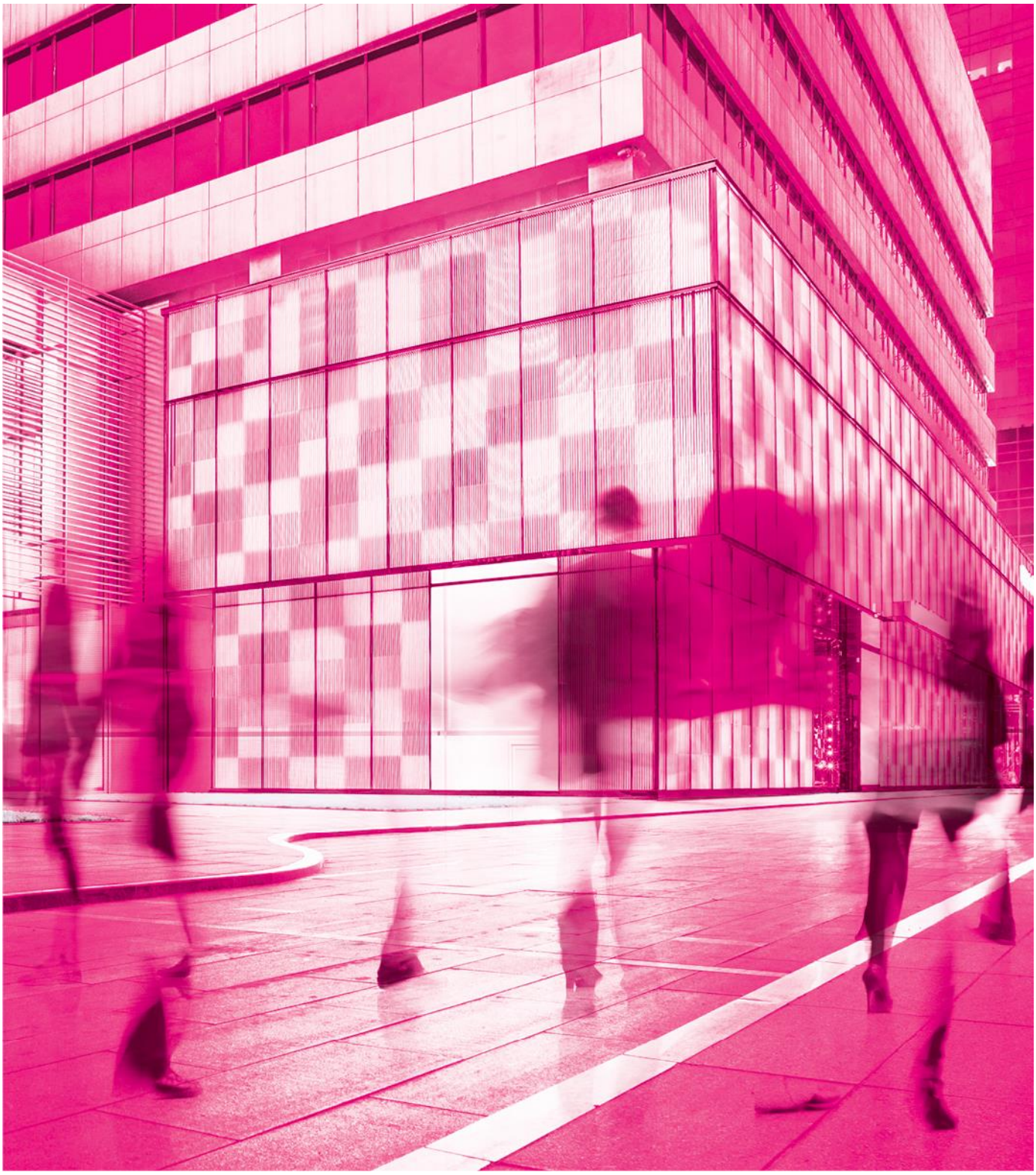

Traffic Impact Assessment;

52 Scott Street, Liverpool Civic Place - Amending Concept DA

Residential Use

20 December 2023

parking;
traffic;
civil design;
wayfinding;

ptc.

Document Control

52 Scott Street, Liverpool Civic Place - Amending Concept DA, Traffic Impact Assessment

Issue	Date	Issue Details	Author	Reviewed	For the attention of
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2	04/12/23	Draft	PS/PB	AM	Mireille Gasking
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Contents

1. Introduction

1.1 Project Summary

This Traffic Impact Assessment (TIA) has been submitted to Liverpool City Council (Council) in support of an Amending Development Application (DA) to modify the Approved Concept DA (DA-585/2019) relating to Liverpool Civic Place at 52 Scott Street in Liverpool (the site).

The Amending DA seeks to modify the approved Concept DA to allow residential land uses to be permitted within the Phase B envelope, and to slightly extend the Phase B envelope to allow for a residential development to be accommodated through a subsequent detailed Development Application.

No physical works are proposed as part of this Amending DA and the application only seeks changes to the Phase B envelope, with no changes to any of the other approved building envelopes in Liverpool Civic Place. The subject application does not seek any increase to the approved height of the Phase B envelope.

A reference design has also been submitted which illustrates one of the ways a residential development could be facilitated within the proposed modified Phase B envelope. However, approval is not sought for the reference design. The final design will be resolved in a subsequent detailed Development Application.

The full Liverpool Civic Place site, subject to the Amending DA is illustrated in Figure 1.

