

15 September 2025

Our Ref: 21BRT0445 LT06-01

Attention: Jessica Pitcher

Place Design Group
GPO Box 775
BRISBANE QLD 4001

**PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL**

Approval no: DEV2016/813/6

Date: 24/03/2026



Dear Jessica,

RE Greenbank Shopping Centre – Stage 2 Extension – Proposed Change Application
Traffic Engineering Assessment

1. Introduction

Colliers International Engineering and Design (TTMC) Pty Ltd, previously TTM Consulting Pty Ltd, have been engaged by Region Group to undertake a traffic engineering assessment in support of a Change Application to the above-mentioned development. The change relates to the initial development approval granted by Economic Development Queensland (EDQ) on the 29 November 2017 (EDQ reference: DEV2016/813) for which a change approval was subsequently granted on 5 June 2020 (EDQ reference: DEV2016/813/2) and further change approval most recently granted on 18 December 2023 (EDQ reference: DEV2016/813/3). A copy of the approved development plan is included in **Attachment A** of this report.

This assessment addresses the traffic impacts, adequacy and design compliance of the vehicular access, car parking and service vehicle arrangements of the development as depicted in the proposed development plans prepared by Cottee Parker Architects (**Attachment B**).

Reference is made in this assessment to the following TTM assessment documents prepared in support of the current (2023) development approval:

- Traffic Engineering Assessment dated 27 April 2023.
- Response to EDQ Further Issues – Traffic Engineering dated 25 August 2023.

2. The Nature of the Proposed Change

The proposed changes primarily relate to the approved building design and layout with consequential changes to the car parking and service vehicle loading area arrangements. The approved vehicular site access arrangements generally remain unchanged with the two existing site accesses being retained and the

approved additional access on Pub Lane, at the existing Old Pub Lane intersection, remaining generally as approved.

Importantly, the overall gross floor area of the extension remains as approved at 14,022 m².

The total number of on-site car parking spaces is proposed to be reduced from 870 spaces shown on the currently approved site plan to 817 spaces currently proposed. This reduced supply is appropriate for the development as demonstrated in Section 3 below.

3. Car Parking Arrangements

For consistency the car parking supply and design layout has been assessed as per TTM's previous 2023 traffic engineering report as follows.

3.1 Planning Scheme Parking Supply Requirement

The EDQ Development Scheme refers to the local Council planning scheme for parking requirements. Logan City Council's *Servicing, Access and Parking Code* specifies the following parking supply rates for Shopping Centre development:

- 1 space per 17 m² GFA (for floor area of 1-10,000 m² GFA);
- 1 space per 20 m² GFA (for floor area >10,000-30,000 m² GFA); and
- 1 space per 23 m² GFA (for floor area >30,000 m² GFA).

Application of these rates to the existing and proposed shopping centre development results in the minimum on-site parking supplies identified in Table 1. For comparison purposes the existing and proposed parking supplies are also identified in this table.

As indicated, the proposed parking supply of 817 spaces represents a 161-space shortfall of the planning scheme acceptable outcome requirement. As such, the proposed parking supply represents a performance-based solution to the planning scheme acceptable outcome requirement. Supporting evidence is supplied in the following sections.

Table 1: Planning Scheme Acceptable Outcome Parking Supply Requirement

Stage	GLFA	GFA	Total GFA	Rate	Requirement	Existing / Proposed
Existing	~5,480 m ²	5,535 m ²	5,535 m ²	1 space / 17 m ²	326 spaces	346 spaces
Proposed	~13,882 m ²	14,022 m ²	19,557 m ²	1 space / 20 m ²	978 spaces	817 spaces

The Council requirement for parking spaces for people with a disability is that prescribed in Table D3.5 of the Building Code of Australia. For a Class 6 building the requirement is 1 space for every 50 car parking spaces (up to 1,000 spaces) and 1 space for every 100 car parking spaces in excess of 1,000 spaces.

3.2 Estimated Practical Parking Demands

In order to estimate the practical peak parking demands of the proposed development reference has been made to the NSW RTA's *Guide to Traffic Generating Developments* (2002). This document provides a parking demand model which is used for the calculation of relative parking demand characteristics of different floor area types. This model is useful when determining estimated peak parking demand of shopping centres containing a variety of different floor area types which is the case for the proposed shopping centre. It is considered to be the most accurate method for parking demand estimation and has been extensively used by the traffic planning industry. Figure 1 below is the relevant extract from the RTA guide describing the model.

