Appendix E

Traffic Report



CAMBRAY CONSULTING	
TRAFFIC ENGINEERING + TRANSPORT PLANNING	

12 Hercules Street, Hamilton DRAFT TRAFFIC IMPACT ASSESSMENT REPORT

Prepared for Leighton Properties 12 April 2022

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1.0 Introduction

Cambray Consulting Pty Ltd (Cambray) has been providing ongoing traffic and transport engineering advice to Leighton Properties in relation to a proposed Multi-Level Office development with Food and Drink uses on the ground floor, to be located at 12 Hercules Street, Hamilton. The proposed Multi-Level Office development is expected to complement the emerging community zoning in place.

This assessment involved:

- An assessment of the physical layout of the site from a traffic perspective, taking into consideration:
 - Vehicle access arrangements including sizing and location;
 - Carparking provision and layout, and on-site vehicle circulation arrangements;
 - o Servicing requirements and vehicle swept path analyses; and
- An assessment of the traffic impact of the proposed development upon the adjacent road network.

The results of the above analyses are outlined in the following sections.

1.1 Limits of Report

This report takes into account the particular instructions and requirements of our client. Cambray Consulting has taken due care in the preparation of this report, however it neither accepts liability nor responsibility whatsoever in respect of:

- Any use of this report by any third party;
- Any third party whose interests may be affected by any decision made regarding the contents of this report; and/or
- Any conclusion drawn resulting from omission or lack of full disclosure by the client, or the client's consultants.

1.2 Safety in Design

Within our scope of works, we have identified safety in design issues and potential hazards, whenever reasonably practicable within our field of expertise. Due to our limited and upfront role on this project, it is not considered reasonably practicable to identify all potential hazards which may occur throughout the life of a project, including during detailed design and construction activities. It is strongly recommended that safety in design issues be reviewed during all ensuing design and construction stages of the project.

1.3 Qualifications

This report was prepared by:

- Andrew Douglas, Director BE Civil (Hons), MSc Env Man, FIEAust, CPEng, RPEQ 6691; and
- John Dollisson, Senior Transport Engineer BE Civil.



2.0 Context

2.1 Site Location

The subject site is located within the Brisbane City Council (Council) local government area at 12 Hercules Street, Hamilton. The site is formally identified as Lot 2 on SP141869 and is referred to as Kingsford Smith Drive 2 (KSD2).

The Multi-Level Office development is located in relation to the surrounding road network as illustrated in **Figure 2.1.**



Figure 2.1. Site Location

©Nearmap 2022

2.2 Project Context

The development site is part of the Kingsford Smith Drive (KSD) development, which was approved in 2012. The development includes various land uses including residential, commercial, and food and drink outlets over two (2) distinct stages referred to as KSD1 (constructed) and KSD2 (proposed, **Figure 2.2**).

There are two (2) existing approvals over the KSD2 development site as summarised in Table 2.1.

Land Use	Report Submission	GFA	Notes
Office	2000	$11.746m^2$	Decreased to 11,503m ²
Office	2009	11,740111	in a 2012 letter of Addendum
Multi-unit	2014	224 units with a	Development comprised of 160 one-
residential	2014	GFA of 14,463m ²	bedroom units and 64 two-bedroom units

Table 2.1. Existing KSD2 development approvals



2.3 Surrounding Road Network

The key characteristics of the adjacent road network are summarised in **Table 2.2** and Illustrated in **Figure 2.2**.



Figure 2.2. Development Site

Table 2.2. Existing Road Network

Road	Jurisdiction	Hierarchy	Speed Limit
Hercules Street		Neighbourhood Road	
Harbour Road		Neighbourhood Road	
Northshore Way	Council	Neighbourhood Road	60km/hr
Remora Road		District / Neighbourhood Road	
Kingsford Smith Drive		Arterial Road	



3.0 Development Review

3.1 Overview

The development proposed land uses are summarised in **Table 3.1** and illustrated in **Figure 3.1**.

Table 3.1. Proposed Development Yi	elds
------------------------------------	------

Development Site	Yield (GFA)	Yield (NLA)
Office	14,849m ²	13,984m ²
Food and Drink	329m ²	287m ²
Total	15,178m ²	14,271 m ²



Figure 3.1. Proposed Development Plan (Ground Level)

3.2 Site Access Overview

3.2.1 External Access

Access to the KSD2 development is proposed to be gained via an internal entrance utilising the existing eastern KSD1 driveway crossover and is located circa 16m within in the property boundary.