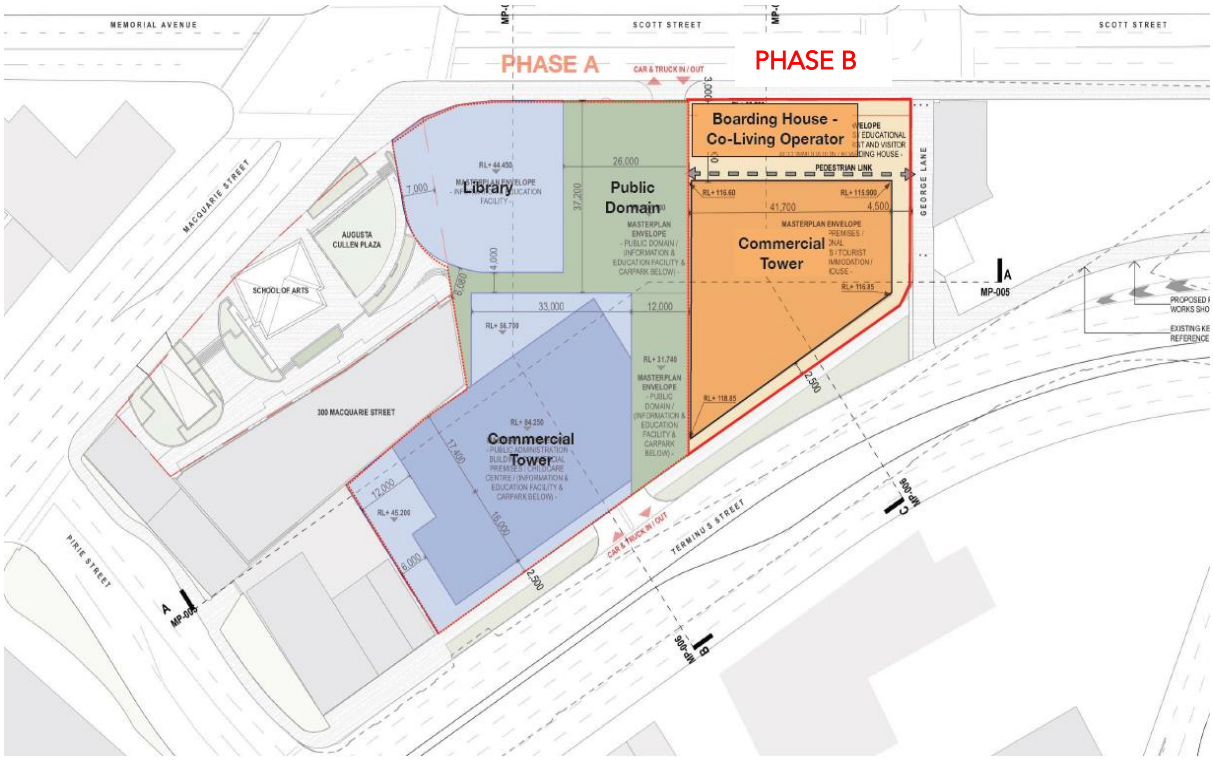

Figure 1 - Liverpool Civic Place Master Plan (Phase B Site Identified)

The reference design is based on the following inclusions:

- Construction and use of 26 levels for Residential Use,
- Lower Ground Floor residential lobby and Retail Tenancies (Cafe, Food and Beverage),
- Construction and use of up to four basement levels,
- Extension and augmentation of services and infrastructures as required.

This Amending Concept DA reflects the staged planning approval pathway for the Liverpool Civic Place redevelopment which has included the concept DA, an Early Works DA, a Detailed DA for Phase A, and a Detailed DA for Phase B.

1.1.1 Concept DA (DA-585/2019)

The planning approval pathway for the Liverpool Civic Place development commenced in 2019, with the submission of a Concept Proposal Phase A DA for the Liverpool Civic Place master plan. The Concept Proposal DA was approved by the Sydney Western City Planning Panel on 31 August 2020. The Concept Proposal DA consent sets out the future development concept of the site, including the approved land uses, building envelopes, the public domain extent and basements.

1.1.2 Early Works DA (DA-906/2019)

The Early Works DA was approved by the Sydney Western City Planning Panel on 29 June 2020. The development consent relates to demolition of all structures, select tree removal and bulk earthworks including shoring through the use of piles.

1.1.3 Phase A Detailed DA (DA-836/2020)

DA-836/2020 was approved on 5 July 2021 by the Sydney Western Sydney Planning Panel. This phase of the development was completed in October 2023, and included a mixed-use building containing commercial office floor space, public library, Council chambers, basement car park, and public plaza.

2. Site Context

2.1 Site Location

The site is located at 52 Scott Street in the southern side of the Liverpool CBD, as illustrated in Figure 2. The site is located approximately 300m southwest of Liverpool Railway Station and is also in the vicinity of a number of regionally significant land uses and features including Liverpool Hospital, Westfield Liverpool, Western Sydney University Liverpool Campus, the Georges River and Biggie Park public open space.

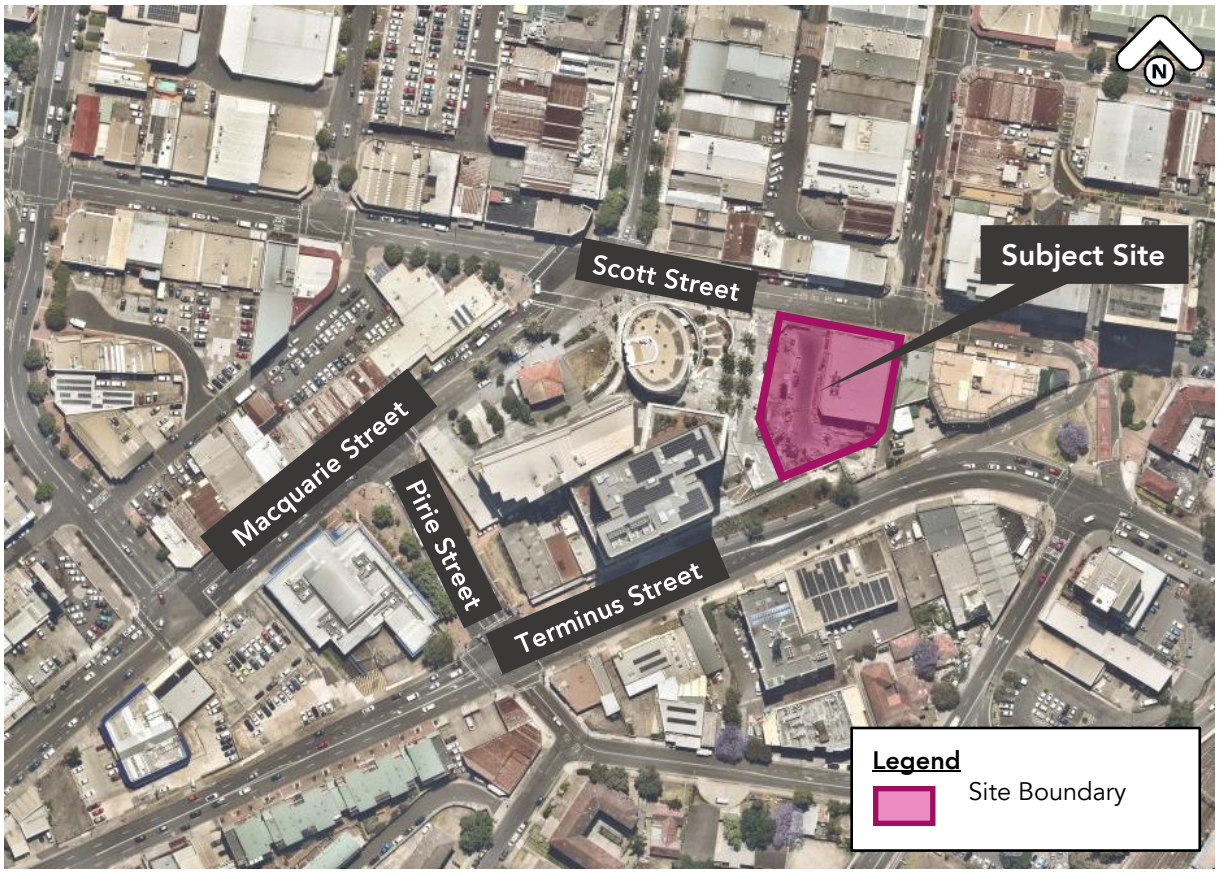

Figure 2 – Aerial view of the Subject Site (Source: Nearmap)