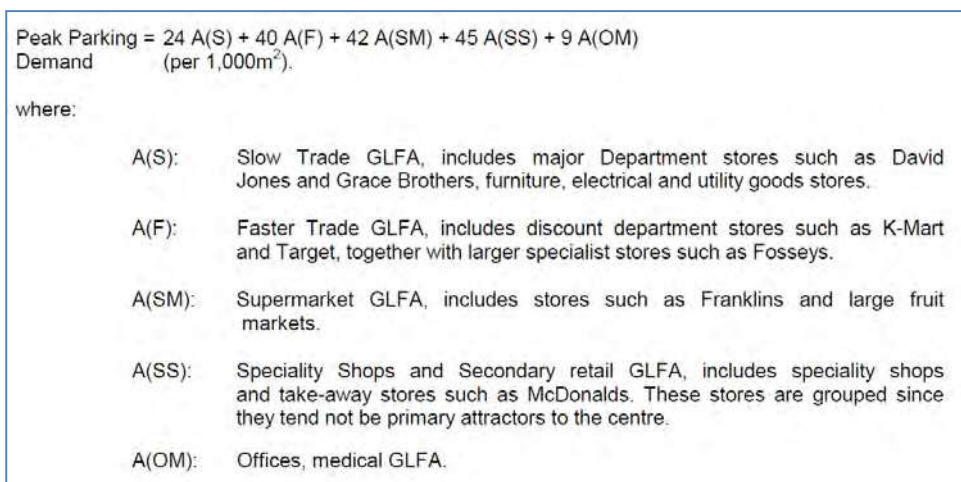


Figure 1: Peak Parking Demand Model (NSW RTA (2002))

Application of the above model results in the peak parking demand estimates for the existing shopping centre and each stage of the proposed expansion as summarised in Table 2 below.

Table 2: Estimated Peak Parking Demands

Stage	GLFA for varying floor types					Estimated Demand
	A(S)	A(F)	A(SM)	A(SS)	A(OM)	
Existing (Stage 1)	0	0	3,879 m ²	1,972 m ²	0	252 cars
Proposed (Stages 1 & 2)	6,435 m ²	0	6,414 m ²	3,892 m ²	2,992 m ²	626 cars

To validate the accuracy RTA model the parking demands of the existing Stage 1 development have been surveyed. TTM undertook a parking demand survey over four full days from 12am Thursday 20th July to 12am Monday 24th July 2023. It involved recording of vehicle movements entering and exiting the site and at the access points of the existing Tavern and Child Care Centre. Daily spot counts of parking demand were also undertaken as a control count to enable the parking demand profile of the existing shopping centre, Tavern, and Child Care Centre to be established.

Table 3 below summarises the observed peak parking demands of the existing shopping centre, inclusive of demands associated with the Caltex fuel station and BWS bottle shop.

Table 3: Existing Shopping Centre Surveyed Peak Parking Demands

Day	Time	Demand (cars)	cars/100m ² GLFA
Thursday	1630	215	3.66
Friday	1545	219	3.72
Saturday	1215	209	3.55
Sunday	1200	199	3.38

The peak parking demand occurred at 3:45pm on the Friday with a total of 219 which, based on the existing total gross leasable area (5,851m²), equates to a demand rate of 3.74 cars/100m² GLFA.

It is relevant to note that seasonal variations in economic activity at shopping centres is likely to result in varying peak parking demands throughout the year. Reference is made to NSW RTA “Trip Generation and Parking Demand Surveys of Shopping Centre Analysis Report” (September 2011) which provides an indication of the monthly variations from that study. These monthly variations have been applied to the surveyed peak demands for the Stage 1 shopping centre as detailed in Table 4 below. Also presented in this table are the estimates of the monthly peak parking demands based on the NSW RTA model.