There is an existing B1 Type driveway crossover located on Hercules Street approximately located 30m from the stop bar of Hercules Street and Northshore Way which will no longer be used to provide improved pedestrian access to Hercules Street.

The proposed driveway crossover and consolidated driveways are illustrated in Figure 3.2.





Figure 3.2. Proposed driveway crossover and consolidated driveways

3.2.2 Internal Access

Access into the KSD2 development from the common KSD1 eastern access, will be undertaken via two (2) internal ramps which access the lower basement parking and upper podium parking levels which is illustrated in **Figure 3.3**.



Figure 3.3. Internal access arrangement



4.0 Active and Public Transport Infrastructure

There are a number of transport facilities that have been improved in the vicinity of the development site since the original approval which address active and public transport network outcomes required for the Northshore Hamilton UDA. The following is a summary of the current level of active and public transport infrastructure in proximity to the proposed development site.

4.1 Public Transport

A review of public transport has been undertaken in the vicinity of the development which is summarized in **Table 4.1** and shown in **Figure 4.1**.

Service	Routes	Servicing	Approximate Weekday Frequency	Distance from Development
	300, Stop 19	Toombul to City	10-15 minutes peak 20 minutes off-peak	400m
302, Stop 29 Eagle Farm to City		20-30 minutes peak none off-peak	160m	
Bus	303, Stop 29	Pinkenba to Doomben	30-40 minutes peak none off-peak	160m
	305, Stop 19	Hamilton to City	15 minutes peak none off-peak	400m
*Ferry	Brett's Wharf Terminal	Brett's Wharf to UQ	20 minutes peak / off-peak	500m
Train	Ascot Station	Doomben Line 30 minutes peak / off-peak		1.5km

Table 4.1. Existing public transport route summary

*At the time of completion of this report, CityCat services had been suspended since the Brisbane floods of February 2022. Because of this, the ferry timetable frequency summarised in the above table is based on our historical data, as CityCat timetables are not publicly available for the time being until it is operational again.





Figure 4.1. Public Transport in relation to site

4.2 Active Transport

4.2.1 Pedestrian Access

The development proposed direct pedestrian access to the ground floor level opening to the fronting streets of Kingsford Smith Drive, Northshore Way and Hercules Street and internally via access crossing the internal development as shown in **Figure 4.2**.



Figure 4.2. Pedestrian connection to external network





4.2.2 Cycling Connectivity

The development is now attached to the greater Brisbane cycling network via the Lores Bonney Riverwalk which runs parallel to Kingsford Smith Drive, as illustrated in **Figure 4.3**.



Figure 4.3. Brisbane bikeways within the vicinity to the development site

Based on the above, public and active transport infrastructure is well connected to the external network and is considered adequate from a traffic engineering perspective.



5.0 Car Parking Provision

5.1 Overview

The development scheme proposes to include 170 car park spaces, allocated as follows:

- 170 car parking spaces;
- Four (4) Persons With Disability (PWD) with associated PWD shared zones; and
- Eight (8) Visitor Parking spaces.

The development resides within the Northshore Hamilton Urban Development Area (NHUDA). Car parking requirements are prescribed within the NHUDA Development Scheme and are summarised in **Table 5.1**.

Table 5.1. Car Parking Provision Review

Land Use	Long Term	Yield	Car Parking Required	Car parking Provided
Commercial (Office)	1 space per	14,849m ²	149	170
Retail (Food and Drink)	100m ² GFA	329m ²	4	170
	Total	15,178m ²	155	170

Based on the above, the developments provision of car parking spaces is in line with the Northshore Hamilton UDA Requirements for long term parking outcomes and therefore, is considered adequate from a transport engineering perspective.

