and a length of 6.0 m per vehicle allowed for in each lane.

FIGURE 7: MINIMUM QUEUEING LENGTH AT CAR PARK WITH CONTROL POINTS AT ENTRANCES (AS2890.1 – TABLE 3.3 EXTRACT)

In accordance with the above requirements, a minimum length of 30m (5 cars) is required to be provided between the vehicular control point and the property boundary in order to allow a free influx of traffic which will not adversely affect traffic or pedestrian flows in the frontage road.

The proposed plans detail a length of 16m between the roller door and the property boundary, which will have an adverse impact on traffic flow and potential queueing along Mackenzie Street.

3.5 Construction Issues

3.5.1 Construction Staff Parking

The *Traffic Preliminary Construction Traffic and Pedestrian Management Plan (TCTMP)* does not address the provision of construction worker parking during the excavation and basement construction phases, when on-site parking is unlikely to be available. In the absence of adequate on-site worker parking, construction staff are likely to utilise on-street parking within the surrounding residential streets, particularly Mackenzie Street, thereby increasing parking demand and competing with residents, school staff and parents for a limited supply of on-street parking.

To minimise these impacts, the TCTMP should expressly prohibit construction worker parking on surrounding residential streets, identify the location of off-site parking facilities for construction workers, specify monitoring and enforcement measures to ensure compliance, and include a complaints management and corrective action process to address any parking-related issues that arise during construction.

3.5.2 Work Zones

The TCTMP outlines the requirement for a work zone on Mackenzie Street during construction, however, does not assess the impact of the work zone on on-street parking. Considering the already constrained parking environment along Mackenzie Street, the removal of multiple on-street car parking spaces to accommodate a work zone during construction will have detrimental impacts which need to be assessed as part of the application.

3.5.3 Truck Movements

The truck movement hours have not been addressed in the TCTMP. For instance, since the proposed haulage routes will travel pass the Montessori Primary School, truck movements should be restricted during school pick-up and drop-off peaks in order to reduce conflicts during a congested time period. This should be addressed in the TCTMP as part of the application.

Additionally, the TCTCMP does not address the impacts of construction traffic on the existing bike path at the western end of Mackenzie Street. Traffic control will be required at this location, with details to be provided in the TCTMP as part of the application.

3.6 **Other Transport Related Issues**

3.6.1 Pedestrian Trip Assessment

The proposed development is expected to generate a significant number of pedestrian movements associated with access to public transport services, retail facilities, community infrastructure and surrounding employment areas. Despite this, the TIA does not quantify expected pedestrian trip generation nor assess the impacts of additional pedestrian movements on the surrounding pedestrian network.

No assessment has been undertaken of footpath infrastructure, pedestrian crossing facilities, pedestrian safety or potential conflict points between vehicles and pedestrians. Given the site's proximity to North Sydney Station, Victoria Cross Metro Station and surrounding bus services, pedestrian movements are likely to represent a significant component of overall travel demand generated by the development.

The omission of a pedestrian impact assessment represents a significant gap in the evaluation of the proposal's transport impacts.

3.6.2 Public Transport Capacity

The TIA relies heavily on the site's proximity to public transport infrastructure to justify relatively low private vehicle trip generation rates. However, no assessment has been undertaken to determine whether the surrounding public transport network has sufficient capacity to accommodate the additional demand generated by the development.

The report does not provide any analysis of existing passenger loads on nearby bus routes, train services or metro services, nor does it assess the extent to which additional patronage generated by the proposal may impact public transport operations.

While the availability of public transport services is acknowledged, accessibility alone does not demonstrate available capacity. The transport impact assessment should consider both the availability and capacity of the public transport network, particularly for a development of this scale that is expected to generate a substantial number of public transport trips.

4 CONCLUSIONS

A review of the EIS documentation submitted by the proposal relevant to traffic and parking has the following conclusions.

The key parking issues are as follows:

- The dates and time periods of the parking surveys were found to misalign with the existing peak parking periods caused by the on-site place of worship and nearby school.
- The parking survey results demonstrate that the surrounding on-street parking network is operating at capacity during peak demand periods, despite incorrect conclusions made within the TTIA.
- The assessment of the proposal does not give adequate regard to the existing and future parking demands of the Church or the impacts associated with the significant increase in Church GFA coupled with a significant reduction in car parking for church patrons.

The key traffic issues are as follows:

- It cannot be established whether the traffic surveys conducted within the TTIA were conducted during representative peak periods or under typical traffic conditions, nor can the reported traffic volumes cannot be independently verified without the presence of raw data.
- The increase of Church GFA is expected to generate additional vehicular traffic, despite invalid conclusions made within the TTIA.
- The TTIA does not assess the impact of the proposal on the existing school pick-up and drop-off operations of Montessori Primary School that occur on Miller Street.
- The TTIA does not provide any details of the calibration and validation of the SIDRA traffic modelling undertaken, reducing confidence in the reported operational performance of the surrounding intersections.
- A key intersection was not assessed within the TTIA which is critical in accommodating the traffic generated by the proposed development and as such should be assessed to determine the traffic impact on the surrounding road network.
- Traffic modelling has not been completed to assess the operational performance of the surrounding road network under future conditions, therefore it is not possible to verify the assertion that the surrounding road network possesses sufficient spare capacity to accommodate the additional vehicle movements generated by the proposal.
- The TTIA considers the traffic impacts of the proposed development in isolation and does not assess cumulative impacts arising from the surrounding SSD proposals, failing to meet the NSW Cumulative Impact Assessment Guidelines requirements.

The key access issues are as follows:

- The western driveway located on Mackenzie Street is located adjacent to a horizontal curve in the road, which has the potential to restrict available sight distance between exiting vehicles and approaching traffic. A detailed sight line assessment is therefore required to demonstrate a safe and compliant outcome.

The key design issues are as follows:

- The concept design is not fit for purpose for access by an SRV and it is likely that on-street parking will be relied upon for deliveries or servicing activities which will be detrimental to traffic and parking conditions on the surrounding roads.

- A minimum length of 30m (5 cars) is required to be provided between the vehicular control point and the property boundary in order to allow a free influx of traffic which will not adversely affect traffic or pedestrian flows in the frontage road.

The key construction issues are as follows:

- In the absence of adequate on-site worker parking, construction staff are likely to utilise on-street parking within the surrounding residential streets, particularly Mackenzie Street, thereby increasing parking demand. This has not been addressed in the TCTMP.
- The impacts of the proposed work zone on Mackenzie Street will have adverse impacts on the parking environment of the area which have not been assessed in the TCTMP.
- The truck movement hours have not been addressed in the TCTMP, particularly regarding restrictions to truck movements during school peak pick-up and drop-off times.

The key other transport related issues are as follows:

- No assessment has been undertaken of footpath infrastructure, pedestrian crossing facilities, pedestrian safety or potential conflict points between vehicles and pedestrians.
- The TTIA does not provide any analysis of existing passenger loads on nearby bus routes, train services or metro services, nor does it assess the extent to which additional patronage generated by the proposal may impact public transport operations.

Please contact Isabella Currao or the undersigned on 9521 7199 should you require further information or assistance.

Yours faithfully,

McLaren Traffic Engineering



Tom Steal

Associate Traffic Engineer

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TfNSW Accredited Level 3 Road Safety Auditor