

28 October 2020

GazCorp
Level 10, 60 Park St
SYDNEY NSW 2000

THE GROVE FASHION SPREE PLANNING PROPOSAL – TRAFFIC IMPACT STATEMENT

Introduction

This letter is provided as supporting documentation to a Planning Proposal (Ref: RZ-8/2020), prepared by Ethos Urban, in seeking amendments to Clauses 21 and 24 in Schedule 1 of the Liverpool LEP 2008 is to provide greater flexibility in the permissible uses and realise the full development potential of The Grove Liverpool site.

The proposed 2,000 m² increase to the Fashion Spree site's maximum permitted floorspace is sought to help realise Gazcorp's intention to provide a greater experience for shoppers and a better urban design outcome by sleeving the Fashion Spree building with tenancies while integrating the two retail centres without significant impact upon any other surrounding town, Regional or Sub-Regional Centres.

This letter provides an assessment of the subject specific impacts associated with this planning proposal.

Site Context

The Grove Liverpool is made up of four land parcels owned by Gazcorp comprising:

- Lot 101 in DP1043160- the Grove Homemaker Centre;
- Lot 23 in DP1190437 - Fashion Spree;
- Lot 22 in DP1190437; and
- Lot 100 in DP1043160

Lot 22 in DP1190437 and Lot 100 in DP1043160 include a variety of other retail uses that are currently contained within a number of one storey large format warehouses. Under the current Liverpool LEP 2008, the Site is partially zoned B6 Enterprise Corridor and partially B5 Business Development. The site has an area of approximately 156,000 m² and has a frontage to Orange Grove Road / Cumberland Highway and Viscount Place. An aerial photo of the site is shown in **Figure 1**.

Figure 1 – Location of the Site



Access and Street Network

Vehicular access to the site remains the same and traffic can access the site via Viscount Place and Homepride Avenue that are then connected to the wider road network such as Cumberland Highway and Hume Highway respectively.

Traffic Impacts

The introduction of 'business premises' into both Clauses 21 and 24 in Schedule 1 as an additional permitted use (circa 1,500 m² of Net Lettable Area) will enable the provision of ancillary and complementary services for the convenience of the visitors and working population on site. Since the majority of these users are already travelled to and from site already, it is not expected that there will be additional traffic generation and parking demand associated with the introduction of the 'business premises'.

Cumulative Impacts

The additional permitted use as part of the planning proposal, has also been considered in The Grove expansion development application for its cumulative impacts. Preliminary traffic modelling undertaken to date for The Grove expansion development application, has shown that the cumulative impacts can be mitigated with minor intersection works. Refer to **Appendix A** for the preliminary traffic modelling outputs presented to Council on 16 September 2020.

Conclusions

On this basis of the traffic appraisal, it is concluded that the planning proposal will have negligible impacts on traffic and associated infrastructure, which means there would be negligible changes to the performance (level of service and delays) of the surrounding intersections.

If you have any questions regarding the above please do not hesitate to contact me at your convenience.

Yours sincerely

A handwritten signature in black ink, appearing to read "Andy Yung", with a stylized flourish at the end.

Andy Yung

Director

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SCT Consulting

Appendix A – Preliminary traffic modelling outputs for The Grove expansion development application



The Grove Liverpool

Car parking, bus route design
and traffic modelling

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Reviewed by: Andy Yung

16/09/2020 v1.0



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Purpose of document

Purpose of document

- SCT Consulting has been engaged by GazCorp to conduct traffic and transport impact assessment to support DA for The Grove Homemaker Centre, Liverpool.
- This document has been prepared to highlight design improvements since 12 March 2020 (pre-DA meeting) and summarise the outcomes of SIDRA modelling undertaken including base year and future year scenarios (without and with the proposed shopping centre expansion).
- It is identified that the proposed car park design can satisfy the increase vehicle trips in associated with the GLFA yield.
- Infrastructure upgrade is required at key intersections around the site to ensure that impacts on the external road network can be mitigated.
- Detailed modelling results will be included in the traffic and transport impact assessment report.

02



Latest design

Basement car park

- Total basement parking = 2,033 spaces

- Ramp to connect to ground level car parking, especially for goods pick up outside large format retail.