Table 4: Estimated Monthly Variations in Existing Shopping Centre Surveyed Peak Parking Demands

Month	Variation Factor	Based on Survey	NSW RTA Model Estimate
January	1.03	228	253
February	0.91	201	224
March	1.00	221	246
April	0.93	206	229
May	0.99	219	243
June	0.92	204	226
July	0.99	219 ¹	243
August	0.93	206	229
September	0.96	212	236
October	1.02	226	251
November	1.02	226	251
December	1.29	285	317
85th Percentile	1.02	226	252

¹ Actual surveyed peak demand in July 2023.

The analysis indicates that the 85th percentile peak parking demand of the existing Stage 1 shopping centre is 226 cars based on the 2023 parking demand survey. The NSW RTA model estimate is 252 cars which indicates that the model estimate overstates the actual observed parking demand i.e. the model estimate is conservative in terms of estimating the peak parking demands of the existing centre. It is noted that the actual demand is 89.7% of the model estimate.

Therefore, use of the NSW RTA model to estimate the peak demand of the proposed Stage 1 and 2 shopping centre development is appropriate.

Table 5 below details the monthly variation in peak parking demands of the proposed Stage 1 and 2 shopping centre development based on the NSW RTA model estimate of the 85th percentile peak parking demand (626 cars) and the corresponding monthly variation in demand. Also detailed is the estimated peak demands accounting for the conservative nature of NSW RTA model i.e. the proposed developments peak demands being 89.7% of the NSW RTA estimates.

Table 5: Estimated Monthly Variations in Proposed Stage 1 & 2 Shopping Centre Peak Parking Demands

Month	Variation Factor	Estimated Peak Demands	NSW RTA Model Estimate
January	1.03	567	630
February	0.91	501	556
March	1.00	550	612
April	0.93	512	569
May	0.99	545	605
June	0.92	506	563
July	0.99	545	605
August	0.93	512	569
September	0.96	528	587
October	1.02	561	624
November	1.02	561	624
December	1.29	710	789
85th Percentile	1.02	563	626

From Table 5 above it is established that the 85th percentile peak parking demand of the proposed development, inclusive of the Stage 1 shopping centre, Caltex fuel station and BWS bottle shop, is 563 cars.

3.3 Proposed Car Parking Supply Adequacy

The overall proposed car parking supply, inclusive of the Stage 1 shopping centre, Caltex fuel station and BWS bottle shop, is 851 spaces as summarised in Table 6 below.

Table 6: Proposed Total Shopping Centre Car Parking Supply (including fuel station & bottle shop)

Parking Area	Number of Car Parking Spaces
Stage 1 and 2 Shopping Centre	817
Caltex fuel station	3
BWS bottle shop	31
Total	851

Based on the investigations and analysis detailed above the following conclusions are drawn:

- Performance Outcome PO1 of Council's *Servicing, Access and Parking Code* requires parking to be provided that satisfies the expected demand having regard to particular circumstances relevant to the development.

- The level of parking demand to be provided for is the 85th percentile peak parking demand.
- Based on the NSW RTA parking demand model, and adjusting for monthly variations and model conservatism, the estimated 85th percentile peak parking demand of the proposed Stage 1 and 2 development is 563 cars.
- The proposed total parking supply, inclusive of parking associated with the existing Stage 1 shopping centre, Caltex fuel station and BWS bottle shop, is 851 spaces which comfortably accommodates the design peak parking demand (85th percentile).
- The proposed parking supply therefore represents an appropriate supply that satisfies Performance Outcome PO1 in accordance with Logan City Council's Planning Scheme.

With regard to parking spaces for persons with a disability application of 1 space per 50 spaces rate to the Stage 1 and 2 shopping centre development (817 spaces total) equates to a requirement of 17 PWD spaces. A total of 17 PWD spaces are proposed.

3.4 Car Park Layout

The proposed parking area layout has been designed in accordance with AS/NZS2890.1:2004 and AS/NZS 2890.6:2022 which satisfies the planning scheme requirement.

The layout provides for effective distribution of pedestrian and vehicle traffic flows throughout the parking area and good legibility to maximise parking and circulation efficiencies.

Detailed design of the parking area is to be in accordance with the relevant standards and guidelines (e.g. MUTCD and AS/NZS2890.1:2004) including, but not limited to, the provision of adequate pedestrian crossing and vehicle priority-control treatments and incorporation of adequate vehicle speed control devices (e.g. raised pedestrian crossings and speed humps).