2.2 Site Description

The site is currently occupied by a two-storey commercial building with a large frontage to Scott Street, while the Phase A site (which shares access with the Phase B site) is occupied by the newly completed commercial and library buildings.

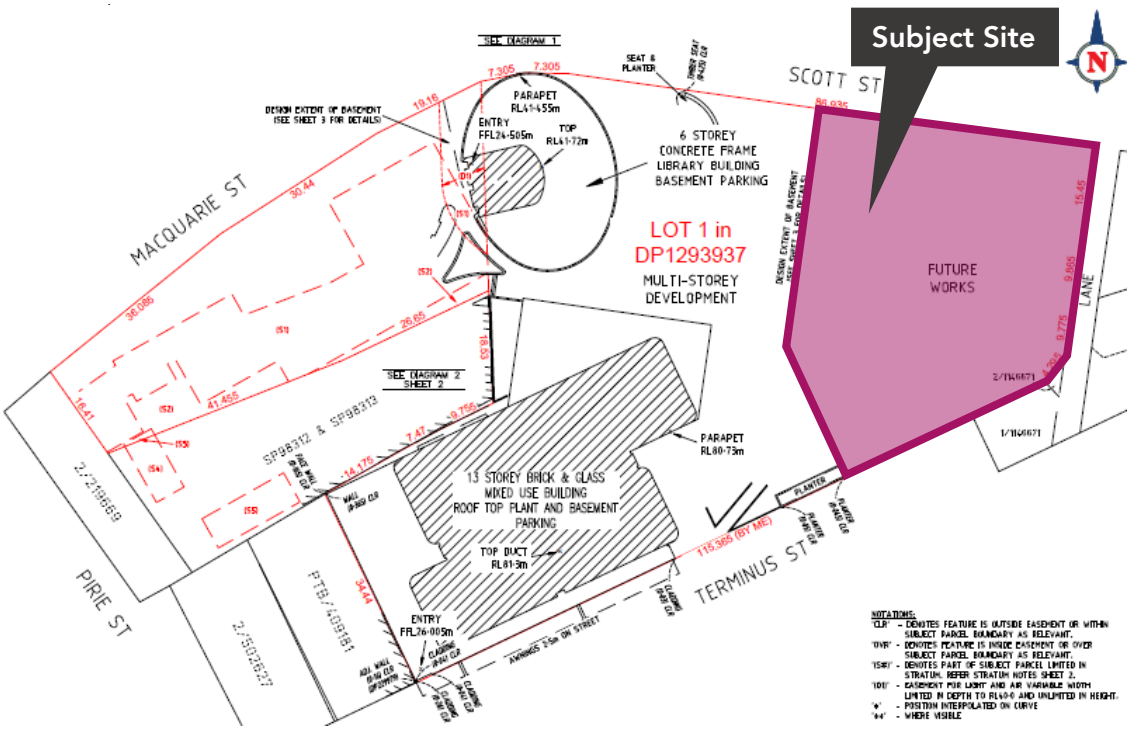

Figure 3 - Site and Lot Boundaries

2.3 Proposed Amendment

The amending DA is being submitted to enable residential uses within the development and no works are being sought as part of this application. However, a reference design is attached to the application, which includes an area of approximately 314m^2 for retail activity and 300+ apartments, comprising a mix of studio apartments, 1-bedroom, 2-bedroom and 3-bedroom apartments. The refence design also includes 4 levels of basement for car parking, which aligns with the basement size developed for the current approval.

3. Existing Transport Facilities

3.1 Road Hierarchy

The subject site is located within Liverpool City Centre and is primarily serviced by Terminus Street (State Road) and local roads managed by Liverpool City Council.