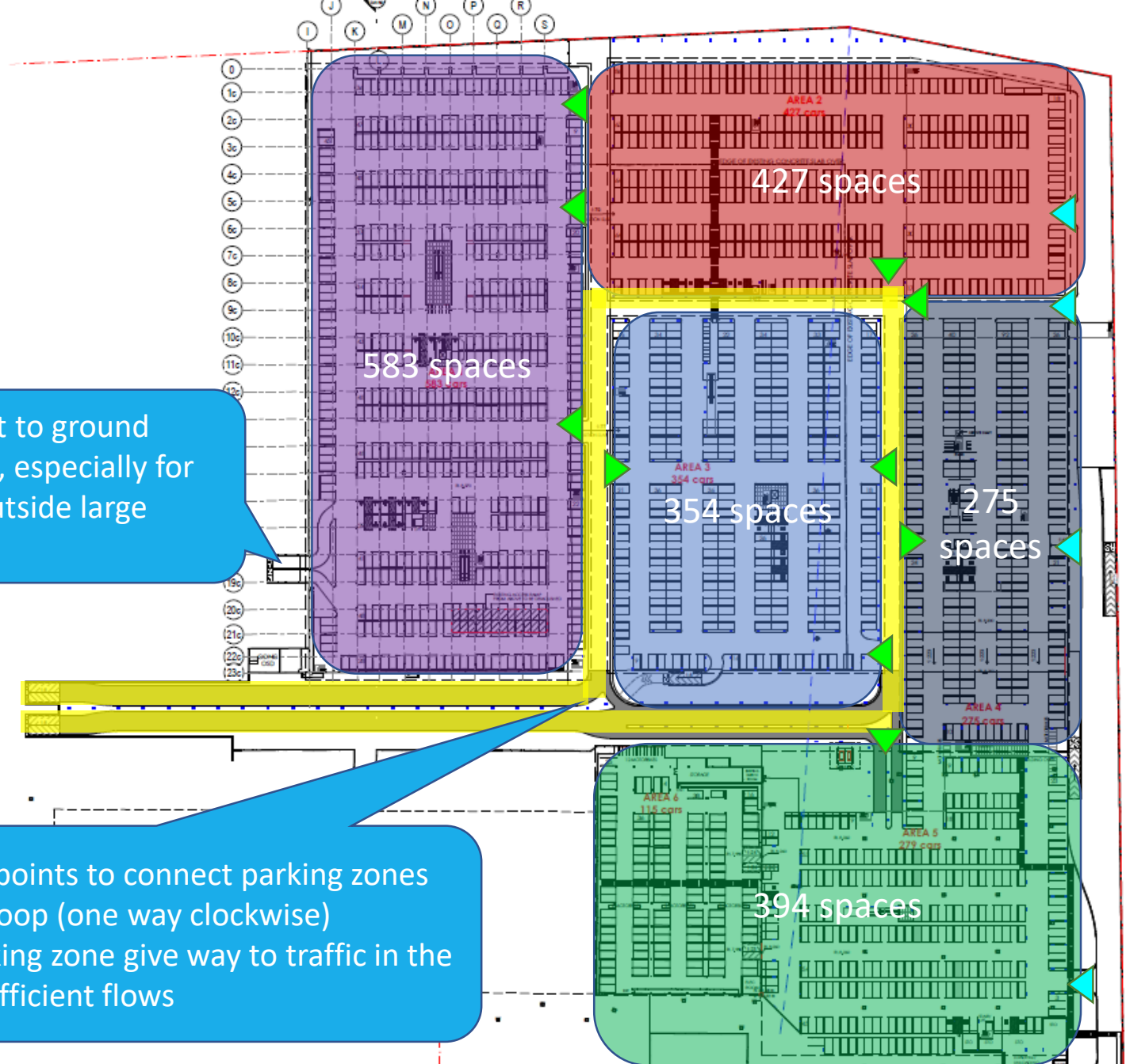
- Multiple access points to connect parking zones along the main loop (one way clockwise)
- Traffic from parking zone give way to traffic in the loop to ensure efficient flows