5.2 Car Park Layout

The car park layout is to be provided over six (6) levels, which include:

- A basement level accessed via the south internal ramp which contains 39 car parking spaces, which include:
 - Eight (8) visitors (car parking spaces 1 to 8); and
 - Two (2) PWD spaces.
- Four (4) carparking spaces are re-located slightly within the ground floor KSD2 boundary to facilitate the south internal ramp access (see **Figure 5.1** and **Figure 5.2**). Importantly, the proposal does not reduce the accessible number of parking spaces in this area (there are 10 spaces accessible before and after the development);
- Four (4) levels of podium car parking are provided with the access via the north internal ramp neighbouring the loading dock, which includes;
 - 32 car parking spaces per podium level; and
 - Two (2) PWD spaces on podium level 1.





Figure 5.1. Existing situation: currently 10 parking bays



Figure 5.2. Ground floor plan extract

Source: Appendix A

5.3 Queue Provision

Queue provision at the eastern external driveway crossover of KSD1 was reviewed against the TAPS PSP to determine vehicle queue requirements based on the development's total car park provision of 170 spaces. The queueing provision is summarised in **Table 5.2**.

Internal Access	Parking Spaces	Capacity	Required Queue	Distance from KSD1 external access	Acceptable
South access	20	26 - 50	2 vobielos	~16m	
to basement level	59	parking spaces	2 venicies	(2 Vehicles Min.)	•
North access	121	100 - 151	Evobiolos	~52m	
to podium levels	121	parking spaces	5 vehicles	(8 Vehicles Min.)	•

In light of the above, the provision for queues is more than adequate to accommodate the anticipated demand wholly within the site boundary and sufficient such that the potential to disrupt traffic operations on Hercules Street is negligible.

5.4 PWD Parking Review

Council's TAPS PSP prescribes a parking rate of one (1) parking space marked for persons with a disability (PWD space) per 50 ordinary parking spaces. On this basis, four (4) PWD spaces are required. Therefore, the proposed development plan includes a minimum of four (4) PWD spaces and is therefore compliant with Council's TAPS PSP.

5.5 Bicycle Parking

In accordance with the Northshore Hamilton UDA, the bicycle parking requirements for the proposed development are summarised in **Table 5.3**.

Land Use	Yield	Employee Bicycle Parking	Required Bicycle Parking	Visitor Bicycle Parking	Required Bicycle Parking	Total Required Bicycle Parking
Non- Residential	14,271m ²	1 space / 200m ² of NLA	71.4	1 space / 1000m ² of NLA	14.3	86

Table 5.3. Transport Code bicycle parking provisions

Bicycle parking will be provided on basement level 1 which will be accessed via elevators on ground level. The area provided appears adequate to achieve the required bicycle parking for employees and visitors.

Further, an End Of Trip (EOT) facility will be located on basement level 1 which will provide lockers, showers and change facilities in accordance with AS2890.6.

The provision of bicycle parking is expected to meet the demands of the development.



5.6 Servicing Review

5.6.1 Number and Size of Loading Bays

The proposed KSD2 development plan (**Appendix A, Figure 5.3**) includes a single centralised loading area with provision for five (5) loading bays, including:

- Two (2) VAN bays;
- Two (2) Small Rigid Vehicle (SRV) bays; and
- One (1) Refuse Collection Vehicle (RCV) / Medium Rigid Vehicle (MRV) bay.

A previously approved scheme (**Figure 5.4**) for a slightly smaller development (see **Section 2.2** for further detail) required the provision of a single loading bay for the subject site. The single loading bay provision was supported by loading surveys undertaken at a similar development.

Table 2 and 4 of Brisbane City Council's (Council's) current Transport, Access, Parking and Servicing Planning Scheme Policy (TAPS PSP) indicates the maximum sized vehicle requiring a service bay for an office / dwelling development of the proposed size is an MRV. We note assessment against the current TAPS PSP is quite conservative as it is not references in EDQ's Northshore Hamilton UDA.

The subject proposal is therefore acceptable by way of reference to:

- The previously approved layout and associated assessment;
- The Transport, Access, On-site Parking and Servicing Section of the EDQ Northshore Hamilton UDA; and
- Brisbane City Council's Transport, Access, Parking and Servicing Planning Scheme Policy.,



Figure 5.3. Proposed five (5) loading bay



12 Hercules Street, Hamilton | Traffic Impact Assessment



Figure 5.4. Previously approved single loading bay

5.6.2 Swept Path Assessment

A swept path assessment has been completed and is provided in **Appendix B**. The assessment shows the design vehicles are able to:

- Access the site in a forward gear;
- Manoeuvre into position (to load / unload, wholly within the site boundary); and
- Depart the site in a forward gear.