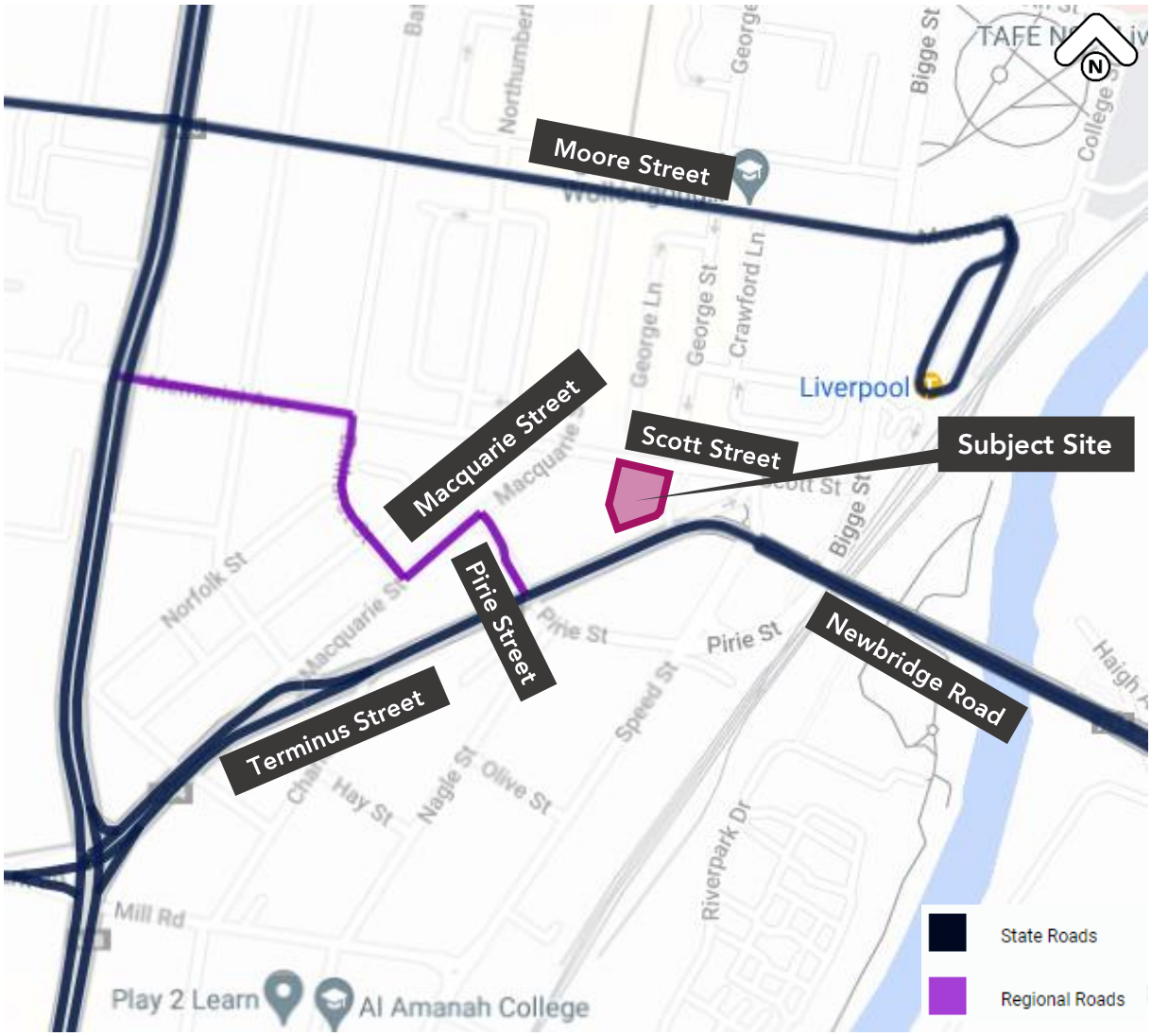

Figure 4 - Surrounding Road Network (Source: TfNSW)

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

State Roads - Freeways and Primary Arterials (TfNSW Managed)

Regional Roads - Secondary or sub arterials (Council Managed, partly funded by the State)

Local Roads - Collector and local access roads (Council Managed)

Table 1 - Existing Road Network - Terminus Street

Terminus Street	
Road Classification	State Road
Alignment	East-West
Number of Lanes	Generally, 2 lanes in each direction
Carriageway Type	Undivided
Carriageway Width	15m
Speed Limit	60 km/h
School Zone	No
Parking Controls	No Stopping & Clearway 6am-10am & 3pm-7pm (Mon-Fri) eastbound, No Parking & Clearway 6am-10am & 3pm-7pm (Mon-Fri) westbound
Forms Site Frontage	Yes

Figure 5 - Terminus Street (Eastbound towards Newbridge Road)

Table 2 - Existing Road Network - Pirie Street

Pirie Street	
Road Classification	Regional Road
Alignment	North-South
Number of Lanes	Generally, 2 lanes in each direction
Carriageway Type	Undivided
Carriageway Width	18m
Speed Limit	50 km/h
School Zone	No
Parking Controls	No Stopping both sides
Forms Site Frontage	No

Figure 6 - Pirie Street (Southbound towards Terminus Street)

Table 3 - Existing Road Network - Macquarie Street

Macquarie Street	
Road Classification	Local / Regional Road
Alignment	North-South
Number of Lanes	Generally, 2 lanes in each direction
Carriageway Type	Varies, divided / undivided
Carriageway Width	17m
Speed Limit	50 km/h
School Zone	No
Parking Controls	No Stopping & 1P parking northbound, No Stopping southbound
Forms Site Frontage	No

Figure 7 - Macquarie Street (Northbound towards Scott Street)

Table 4 - Existing Road Network - Scott Street

Scott Street	
Road Classification	Local Road
Alignment	East-West
Number of Lanes	Generally, 2 lanes westbound, 1 lane eastbound
Carriageway Type	Divided
Carriageway Width	12m
Speed Limit	50 km/h
School Zone	No
Parking Controls	1P Ticket 9am-6pm (Mon-Fri) & 1P 9am-12:30pm Sat eastbound & No Stopping westbound
Forms Site Frontage	Yes

Figure 8 - Scott Street (Westbound towards Macquarie Street)

3.2 Public Transport

The locality has been assessed in the context of available forms of public transport that may be utilised to access the proposed Liverpool Civic Place. When defining accessibility, the NSW Guidelines to Walking & Cycling (2004) suggests that a walking catchment of 400-800 metres is a comfortable walking distance to the public transport.

The existing pedestrian walking infrastructure in the locality includes sidewalks on both sides of most roads, with a walking distance of around 350 meters to reach the Liverpool train station. Additionally, there are nearby bus stops in close proximity to the proposed development.

The 400 and 800m catchments are shown in Figure 9.