Legend

◀ Main access from / to Cumberland Hwy

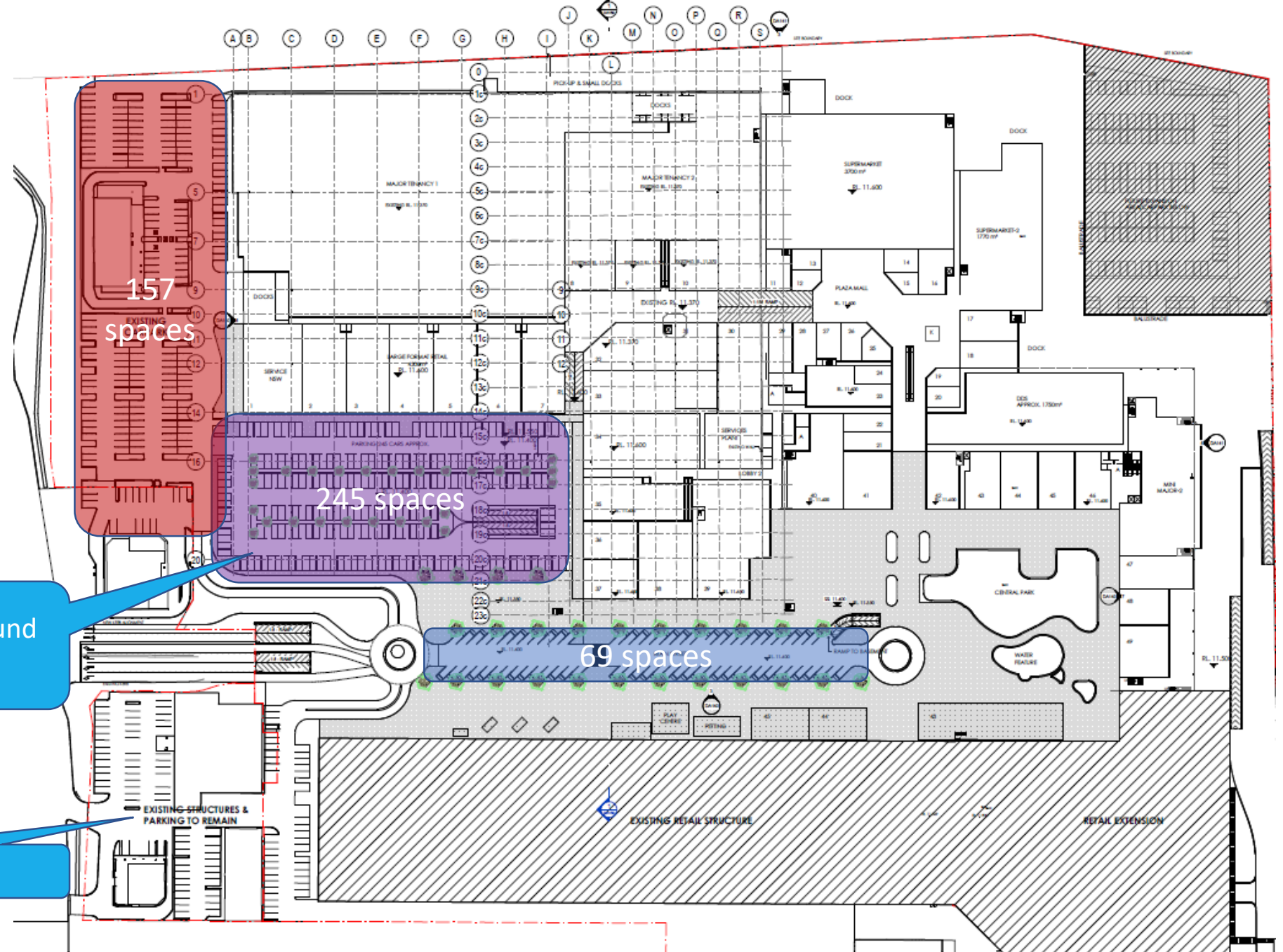
◀ Main access from / to Homepride Ave

■ Main loop



Site plan

- Total ground level parking = 471 spaces



Car parking

Shopping centre	Lot	Land use*	GLA (m²)			Car parking numbers (spaces)			
			Existing	Proposal	Yield	Current provision	Additional parking spaces required	Total required parking spaces^	Proposed parking spaces
The Grove Liverpool	100 and 101	Retail	26,039	40,411	14,372	1,275	479-589	1,754-1,864	2,504
		Non-retail	5,598	7,553	1,955		-		
		Total	31,637	47,964	16,327		479-589		
Fashion Spree	23	Retail	9,892	15,081	5,189	503	173-213	676-716	
		Non-retail	4,039	4,567	528		-		
		Total	13,931	19,648	5,717		173-213		
Total			45,568	67,612	22,044	1,778	652-802	2,430-2,580	

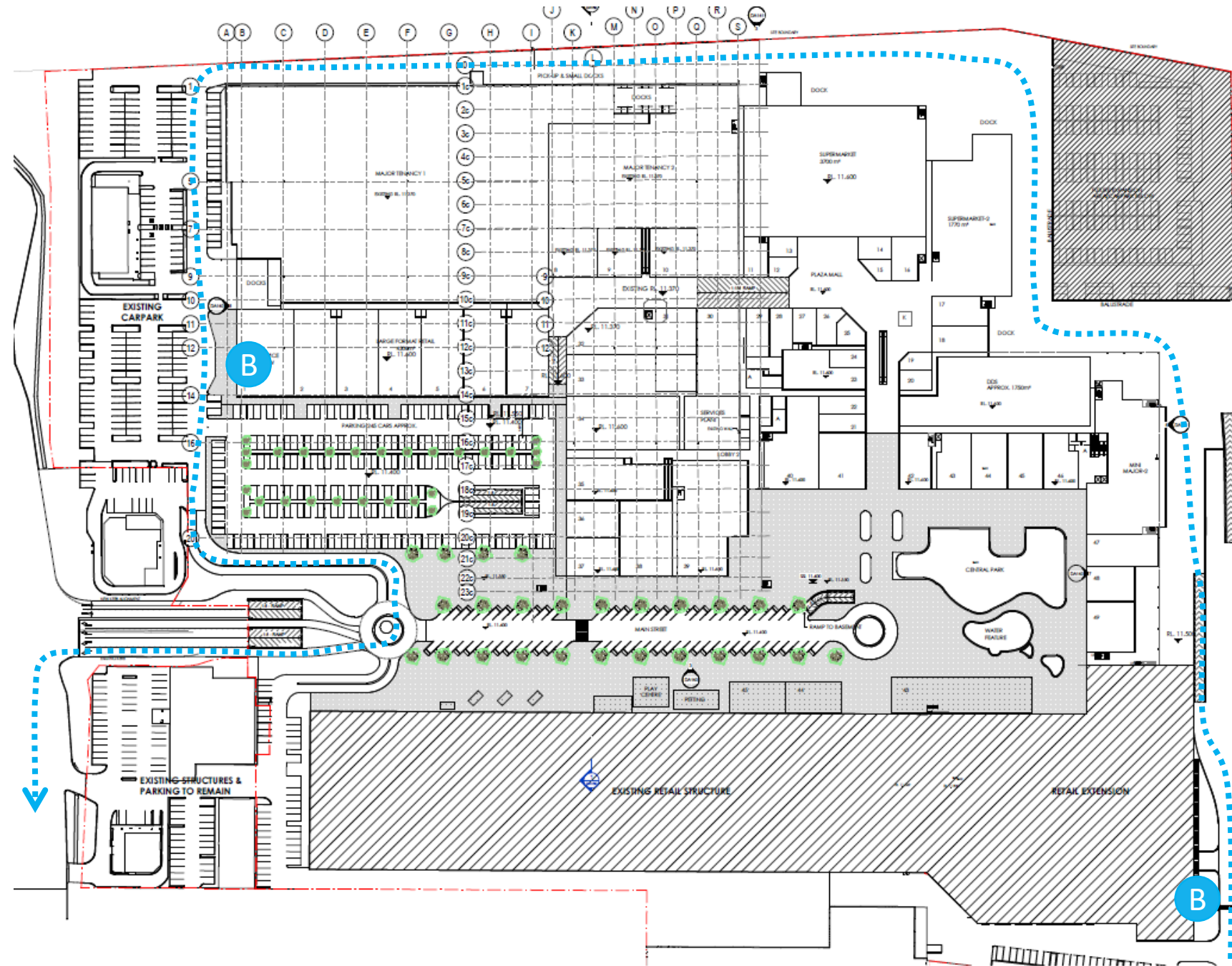
*It is assumed that the retail land use will generate parking demand (shown in red). Non-retail could include recreational facilities, food and drinks and public admin building, which are considered to be ancillary uses to the retail offer and will not generate additional parking demand.