3.5 Electric Vehicle Charging Provisions

The total new car parking provision for Stage 2 is 522 spaces, including an estimated:

- 52 staff spaces (equating to 10%); and
- 470 customer spaces (equating to 90%).

The required EV space provisioning, in line with EDQ's previous advice for the current approval, is:

- 26 long-term spaces (50% of staff spaces); and
- 47 short-term spaces (10% of customer spaces).

- 73 total EV-ready spaces.

In line with the current development approval 20% of the EV-ready spaces should be provided with chargers and 80% being future capable (provision of electrical capacity, without chargers) equating to 15 spaces with chargers and 58 spaces being future capable.

4. Active Transport Site Access & Internal Circulation

As depicted on the development plans four new active transport site accesses are proposed including one to Teviot Road, one to Pub Lane midway between the existing and proposed vehicular site accesses, and two to Pub Lane adjacent to the proposed western vehicular site access.

A variety of new internal paths and associated crossings are proposed within the site to provide connectivity between all site accesses and each building on-site.

Detailed design of all facilities is to ensure compliance with all relevant standards.

5. Service Vehicle Arrangements

With the exception of the proposed fast food buildings adjacent Pub Lane, for which a designated service vehicle area is proposed for each building, all service vehicle activity is proposed to be restricted to the northern side of the development as per the currently approved development.

As indicated on the development plans, each major tenancy is provided with its own designated loading dock area. Additionally, there are ample locations for the provision of smaller loading bays associated with smaller specialty retail and office tenancies located within the overall centre and provision of refuse storage and collection areas.

The proposed loading bay provision is considered to be adequate and sufficient to accommodate the servicing demands of the development.

All vehicle access for the main northern loading areas is proposed to occur from the existing Teviot Road site access intersection.

The existing staff car parking area, located to the north of the existing Woolworths building, is proposed to be modified by removing existing parking along the northern site boundary to create an entry/exit service roadway to the proposed service area. The existing easement boundary immediately west of the existing car parking area is proposed to be realigned to accommodate this service roadway.

Suitable hardstand areas are proposed for the manoeuvring and turning requirements of the design vehicle (19m articulated vehicle) to minimise the need for reversing manoeuvres within the loading dock areas and to ensure entry and exit movements can occur in a forward direction.

As demonstrated in Colliers drawing number 21BRT0445-13 Revision A (**Attachment C**) the proposed concept design of the development accommodates the relevant design vehicles for the above-mentioned loading areas.

The proposed service vehicle provisions are adequate for each of the three proposed stages of expansion. All internal on-site design complies with *AS/NZS 2890.2:2002 Parking Facilities Part 2: Off-street commercial vehicle facilities*.

6. Traffic Impacts

The proposed development does not increase the approved gross floor area of that currently approved which would ordinarily indicate that traffic generation would remain the same. However, TTM's previous traffic impact assessment was based on development use floor areas that varied from that indicated in the proposed development plans.

Therefore, an updated traffic generation estimate has been undertaken. For consistency the potential traffic impacts have been assessed as per TTM's previous 2017 traffic engineering report as follows.

6.1 Estimated Development Traffic Generation

Consistent with the peak parking demand analysis, estimation of peak period traffic generation associated with the proposed expansion has been undertaken with reference to the NSW RTA's *Guide to Traffic Generating Developments* (2002). This document provides a traffic generation model which is used for the calculation of relative generation characteristics of different floor area types. This model is useful when determining estimated peak generation of shopping centres containing a variety of different floor area types which is the case for the proposed shopping centre. It is considered to be the most accurate method for generation estimation and has been extensively used by the traffic planning industry. Figure 2 below is the relevant extract from the RTA guide describing the model.

Thursday: $V(P) = 20 A(S) + 51 A(F) + 155 A(SM) + 46 A(SS) + 22 A(OM)$ (vehicle trips per 1000m²). Friday: $V(P) = 11 A(S) + 23 A(F) + 138 A(SM) + 56 A(SS) + 5 A(OM)$ (vehicle trips per 1000m²). Saturday: $PVT = 38 A(S) + 13 A(F) + 147 A(SM) + 107 A(SS)$ (vehicle trips per 1000m²).