In light of the above, the proposed swept path arrangement is considered to be safe, efficient and acceptable from a traffic engineering perspective.

5.6.3 Bin Store Adequacy

There are no waste generation rates published in the EDQ Northshore Hamilton Development Scheme or Brisbane City Council's Refuse Planning Scheme Policy. We have adopted waste generation rates from the City of Gold Coast Council's Solid Waste Management for this assessment, as summarized in **Table 5.** We understand that these rates have the potential to be conservative.



Land Use	General Waste	Recyclable Waste	Total Waste
Office	0.2 m ³ per 1000m ² of	0.3m ³ per 1000m ² of	0.5m ³ per 1000m ² of
Unice	floor area per day	floor area per day	floor area per day
Food and Drink	3 m ³ per 1000m ² of	2m ³ per 1000m ² of	5m ³ per 1000m ² of
Outlet (Café)	floor area per day	floor area per day	floor area per day

Table 5.4. Waste generation rates

An estimation of bin store requirements is summarised in Table 5..

Café	Office	Unit	Description	
329	14,849	m ²	Gross Floor Area	
3	0.2	m ³ /1000m ² /day	General Waste Generation Rate	
2	0.3	m ³ /1000m ² /day	Recycling Waste Generation Rate	
6	6	day/week	Waste Generation Days Per Week (weekends less intense than weekdays)	
5.9	17.8	m³/week	General Waste Generation Per Week	
3.9	26.7	m³/week	Recycling Waste Generation Per Week	
9.9	44.5	m ³ / week	Total Waste Generation Per Week	
3	3	collections/ week	Collection Frequency Per Week	
3.29	14.85	m ³ /collection	Waste Generation Per Collection	
1.1	1.1	m³/bin	Bin Size (1100L)	
2.99	13.50	bin/collection	Number of Bins	

Table 5.5. Bin store sizing calculations

Based on the above, the proposed development will require in the order of $16-17 \times 1,100L$ bins to be serviced per collection. This is based on three (3) collections per week.

Per the proposed development plan the loading area adequately accommodates 23 bins. The proposed loading area is therefore adequate from a waste storage perspective.



6.0 Geometry

The traffic elements of the site layout were reviewed against:

- Brisbane City Council's Transport, Access, Parking and Servicing Planning Scheme Policy (TAPSPSP);
- AS2890.1: Parking Facilities, Off-street Parking (AS2890.1); and
- AS2890.2: Parking Facilities, Off-street Commercial Vehicle Facilities (AS2890.2).

The results are summarised in Table 6.1.

Table 6.1 Geometric review

Parameter	Proposed	Requirement	Compliant
	Grading		
Crossover (Ground Level)	Flat at each internal ramping access	1:20 for the first 6m into the site	~
Internal Ramp	1:6 (max.)	1:5	\checkmark
Transitions (Max. Grade Change)	1:8 (max.)	1:8	\checkmark
General Parking Bay	Generally flat	1:16	\checkmark
PWD Parking Bay	Generally flat	1:40	\checkmark
	General Car Park Area		
Height Clearance (General car parking)	2.3m (min.)	2.3m	\checkmark
Height Clearance (PWD spaces / shared areas)	2.5m (min.)	2.5m	\checkmark
Bay Dimensions (Office - Employee)	2.4m x 5.4m	2.4m x 5.4m	\checkmark
Bay Dimensions (Visitor)	2.6m x 5.4m	2.6m x 5.4m	\checkmark
Bay Dimensions (PWD Parking Bay)	2.4m x 5.4m	2.4m x 5.4m	\checkmark
Bay Dimensions (PWD Shared Zone)	2.4m x 5.4m	2.4m x 5.4m	\checkmark
Aisle Width	6.2m	5.8m	\checkmark
End of Aisle Treatment	2.0m min.	2.0m	\checkmark
L	oading Bay / Service Area		
MRV Bay Dimensions	9.0m x 3.5m (min.)	9.0m x 3.5m	\checkmark
SRV Bay Dimensions	7.0m x 3.5m (min.)	7.0m x 3.5m	✓
Van Bay Dimensions	5.4m x 3.0m (min.)	5.4m x 3.0m	\checkmark
Height Clearance	4.5m (min.)	4.5m	\checkmark

The traffic elements listed in **Table 6.1** generally comply with the requirements of the Council's TAPS PSP and where applicable, AS2890.1, AS2890.2 and AS2890.6.