[^]The range for total required parking spaces refers to RMS guide to traffic generating developments (4.1 spaces per 100m²) and Council DCP (1 space per 30m²) based on retail land uses.

The proposed parking spaces is compliant with required parking based on planning documents.

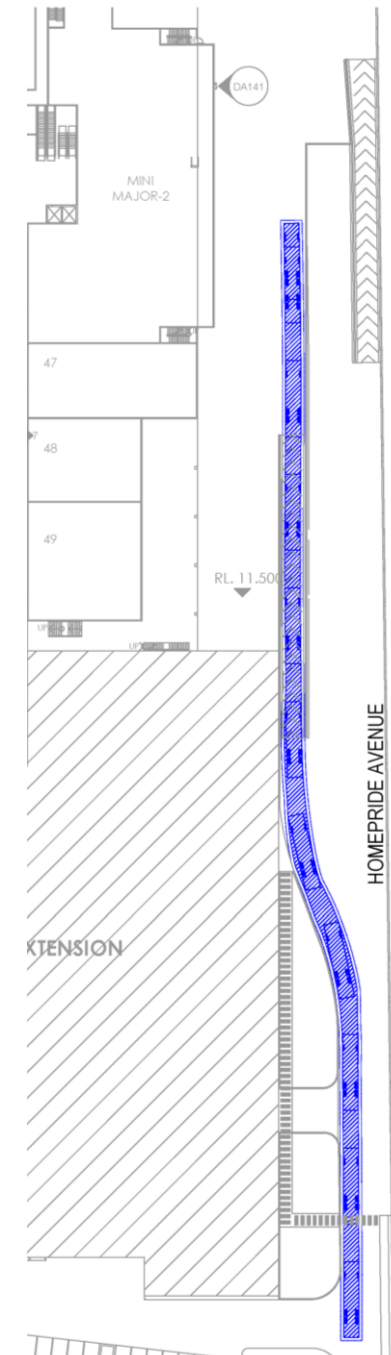
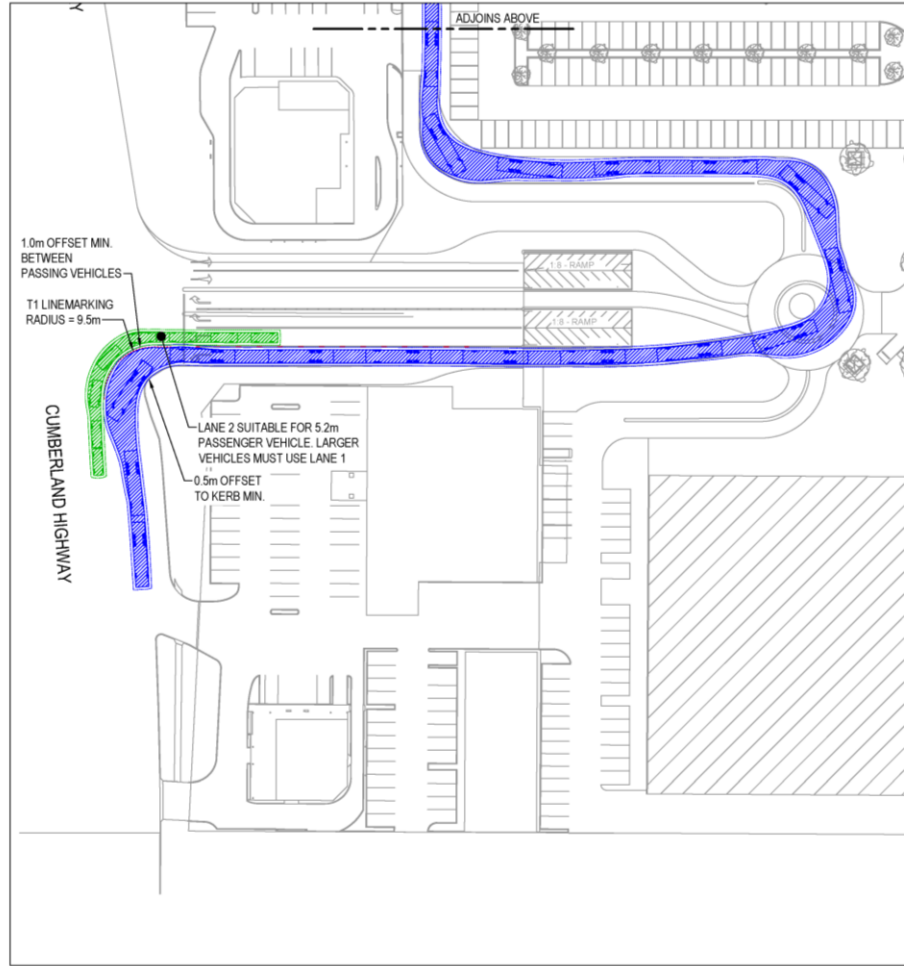
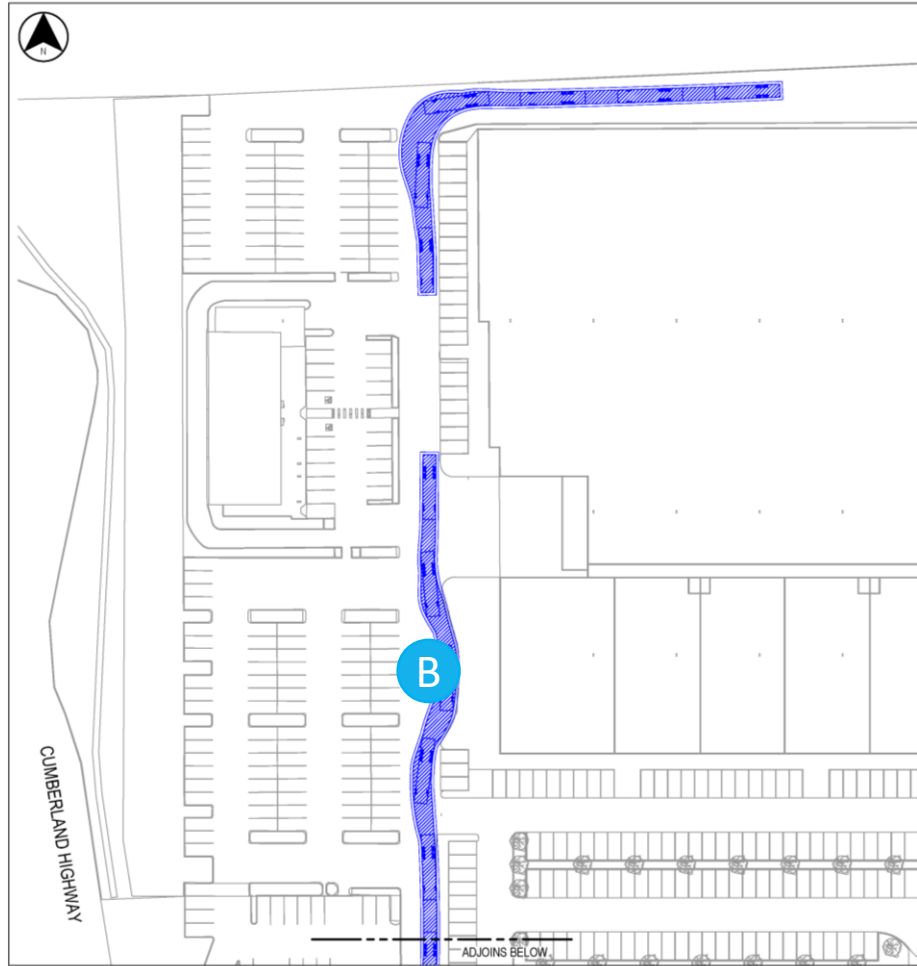
Proposed bus route

- One-way bus route is proposed using truck ramp, service road, internal car park street, Viscount Pl from Homepride Avenue to Cumberland Highway.
- Two bus stops are proposed at Homepride Avenue and in front of Service NSW.
- The service would operate every 30 minutes on weekdays and weekends.
- Meeting with Peter Whitney of Transit Systems (TS) on 2 Sept 2020. TS confirmed the route and bus stop locations would satisfy their requirements.
- TS also confirmed that it is preferred to have the separation of the bus route and the basement car parking traffic to ensure that the buses would run on time.



Swept path for bus

- Swept path analysis has confirmed the internal road network can be designed to accommodate (12.5m) bus movements in the internal road network.



02

Overview of traffic modelling

Key assumptions of traffic modelling



Base year (2020)

- Modelling for current condition was based on traffic survey undertaken on 31 Jul and 1 Aug 2020 and models have been validated through observed queue length;
- Due to the ongoing COVID-19 pandemic, 2020 base year traffic volumes in the assessment were factored to 2019 (pre-COVID scenario) based on historic RMS permanent counts in the vicinity of the site.
- A weekly 24 hours tube count (between 30 July and 05 August 2020) on Viscount Place and Homepride Avenue captured customer car trip profile throughout the week and to identify the traffic distribution of the two access points, i.e. 75%:25%; and
- The directional splits of development traffic at Viscount Place and Homepride Avenue accesses are determined based on current proportion of turning movements at these critical intersections (refer image on the left).