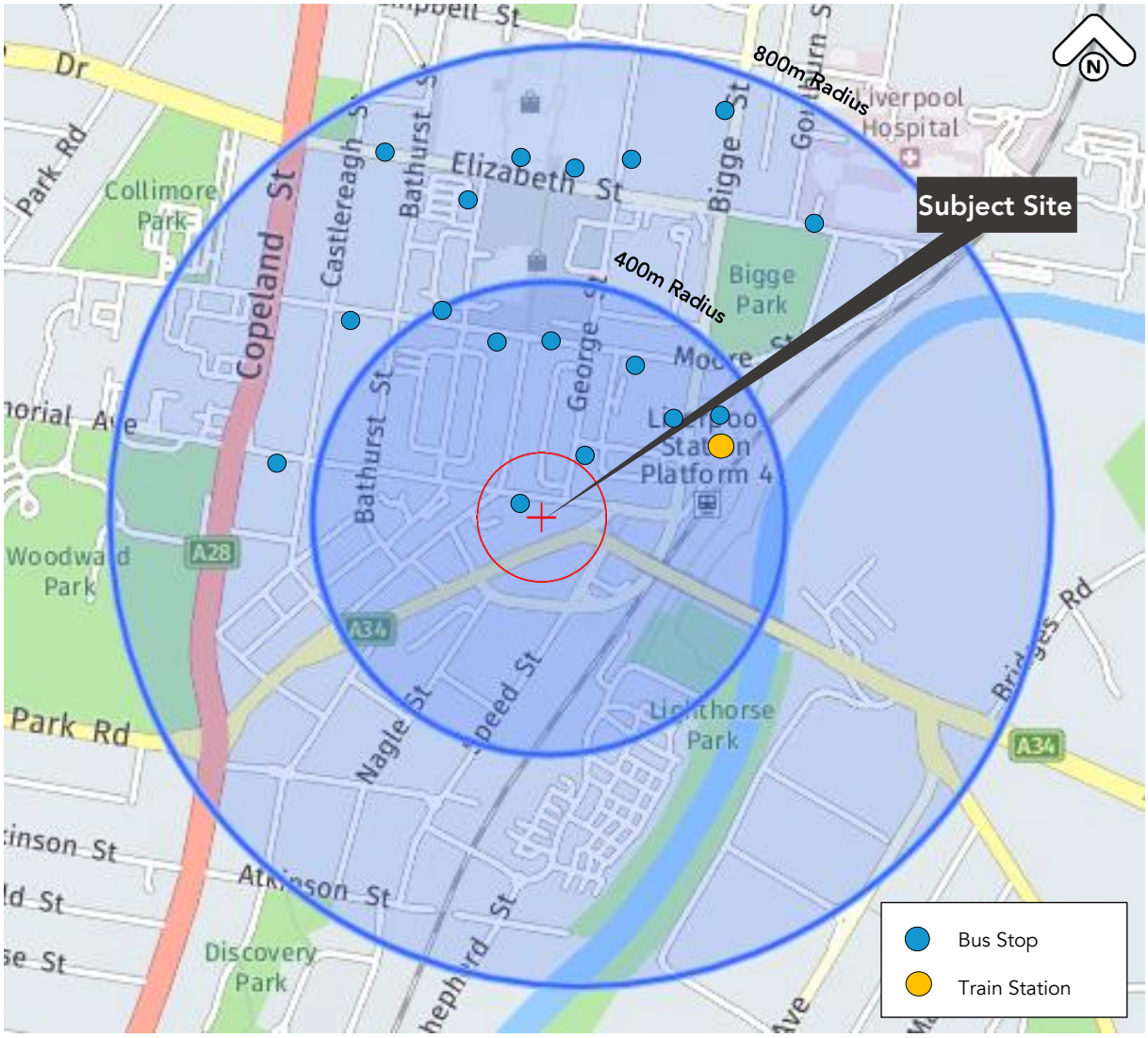

Figure 9 – 400 and 800m Catchments

3.2.1 Bus Services

The closest bus stops to the proposed LCP is located on Scott Street and George Street, as shown in Figure 10 below.

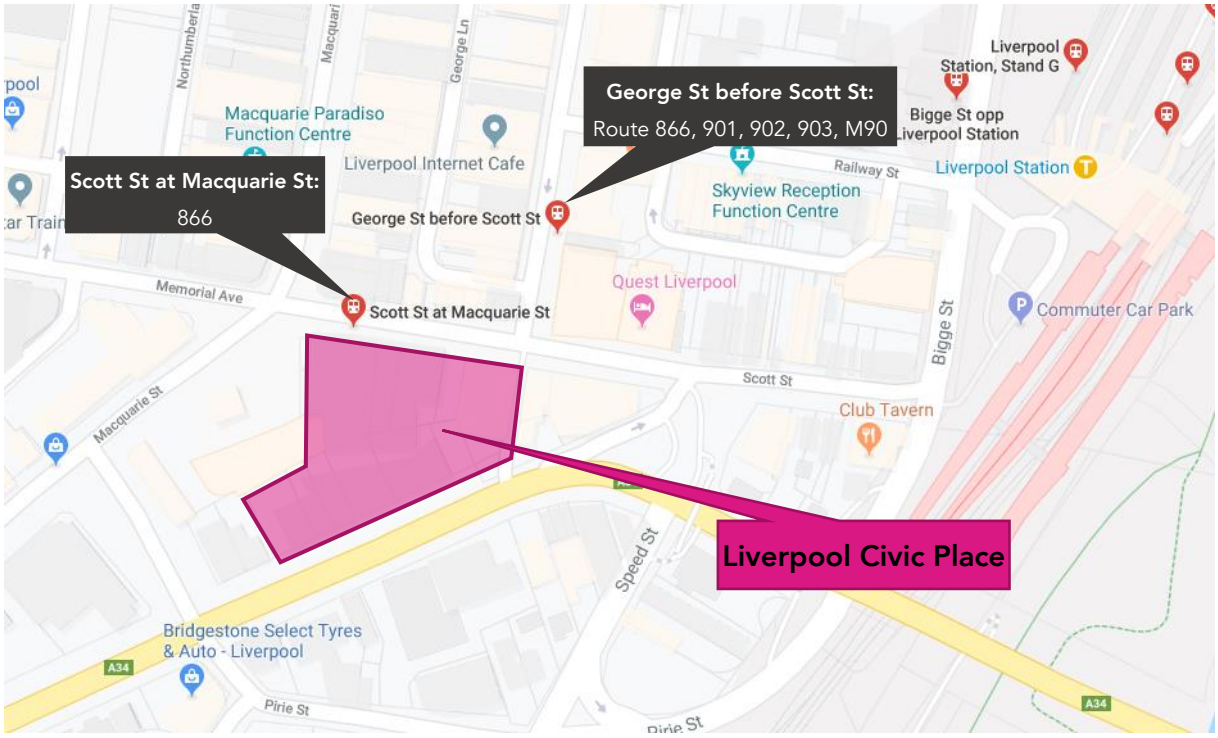

Figure 10 - Nearby Bus Stop Locations & Respective Bus Numbers

Table 5 - Bus Services Summary

Route No.	Coverage	Frequency (approximate)	Stop Location
866	Casula to Liverpool	Approximately every 30 minutes (Mon-Fri) Approximately every 1 hour (Sat, Sun & Public Holidays)	Scott St at Macquarie St
901	Holsworthy to Liverpool via Wattle Grove	Approximately every 30 minutes (Mon-Fri) Approximately every 1 hour (Sat, Sun & Public Holidays)	George St before Scott St
902	Holsworthy to Liverpool via Moorebank	Approximately every 30 minutes (Mon-Fri) Approximately every 1 hour (Sat, Sun & Public Holidays)	George St before Scott St
903	Liverpool to Chipping Norton (Loop Service)	Approximately every 30-40 minutes (Mon-Fri) Approximately every 1 hour (Sat) Approximately every 2 hours (Sun & Public Holidays)	George St before Scott St
M90	Burwood to Liverpool	Approximately every 10-15 minutes (Mon-Fri) Approximately every 20 minutes (Sat, Sun & Public Holidays)	George St before Scott St

3.2.2 Train Services

Liverpool Railway Station is located within comfortable walking distance to the proposed LCP, located on the T2 Inner West & Leppington Line, T3 Bankstown Line and T5 Cumberland Line, operated by Sydney Trains.