Figure 2: Peak Traffic Generation Model (NSW RTA (2002))

Application of the above model results in the peak traffic generation estimates for the currently approved and proposed expansion as summarised in Table 7 below. As indicated, the proposed expansion is anticipated to result in less traffic generation in both peak hour periods than the currently approved expansion development.

Table 7: Estimated Peak Traffic Generation

Scenario	GLFA for varying floor types					Estimated Generation (vph)	
	A(S)	A(F)	A(SM)	A(SS)	A(OM)	Thurs PM	Sat Midday
Approved	2,610 m ²	1,356 m ²	8,011 m ²	4,420 m ²	2,938 m ²	937 vph	1,000 vph
Proposed	6,435 m ²	0	6,414 m ²	3,892 m ²	2,992 m ²	676 vph	823 vph

6.2 Impact Assessment

TTM's previous impact assessment considered the two existing site accesses (Teviot Road and Pub Lane) and the approved Pub Lane western site access (single lane roundabout). The analysis demonstrated that these access arrangements have sufficient spare capacity and acceptable performance measures.

Because the proposed extension development would result in lower traffic generation than that currently approved it is concluded that the traffic impacts of the proposed development are consistent with the findings of the previous traffic impact assessment and no changes to the existing and approved site access arrangements are required.

7. Pub Lane Western Site Access Intersection & Future Upgrade Provisions

The proposed western site access on Pub Lane should take the form of a single lane roundabout intersection as per the current development approval. Colliers drawing number 21BRT0445-11 Revision A (**Attachment D**) presents the concept design for the intersection.

Pub Lane is planned to be upgraded by Council to a 4-lane divided road the timing of which is unknown. The currently approved roundabout site access would ultimately take the form of a signalised intersection. Colliers drawing number 21BRT0445-12 Revision A (**Attachment D**) presents the concept design of a signalised intersection configuration and the ultimate 4-lane divided road configuration demonstrating that the proposed western site access can be integrated into the ultimate configuration.

The proposed new property boundary along the subject sites Pub Lane frontage, between the existing childcare centre and the railway overpass, as depicted on the proposed development plans reflects the new boundary alignment shown on the Colliers ultimate Pub Lane concept drawing. This new boundary is on a

nominal 6.0m alignment of the future kerb line which represents the minimum road reserve width required to accommodate the ultimate 4-lane road configuration.

8. Conclusion

From the assessment contained herein it is concluded that the proposed changes to the currently approved development are acceptable from a traffic engineering perspective and no changes are necessary to the current development approval conditions except for Condition 20A Electric Vehicle Readiness part a)(i) which should nominate 58 spaces to have 'electrical capacity' and 15 spaces to have chargers.

I trust the information provided herein is adequate for your purposes. Should you require any further information, please contact me by phone on (07) 3532 1389 or by email at David.Grummytt@colliers.com.

Yours sincerely,

A handwritten signature in black ink, appearing to read "D. Grummytt", is written over a light grey circular stamp.

David Grummytt

Director, Transportation | RPEQ (19356) MIEAust NER

Colliers International Engineering and Design (TTMC) Pty Ltd

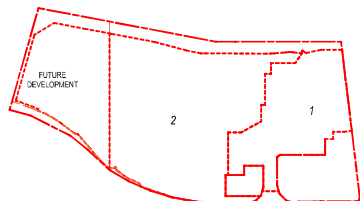
ATTACHMENTS:

- A. Currently Approved Development Plan
- B. Proposed Development Plans
- C. Vehicle Swept Path Analysis Drawing
- D. Pub Lane Site Access and Upgrade Concept Layout Plans



ATTACHMENT A:

Currently Approved Development Plan



STAGING KEY PLAN

AREAS:

NEW GFA DEVELOPMENT:

NEW GFA DEVELOPMENT:		Area (m ²)
	Stage 1	218
	Stage 2	13,804
		14,022 m²

DEVELOPMENT BREAKDOWN

	GLAR Area (m ²)	GFA Area (m ²)
Stage 1 TOTAL NEW GFA		
SHOPS	38	40
WW (LOUSE SPACE)	160	178
Stage 2		
F1 TENANCY	329	350
F2 TENANCY	427	450
F3 TENANCY	213	230
G1 TENANCIES	609	473
G2 TENANCIES	323	323
G3 TENANCIES	225	225
G4 TENANCIES	543	543
G5 TENANCIES	373	373
G6 TENANCIES	427	430
G7 TENANCIES	1,012	1,004
G8 TENANCIES	891	895
G9 TENANCIES	228	233
G10 TENANCIES	526	536
G11 TENANCIES	216	216
G12 TENANCIES	158	158
G13 TENANCY	1,356	1,361
G14 TENANCY	682	689
K (BDO)	105	117
L1 TENANCY	999	1,004
S1 TENANCY	4,110	4,148
	13,799 m²	14,022 m²

NOTE:

NOTE:
The total maximum GFA is 14,022sqm, comprising a combination of the following:

- Up to 11,000sqm GFA for retail/entertainment
- Up to 3,000sqm GFA for Commercial
- Up to 3,000sqm GFA for Community

PARKING:

PARKING RATES ARE CURRENTLY BASED ON CONCEPTUAL GFA'S AND ARE SUBJECT TO MINOR CHANGES TO ACCOMMODATE STRUCTURE AND SERVICES

PARKING SCHEDULE (OVERVIEW) (STAGE 2)

PARKING SCHEDULE (OVERVIEW) (STAGE 2)		
	PARKING LOCATION	COUNT
STAGE 1	Existing	SHOPPING CENTRE (WOOLWORTHS)
	New	WOOLWORTHS (DTB)
	Replace	SHOPPING CENTRE FRONT
STAGE 2	New	WESTERN CARPARK
	New	SOUTH CARPARK
	New	F3 TENANCY
	New	F2 TENANCY
	New	F1 TENANCY
	New	CLICK & COLLECT
		870

	AREA (M2)	ESTIMATED PARKING DEMAND RATE (per 100m2)	ESTIMATED NO CARS REQUIRED	NO CARS PROVIDED	PROVIDED PARKING RATE (per 100m2)
STAGE 1	5,753	4.40	253	289	5.02
STAGE 2	13,804	4.40	607	581	4.21
TOTAL	19,557		861	870	4.45

ELECTRIC VEHICLE CHARGING BAYS:

Reference Traffic Engineering document TTM_21BRT0445 LT04_01 (MCU Further Issues Response)

BICYCLE PARKING:

60

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL



Approval no: DEV2016/813

Date: 18/12/2023

COTTEEPARKER ϕ

BRISBANE
T 61 7 3846 7422
COTTRELL PARKER VICTORIA
ABA 17 210 024 966
COTTRELLPARKER.COM.AU



Received 12 October 2009; accepted 12 November 2009; first published online 12 May 2010