Key assumptions of traffic modelling

Future year (2030)

- Future year background traffic growth adopts the rates from RMS Strategic Assignment Model. An 11-year growth rate was calculated to apply on the 2019 traffic demand to derive the background traffic in 2030.

Peak hour	Road	Direction	2020 - 2019 factor*	Growth rate	
				2019-2030 (per annum)	2019-2030 (total)
Thursday	Cumberland Hwy	Northbound	103%	1.40%	120%
		Southbound	98%	1.70%	118%
	Hume Hwy	Northbound	97%	0.90%	107%
		Southbound	97%	0.50%	103%
Saturday	Cumberland Hwy	Northbound	109%	1.40%	127%
		Southbound	101%	1.70%	122%
	Hume Hwy	Northbound	99%	0.90%	109%
		Southbound	102%	0.50%	108%

*Factor is derived by volume in 2019 divided by 2020

Key assumptions of traffic modelling

Development trip generation

- Trip generation by the site adopts RMS's Technical Direction specified vehicle trip generation based on the shopping centre GLFA , i.e. 4.4 and 5.5 vehicles / 100m² GLA for weekday and weekend peak hour;
- Cumulative impact has been considered to include both the expansion of Fashion Spree (approved and scheduled to construct in 2021) and The Grove Liverpool; and
- Traffic assignment on internal road, roundabout, ramps is conducted based the capacity of parking spaces at ground level and basement.

Shopping centre	Lot	Land use	Yield GLA* (m ²)	Trip rates (veh / 100m ² GLFA)		Trip generation (veh/h)	
				Thursday	Saturday	Thursday	Saturday
The Grove Liverpool	100 and 101	Retail	14,372	4.4	5.5	632	790
Fashion Spree	23	Retail	5,189			228	285
Total			19,561	-	-	861	1,076

*It is assumed that only retail land use will generate vehicle trips.

Modelling scenarios

- **Scenario 0:** 2019 existing traffic conditions (pre-COVID)
- **Scenario 1:** 2020 existing traffic conditions (COVID)
- **Scenario 2:** Background growth with existing road network;
- **Scenario 3:** Background growth and development expansion traffic with existing road network;
- **Scenario 4:** Background growth and development expansion traffic with upgraded road network (to identify road upgrade schemes required to achieve acceptable LoS);
- **Scenario 5:** Background growth and development expansion traffic with existing road network; and
(Sensitivity check: shift 10% of the traffic from Cumberland Highway access to Homepride Avenue access, leading to a 65%:35% split of the two access points)
- **Scenario 6:** Background growth and development expansion traffic with upgraded road network (based on Scenario 5).

Overview of modelling outcomes

Intersections	Peak hour	Level of service						
		2019 (pre-COVID)	2020 (COVID)	2030 without expansion	2030 with expansion	2030 with expansion (Infrastructure upgrade)	Sensitivity check: 2030 with expansion	Sensitivity check: 2030 with expansion (Infrastructure upgrade)
Cumberland Hwy / Viscount Pl	THU	B	B	B	C	B	C	B
	SAT	B	B	B	F	D	F	C
Hume Hwy / Homepride Av / Macquarie St	THU	A	A	A	B	B	B	B
	SAT	A	A	A	B	B	C (DoS>1)	A

Note that:

- The new roundabout at Viscount Place (connecting different at grade parking areas) operates satisfactorily in all cases.

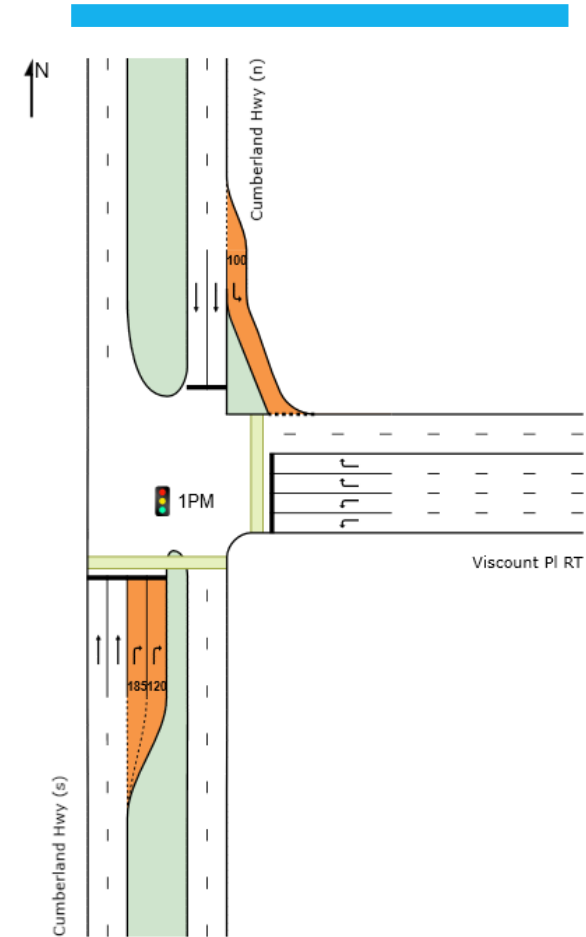
Intersection upgrades are required under the following scenarios:

- At Cumberland Highway / Viscount Place on Saturday peak, with the centre expansion.
- At Hume Highway / Homepride Avenue on Saturday peak, with the centre expansion under the sensitivity test with 10% more traffic using the Homepride access.