Table 6 - Train Services Summary

Train Line	From	To	Frequency (approx..)	Services operate approx. (Weekdays)	Services operate approx. (Weekends)
Inner West & Leppington	Leppington	City	Every 10-20 minutes More frequent during the peak hours	5:21am to 12:35am	3:57am to 12:27am
Inner West & Leppington	City	Leppington	Every 20-30 minutes More frequent during the peak hours	4:58am to 2:32am	5:24am to 2:17am
Bankstown	Liverpool	City	Every 10-15 minutes in the peak hours	3:54am to 12:24am	4:06am to 11:36pm
Bankstown	City	Liverpool	Every 15-20 minutes in the peak hours	6:02am to 2:32am	5:47am to 2:17am
Cumberland	Leppington	Richmond	Every 30 minutes	6:21 am to 12:18am	4:23am to 11:53pm
Cumberland	Richmond	Leppington	Every 30 minutes	7:19am to 12:28am	5:24am to 12:54am

The train services provide high frequency access between Liverpool, the City and neighbouring town centres, particularly during the commuter peak periods. The high frequency services make it a viable alternative mode of transport for prospective residents, visitors and staff.

3.3 Active Travel

In addition to public transport, the locality has been assessed for its active transport potential. It is noted that the subject site is adjacent to the Liverpool City Centre which will likely lead to higher rates of walking and cycling trips.

In terms of public infrastructure, the local road network offers a high level of amenity and safety for pedestrians, providing footpaths on either side of most roadways, signalised crossing, supporting signage and appropriate lighting throughout the locality.

In accordance with the TfNSW Cycleway Finder, the subject site is located within a bicycle network comprising of Shared paths as well as on-General Roads (see Figure 11). It is noted however, that there are no dedicated cycleways along the immediate frontage of the site, and the cycling network within the vicinity of the site is disconnected between Liverpool Hospital and the western side of the Liverpool City Centre. Notwithstanding this, the existing cycling infrastructure provides connection to Warwick Farm to the north, and the cycle route along the railway line, towards the south, provides linkage to Casula and Glenfield.

This will encourage and promote cycling as an alternative mode of transport for prospective occupants which is a healthy, low cost and environmentally friendly method of travel.

Figure 11 - Cycleways in the Locality of the Site (Source; NSW Cycleway Finder)

4. Future Road Network

Council currently has a proposal to relocate and realign the existing slip lane off Terminus Street into Scott Street, opposite to Speed Street as shown in Figure 12. The proposed road realignment has been incorporated into the traffic impact assessment and SIDRA modelling.

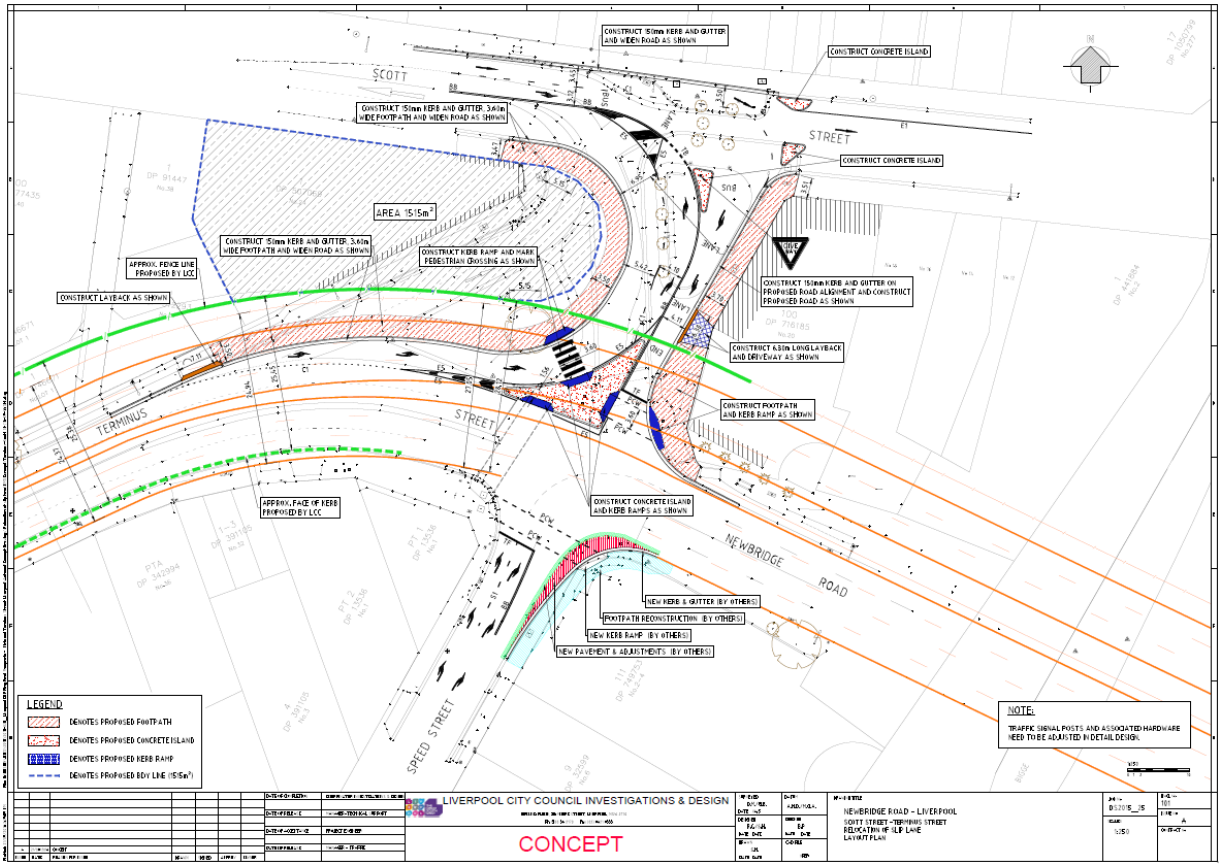

Figure 12 - Proposed Slip Lane Relocation

TfNSW has plans for a future 6-lane widening along Terminus Street as shown in Figure 13. It is noted that the proposal is currently at high level stages. However, the proposed road widening has been included within the traffic impact assessment and SIDRA modelling.

The Terminus Street access has also been designed to anticipate the proposed widening to ensure that the scheme operates under the current and future arrangements.

The proposed road widening of Terminus Street will be included in the detailed design stages once more information is provided regarding the proposed works.