DA SUBMISSION

GREENBANK SHOPPING CENTRE

251 TEVIOT ROAD, GREENBANK
CLIENT - REGION GROUP

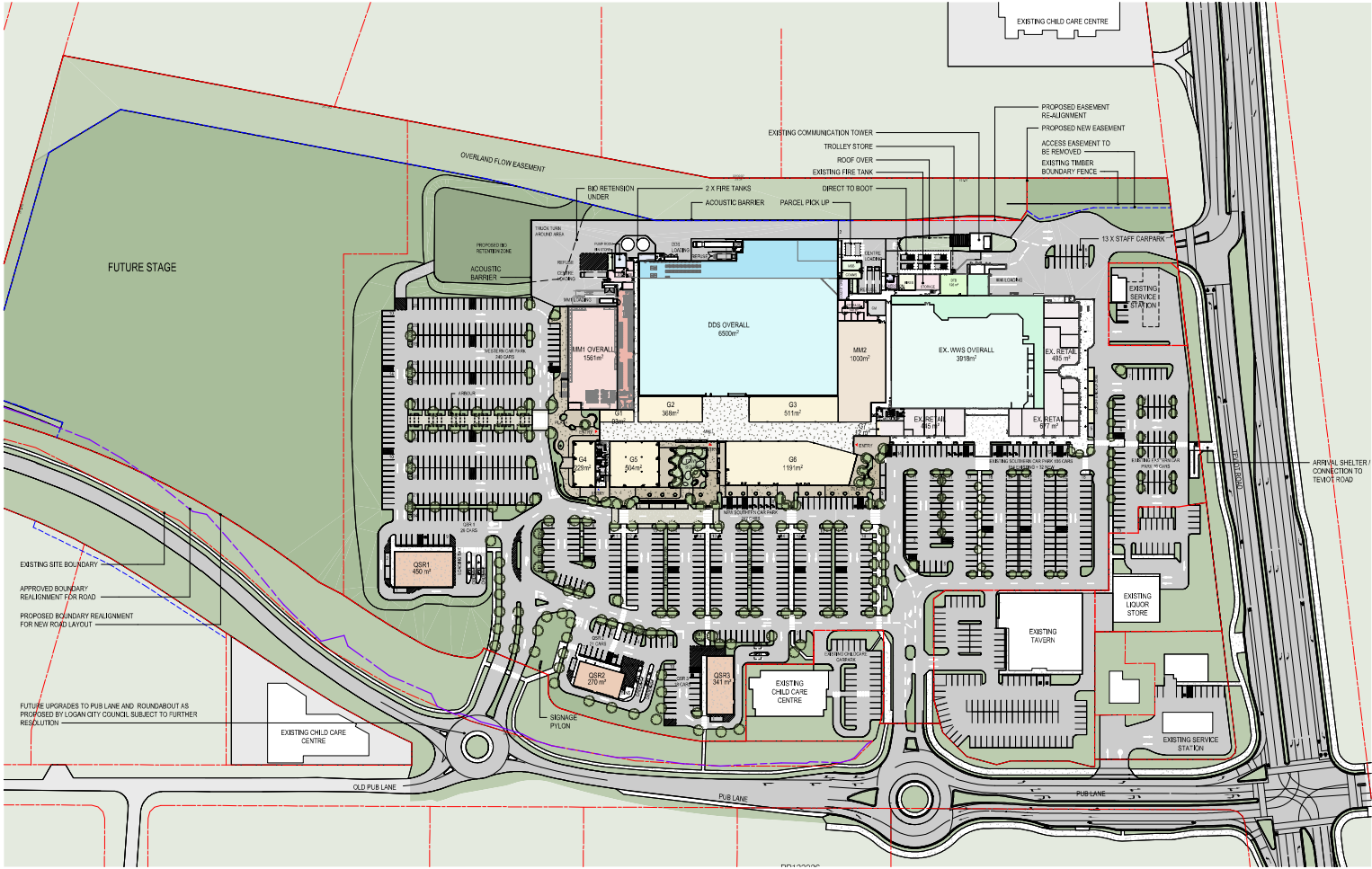
PROJECT SUMMARY (STAGE 2)

PROJECT SUMMARY (STAGE 2)					
DA 08 FOR APPROVAL	20/10/2023	NH	MC	MC	
ISSUE PURPOSE	DATE	D.	C.	A.	
STATUS					JOB No 6519
					DWG No SD0003
					ISSUE NO DA 06



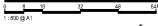
ATTACHMENT B:

Proposed Development Plan



COTTEEPARKER Φ

BRISBANE
11/11/2022
COTTEEPARKER.COM.AU



- GENERAL NOTES
1. Check and the decision of change in the DBS is for public use and the use of the DBS is for public use.
 2. Check and the decision of change in the DBS is for public use and the use of the DBS is for public use.