03

Required infrastructure upgrade

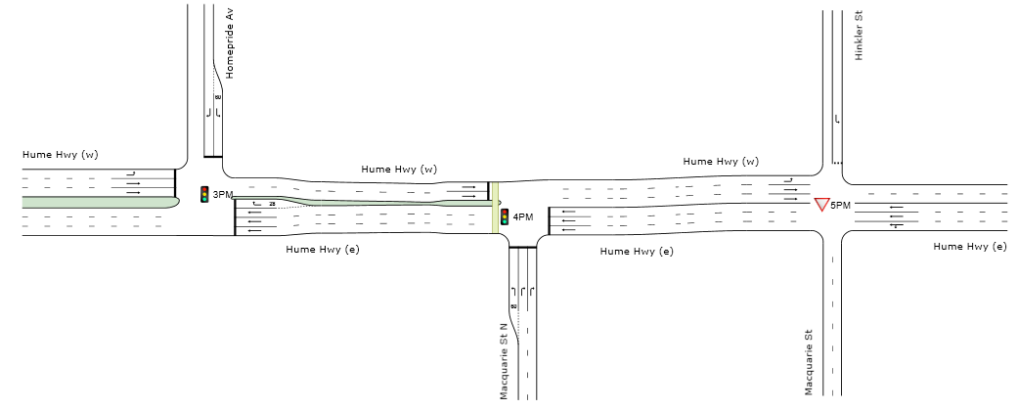
Future year with expansion



Proposed infrastructure for Cumberland Hwy / Viscount PI

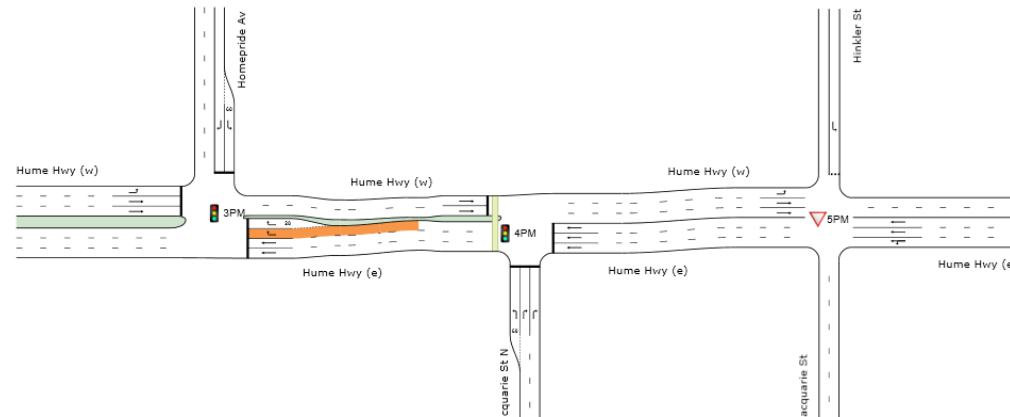
- Extend the right turn bay according to approved Works Authorisation Deed (effective length: 185m + 120m) and introduce left turn slip lane (100m) on Cumberland Highway (refer to upgrades highlighted in orange).
- LoS are satisfactory for both peak hours with development traffic.
- Queue on exit lanes from basement car park is 216m, which can be accommodated in the current design.

Existing layout for Hume Hwy / Macquarie St



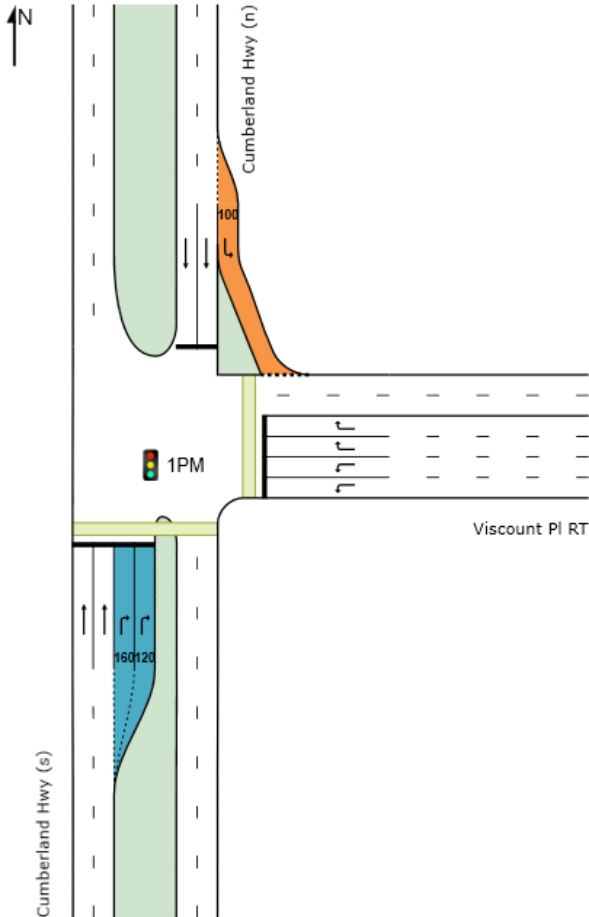
- Right turn from Hume Hwy to Homepride Ave has an average delay of around two minutes and has a queue of 7 vehicles during a Saturday peak, which spills out of the existing right turn bay (as it happens under current conditions already).
- However, the overall intersection groups along Hume Hwy perform satisfactorily and do not trigger any infrastructure upgrade.