7.0 Traffic Impact Assessment

As noted in **Section 2.2** of this report, the development has two (2) existing approvals over the KSD2 development area which included an office development in the first instance.

Table 7.1 compares the previously approved KSD2 office development with the current proposed development case.

Table	7.1	Trip	Generation	Rates	for KSD2	office	develo	oment	case
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Land	Yield Proposal		Traffic Gener	ration Rates	Traffic Generation (Veh/H)	
Use			AM Peak	PM Peak	AM Peak	PM Peak
Office	11,746m ²	GTA 2009	1 Trip / 100m² GFA —		117.5	117.5
Unice	14,849m ²	Proposed			148.5	148.5
				Net Increase	31	31

We are of the opinion that the net increase in traffic demands, as a result of the proposed development, will be relatively minor and as such a detailed Traffic Impact Assessment (SIDRA) was not warranted in this instance.

Whilst a detailed Traffic Impact Assessment was not undertaken, we quantified the potential net increase in traffic demands which may occur as a result of the development over the existing and approved use.

A typical 'In' and 'Out' split was further adopted for the assessment and estimates are in Table 7.2.

Table 7.2 Adopted Directional Distribution

Land Lise	AM Split		PM Split		AM Traffic		PM Traffic	
	In	Out	In	Out	In	Out	In	Out
Office	80%	20%	20%	80%	25	6	6	25

Based on the RTA recommended trip rates, the proposed development is expected to generate in the order of 31 additional trips during weekday AM and PM peak periods, which equates to one (1) new trip every two (2) minutes.

This quantum of trips is considered negligible in the context of the broader road network. The proposed development is therefore expected to have minimal impact on the surrounding network.



8.0 Summary and Recommendations

The development intends to construct a Multi-Level Office development with Food and Drink uses on the ground floor which is consistent with the existing land uses. The site has been configured to allow access to light vehicles and for an SRV to load in within the property boundary. The key findings are summarised below:

- Access is gained form the existing eastern access of the KSD1 development;
- Access into the KSD2 development is undertaken from the shared easement within KSD1 via two (2) internal access ramps;
- Queueing provision complies with Council's TAPs PSP;
- The development is well connected to the external transport network via pedestrian access on all four (4) sides of the development, integration with an established bicycle network that encircles the KSD development and a public transport network which is within walking distance;
- The development proposes 170 car park spaces which achieves compliance with the Northshore Hamilton UDA; and
- The carpark layout complies with Council's TAPS PSP, AS2890.1, AS2890.2 and AS2890.6;
- The loading is accessed via a shared arrangement with KSD1 and provides an improved arrangement over the existing KSD approval; and
- The internal servicing arrangement has been configured to house sufficient bulk bins to cater for refuse for the development.

8.1 Traffic Impact Assessment

The proposed development is expected to generate in the order of 31 additional trips during weekday AM and PM peak periods over the existing development approval. The traffic generation equates to an additional one (1) new trip every two (2) minutes.

On this basis, the proposed development is expected to have a negligible traffic impact on the surrounding road network and is acceptable from a traffic impact viewpoint.



8.2 Recommendation

In light of the above, we recommend that the development be approved with reasonable and relevant conditions.

Please do not hesitate to contact the undersigned on 07 3221 3503 if you have any queries regarding the above.

Yours faithfully,

- of

Andrew Douglas Director | Cambray Consulting Pty Ltd BECivil (Hons) |MSc (Env Man) FIEAust | CPEng | RPEQ 6691

APPENDIX A

Development Plans Cox



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GROUND FLOOR







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APPENDIX B

Swept Path Assessment Cambray Consulting









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CAMBRAY CONSULTING PTY LTD

Suite 2601 | 21 Mary Street Brisbane QLD 4000 07 3221 3503 contact@cambray.com.au cambray.com.au