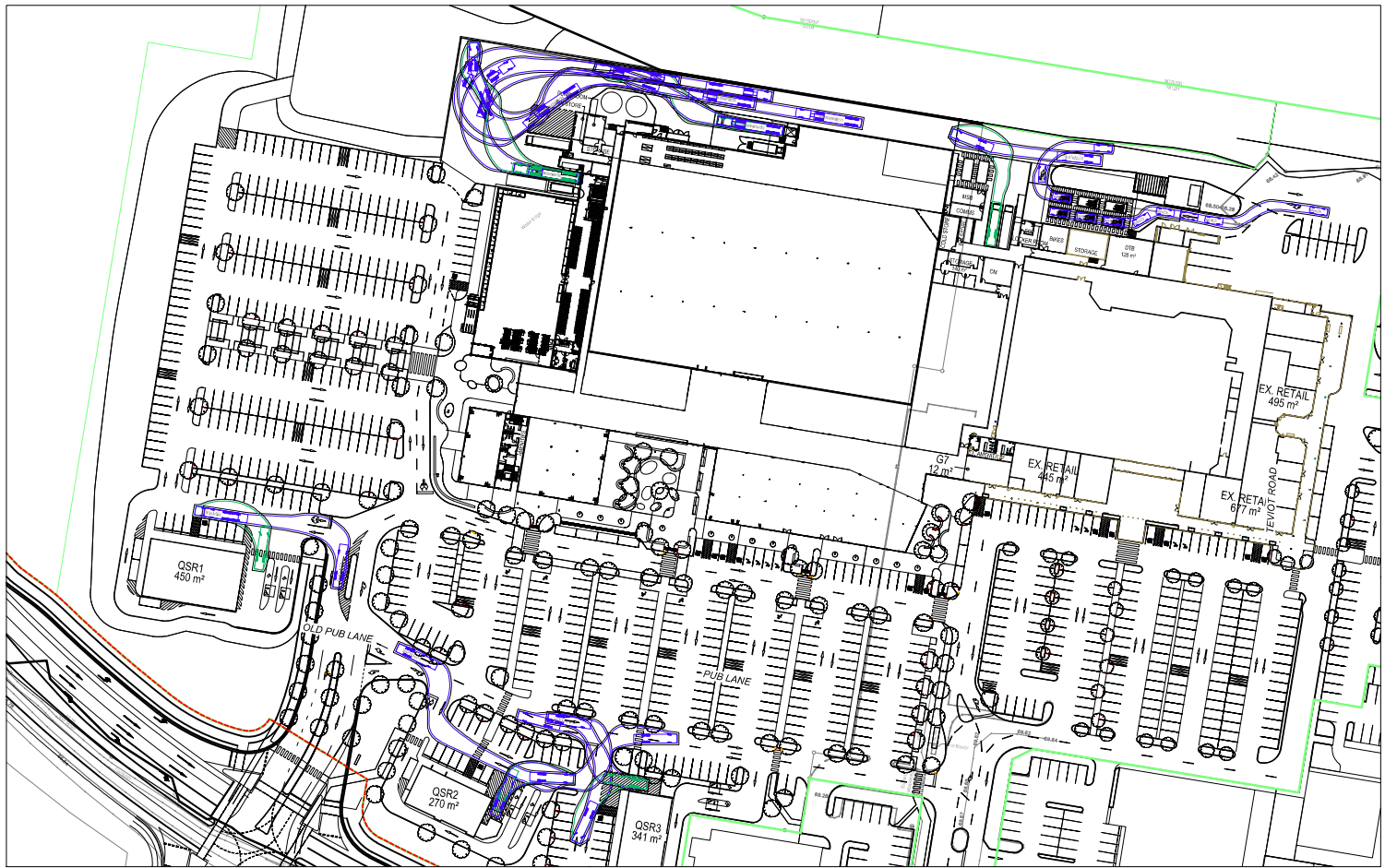
GREENBANK SC EXPANSION

201 TENANT ROAD, GREENBANK
CLIENT - REGION GROUP
SITE PLAN - GROUND
27007748
SD 1003
A



ATTACHMENT C:

Vehicle Swept Path Analysis Drawing



										SCALE 1:1000 AT ORIGINAL SIZE 010203040m		Colliers Colliers International Engineering & Design (TTMC) Pty Ltd ABN 65 010 868 621 LEVEL 8, 300 Ann Street, BRISBANE QLD 4000 P.O. BOX 12015, BRISBANE QLD 4002 T: (07) 3327 9500 F: (07) 3327 9501 E: ttmcbris@ttmcgroup.com.au W: www.ttmcgroup.com.au	PROJECT GREENBANK SHOPPING CENTRE - STAGE 2		PROJECT NUMBER 21BRT0445	ORIGINATOR A3
										NORTH			DRAWING TITLE VEHICLE SWEEP PATH ANALYSIS		DRAWING NUMBER 21BRT0445-13	REVISION A
										REGION GROUP			SERVICE VEHICLES		DATE 15 Sep 2025	SHEET 1 OF 1
A	11-09-25	ORIGINAL ISSUE		DS	ES	DS										
REV.	DATE		AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED										



ATTACHMENT D:

Pub Lane Site Access and Upgrade Concept Plans