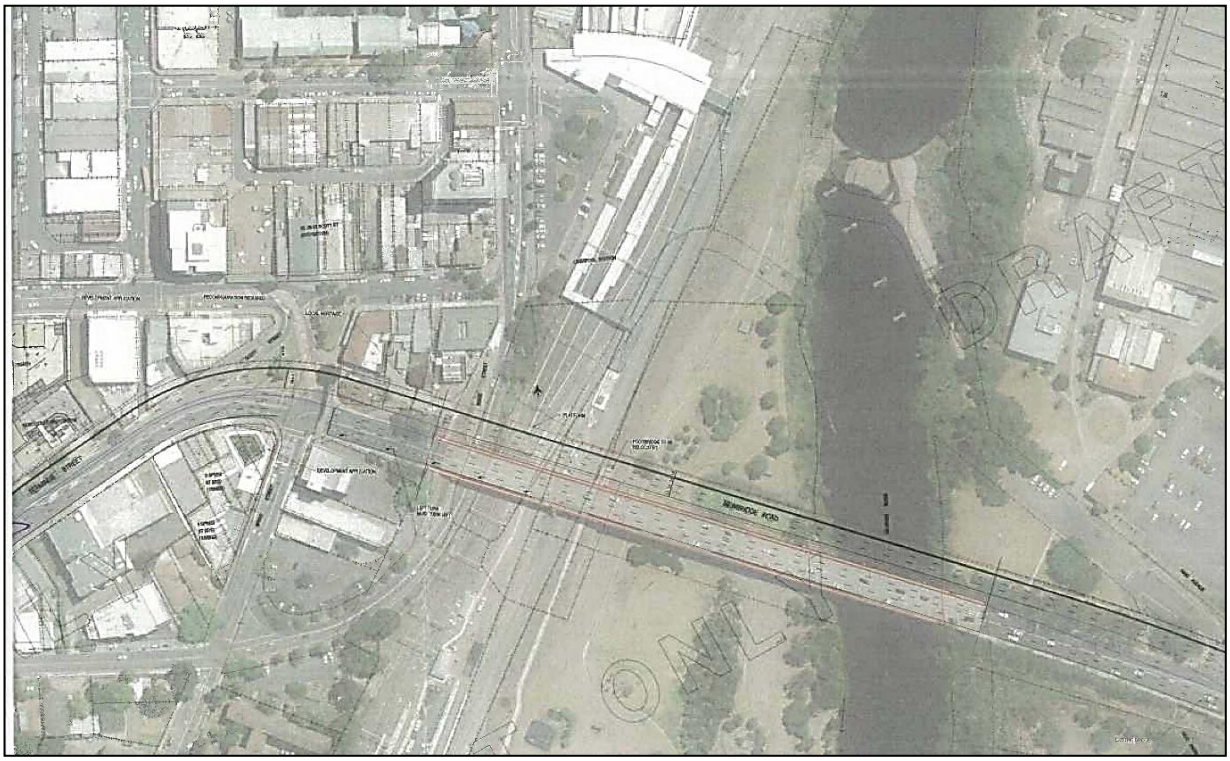

Figure 13 - Proposed Terminus Street Road Widening (Aerial View with TfNSW Proposal Overlay)

5. Traffic Impact Assessment

The proposed Amending Concept DA involves an amendment to the approved Concept DA relating to Liverpool Civic Place (DA-585/2019) to permit residential uses within Phase B as well as slight increases to the approved building envelope.

The projected traffic activity associated with Amending Concept DA has been adjusted to align with the yields of Phase B reference design.

This assessment includes the following:

- Traffic generation potential,
- Traffic distribution,
- Traffic modelling,
- Traffic impact on the nearby intersections and road network.

The traffic modelling assessment includes the prohibition of the right turn movements to/from the Terminus Street driveway, which was a condition of the Phase A consent and is enforced by a central median island.

5.1 Development Traffic Generation

This section presents an estimate of the traffic generation of the proposed development with reference to the Concept Approval, which established traffic generation rates based on the *Guide to Traffic Generating Developments v2.2 (2002) and Technical Direction TDT 2013/04*.

5.1.1 Residential Trip Generation Rates

When TfNSW undertook Traffic Generation and Parking Generation Survey study in 2010 to update the Guide to Traffic Generating Development v2.2 (2002), the suggested vehicle trip generation rates were derived from ten sites within both Sydney Urban area and regional areas. The Roads and Maritime *Guide to Traffic Generating Developments* technical direction *TDT2013/04a (2013)* has set out the vehicle trip generation rates for residential, which are as follows:

- Morning peak hour vehicle trips per unit = 0.19 = 322 x 0.19 = 61 trips
- Evening peak hour vehicle trips per unit = 0.15 = 322 x 0.15 = 48 trips

5.1.2 Cafe / Food and Beverage Trip Generation Rates:

The RMS Guide v2.2 (2002) specifies the following trip generation rates for the proposed restaurant when applied to the relevant GFAs:

- Evening peak hour vehicle trips = 5 per 100 sqm GFA = 314m^2 x 5 per 100m^2 = 16 trips

For the weekday morning peak hour, half of the evening peak hour vehicle trips has been estimated.

- Morning peak hour vehicle trips = 8 trips

5.2 Development Vehicle Trip Generation Summary

The traffic generation of the proposed development during the morning and evening peak periods is summarised in Table 7.

It is noted that the proposal includes the construction of 26 levels for residential uses

Table 7 – Development traffic generation

Land Use	Dwellings / Area	Vehicle trip rates		Vehicle trip generation		Access
		AM	PM	AM	PM	
Retail (Cafe / Food and Beverage)	314	Half of the PM trips	5 per 100m^2	8	16	Scott St
Residential	322	0.19	0.15	61	48	Scott St
Total				**69**	**64**	

A comparison of the peak hour traffic activity associated with the Phase B Detailed DA for Commercial and Boarding House and Amending Concept DA for Residential Use is presented in the following Table 8.

Table 8 – Comparison of Phase B Detailed DA & Amending Concept DA

Land Use	**Phase B Detailed DA**		**Amending Concept DA**		**Difference**	
	AM	PM	AM	PM	AM	PM
Phase B Detailed DA - Commercial & Boarding House	81	70	-	-	-	-
Amending Concept DA - Cafe / Food & Beverage + Residential Use	-	-	69	64	-	-
Total	**81**	**70**	**69**	**64**	**-12**	**-6**

The Amending Concept DA for Residential Use involves a lesser level of traffic activity when compared with the Phase B approval, being a reduction of 12 and 6 vehicles during the morning and evening peaks, respectively. Therefore this level of traffic is not considered to have a significant impact on the road network given the daily fluctuations that occur. Hence, Sidra modelling is considered the same as carried out for Phase B Detailed DA for Commercial and Boarding House uses.