Alternative design for Hume Hwy / Macquarie St



- In order to mitigate the queue on the east approach, it is possible to re-configure the channelisation to contain two straight lane + two right turn lane (refer to potential improvements identified in orange).
- This could halve the queue length of right turn to 4 vehicles on Hume Highway during a Saturday peak hour.

Future year with expansion (sensitivity check)

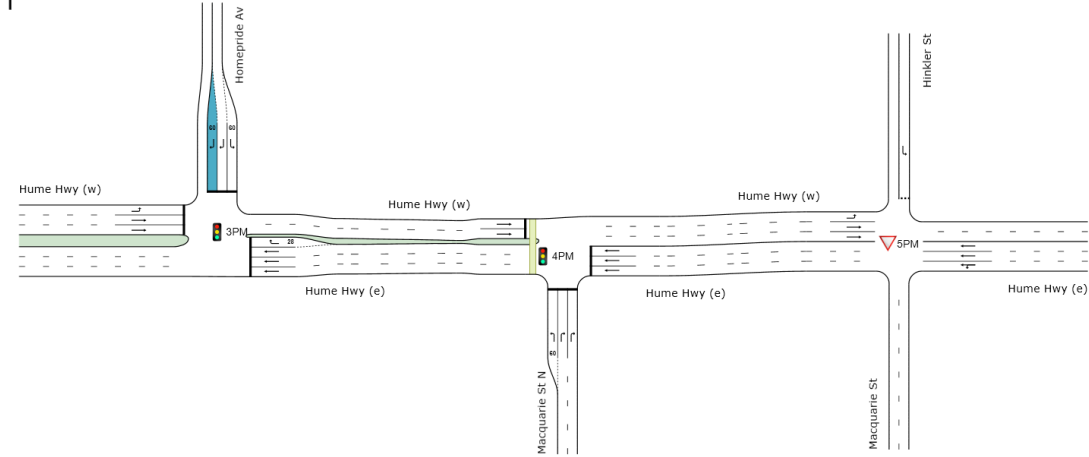


Proposed infrastructure for Cumberland Hwy / Viscount PI

- Right turn bay on Cumberland Highway can be shortened to 160m which can also be accommodated by works in approved WAD (refer to upgrades highlighted in blue).
- LoS are satisfactory for both peak hours with development traffic.
- Queue on Viscount PI further reduced to 170m, which can be accommodated in the current design.



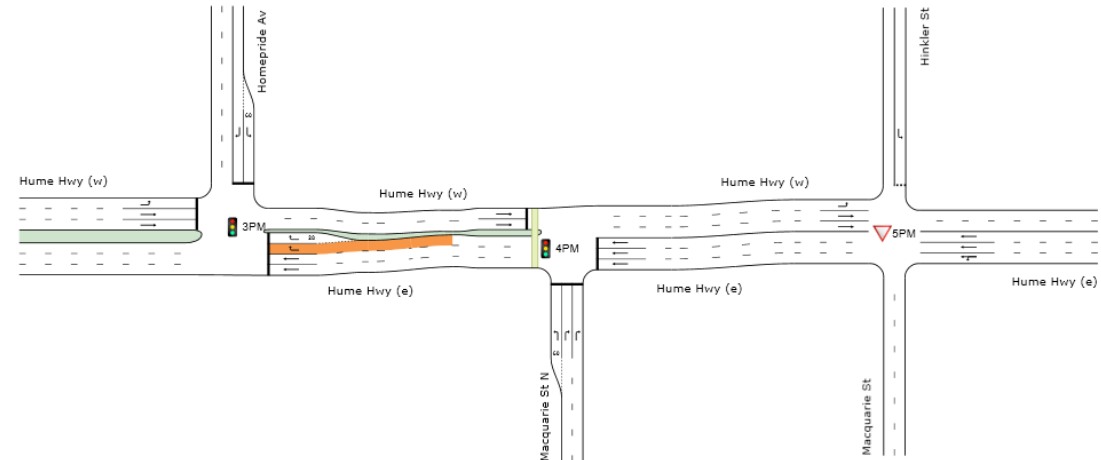
Proposed infrastructure for Hume Hwy / Macquarie St



- Double right turn lanes is recommended to facilitate increased right turn customers from Homepride Ave to Hume Hwy (refer to upgrades identified in blue).
- This halves the queue on Homepride Ave to 100m and the intersections perform satisfactorily.



Alternative design for Hume Hwy / Macquarie St



- If double right turn lanes are provided on Hume Highway into Homepride Avenue, then there is no need to duplicate right turn on Homepride Avenue.
- This could halve the queue length of right turn to 4 vehicles on Hume Highway during a Saturday peak hour.

Thank you

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