5.3 Phase A Post Development Conditions

Table 9 – Phase A SIDRA Results - Post-Development Scenario

Intersection	Period	Level of Service	Degree of Saturation	Average Delay (sec)	95% Queue Length (m)
Scott Street / George Street	AM Peak	B	0.279	26.7	60.8
	PM Peak	B	0.327	24.5	73.8
Macquarie Street / Memorial Avenue / Scott Street	AM Peak	B	0.379	26.4	81.3
	PM Peak	B	0.802	26.6	65.3
Macquarie Street / Pirie Street	AM Peak	B	0.42	24.1	85.8
	PM Peak	C	0.563	28.8	114.2
Terminus Street / Newbridge Road / Speed Street	AM Peak	B	0.827	15.9	298.8
	PM Peak	D	0.934	44.8	460
Terminus Street / Pirie Street	AM Peak	B	0.916	27.8	114.4
	PM Peak	B	0.53	23.5	104.9
Terminus Street / Scott Street	AM Peak	A	0.115	5.6	3.4
	PM Peak	A	0.118	5.6	2.7
Terminus Street Access	AM Peak	A	0.325	6.6	0.5
	PM Peak	A	0.349	6.6	3
Scott Street Access	AM Peak	A	0.149	6.9	0.1
	PM Peak	A	0.301	6.9	4.9

The SIDRA results indicate that the Scott Street and Terminus Street Accesses will operate with acceptable delay and queuing in both AM and PM peaks. The George Street and Scott Street intersection will operate in similar level of delay and queuing as the existing conditions.

It is noted that the average delay and queuing distance for the eastern leg of the Macquarie Street / Memorial Avenue / Scott Street intersection will be approximately 27 seconds and 65m respectively during the PM peak which may impact the proposed access driveway along Scott Street, however it will operate at an acceptable Level of Service.

6. Parking Provision

The Phase B DA for Commercial and Boarding House uses included 145 car parking spaces across the four basement levels.

The proposed Amending Concept DA to incorporate residential uses within the Phase B envelope does not seek approval for the number of parking spaces and the future Detailed DA aims to limit the parking provision to the four basement levels and adjust the development accordingly. Therefore, the impacts of the residential use and the slight extension to the building envelope would not have larger parking impacts and the traffic activity associated with the parking demand can be accommodated within the existing road network.

The specific yield and the parking spaces of the proposed residential development will be determined in the detailed DA, subject to the application of the Liverpool Development Control Plans, Liverpool Local Environmental Plan and SEPP Housing.

6.1 Travel Plan

It is noted that Condition 27 of the Concept Approval requires the provision of a Travel Plan to promote the use of more sustainable modes of travel. This is typically established through the implementation of a Green Travel Plan, which is developed with input from the occupants of the building or campus.

The preparation of the Green Travel Plan at a later stage risks losing the opportunity to include physical measures within the design, therefore it is important to establish facilities required to support sustainable transport within the building design.

In this regard, there are essentially two parts to a Green Travel Plan, comprising an outline plan to inform the building design team, and an implementation plan, which is adopted by the users of the building.

The preparation of the outline Green Travel Plan could be prepared as a Condition of the Detailed DA consent, or during the determination period in order to comply with Condition 27.

It is important that in terms of the building design, the DA scheme includes the bike parking requirements stipulated in the DCP and Green Star rating system, while end-of-trip facilities are also proposed.

The bike parking for the public will be provided within the public domain areas where they will be visible and in proximity to the public entrances. This encourages use, rather than provides spaces hidden in the basement car park.

6.2 Service Vehicle Parking Provision

The service vehicle parking provision requirement has been extracted from the Council DCP which stipulates the following:

" Sufficient service and delivery vehicle parking adequate to provide for the needs of the development".

The approved basement envelope is capable to accommodate vehicles up to a Medium Rigid Vehicle (MRV) for general deliveries. The loading dock is capable of providing one (1) MRV space and two (2) Small Rigid Vehicle (SRV) spaces which is anticipated to be sufficient to accommodate both components of the proposed development.

7. Access and Car Park Assessment

The following section presents an assessment of the proposed development with reference to the requirements of AS2890.1:2004 (Off-street Car Parking), AS2890.2:2018 (Off-street Commercial Vehicle Facilities), AS2890.3:2015 (Bicycle Parking) and AS2890.6:2009 (Off-street Parking for People with Disabilities). This section is to be read in conjunction with the following architectural plans provided by Scott Carver:

- Lower Ground Floor Plan (Drawing No. SD10_099, Reference No: 20230059, Dated 4 December 2023)
- Basement 01 (Drawing No. SD10_098, Reference No: 20230059, Dated 4 December 2023)
- Basement 02 (Drawing No. SD10_097, Reference No: 20230059, Dated 4 December 2023)
- Basement 03 (Drawing No. SD10_096, Reference No: 20230059, Dated 4 December 2023)
- Basement 04 (Drawing No. SD10_095, Reference No: 20230059, Dated 4 December 2023)

7.1 Vehicular Access

Access is to be provided from Scott Street via the Shared Zone established as part of Phase A. The future separate Detailed DA will document the connection between the Shared Zone and the Phase B car park and loading dock.

7.2 Car Park Arrangements

The design and layout of all parking within the Phase B development will be documented within the Detailed DA.

The parking for all user groups (e.g. cars, bicycles, loading dock etc) will be designed in accordance with the relevant standards and provide a safe and functional car park.

8. Conclusion

ptc. has been engaged by Built to prepare a Traffic Impact Assessment to accompany a Phase B Amending Concept Development Application to Liverpool City Council. The development is located at 52 Scott Street, Liverpool.

The proposal involves the following key components:

- Retail Uses – A building accommodating the lower ground floor of approximately 314m^2 GFA for the purpose of cafe, food and beverage.
- Residential Use – A building accommodating 26 storeys for residential purposes.
- A four-level basement car park to accommodate parking for the residential component of the development.

The following findings have been identified during the course of study:

- The peak hour traffic activity associated with the proposal will be accommodated within the road network having regard for the separation of movements between Scott Street and Terminus Street and the future widening of Terminus Street. The traffic activity associated with Amending Concept DA stipulates that there is similar level of impact on the traffic than the previous permitted commercial scheme on the site.
- The access from Scott Street will provide access for both the car park serving the commercial building and library (Phase A) and the car park serving the subject building (Phase B).
- The access from Scott Street will also provide access to the loading dock serving both residential and retail components of the development.

Attachment 1 SIDRA Results