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<b>TECHNICA</b>	L MEMORANDUM						
		ROCKHAMPTON REGIONAL COUNCIL					
То:	Rockhampton Regional Council	APPROVED PLANS					
From	Chris Hewitt McMurtrie Consulting Engineers	These plans are approved subject to the current conditions of approval associated with					
Date:	04/11/2021	Development Permit No.: D/133-2021 Dated: 14 December 2021					
Project No:	0542122						
Re:	Traffic Assessment for Container Refund Facility – 15 Dooley Street, Park Avenue						

#### Introduction

McMurtrie Consulting Engineers (MCE) have been engaged by Debony (QLD) Pty Ltd, to provide traffic advice in relation to the development of a Containers for Change Facility located at 15 Dooley Street, Park Avenue QLD - Lot 5 on SP153339. The following assessment has been prepared in response to Council's request for further information. Specifically, the report addresses below item of the request dated 20 October 2021 (D/133/2021).

1. The application documentation states that the proposed development has the potential to add an additional 240 vehicle trips per day to the local street network. As such, please provide a Traffic Memo, prepared by a suitable qualified RPEQ Engineer, that addresses the impacts to the Haynes Street / Main St and Dooley Street / Glenmore Road intersections, and a safety audit of the access / egress locations associated with the development.

#### Advisory Comments:

The proposed after hours drop-off facilities is unlikely to be approved. Council has experienced issues at other similar facilities whereby bags of containers are left within the verge areas and present a risk to both Council and the general public.

#### Background

The subject site is located on the southern side of Dooley Street, approximately 130 metres east of the Dooley Street / Robison Street intersection (Figure 1). The proposal is located in a Medium impact industry zone and has an area of approximately 8,000m<sup>2</sup>. It is proposed that the existing building will be modified to suit the proposed use, allowing ingress to be gained at the eastern end of the Dooley Street frontage and egress at the western. It is proposed that separate access will be provided for staff and service trucks.

This assessment will quantify the volumes for both the development site and also the background traffic and provide capacity assessment and recommendation for any required upgrades to service any increase in traffic volumes above those which likely existed prior to commencing the current site uses.

Note that the previous site use was associated with light industry activities.

Figure 1 below shows the location of the subject site and Figure 2 shows the proposed plan of development.







Figure 1 – Site Location (Rock'e'plan Interactive Mapping)





Figure 2 – Proposed Site Layout

#### **Development Traffic Estimates**

The traffic generation of the proposal has been based on the Queensland statistics of other 'Containers for Change' facilities, with consideration of the population and location of the site within the catchment. It is estimated that up to 120,000 containers would be processed daily by a single facility for the current population of Rockhampton. Given that another facility is operating in the area, the site is expected to process up to 60,000 containers per day with an average of 500 containers per customer.

Based on the above, the proposal is estimated to generate up to 120 visitors, equating to a daily traffic demand of 240 trips. Adopting equal distribution over typical weekday operation (8 hours) results in an average arrival rate of 2.5 vehicles every 10 minutes. For the purposes of the analysis peak hour volumes have been based on the above assumptions resulting in a demand of 30 trips (ingress and egress) over a peak hour period.

Given that the proposal will occupy an existing use, which has operated in the area for a number of years, a sensitivity analysis has been carried out against the background traffic generation of such use. Based on a conservative (high) traffic generation estimate, the proposal is estimated to generate 10 additional trips during peak hour periods, as follows:

Component	Peak Hour Trip		Мо	rning Peak	Hour	Afternoon Peak Hour		
component	rate	USE Alea	In	Out	Total	In	Out	Total
Container Refund Facility (Proposed)	30 trips	-	15	15	30	15	15	30
Light Industry (Existing)	0.9 trips / 100m <sup>2</sup>	2,200m <sup>2</sup>	12	8	20	8	12	20
	+3	+7	+10	+7	+3	+10		

 Table 1 Development Traffic Generation Estimates (Sensitivity Analysis)

Distribution: Container Refund – AM&PM, 50/50

Light Industry – AM, 60/40, PM, 40/60

#### **Development Traffic Distribution**

The directional distribution assignment of traffic generated by the proposed development will be influenced by a number of factors, including the:

- Configuration of the road network in the immediate vicinity of the site;
- Existing operation of intersections providing access between the local and arterial road network;
- Distribution of residential use areas in the vicinity of the site.

Based on the above factors and the structure of the local road network, it is estimated that traffic will distribute evenly on Dooley Street when entering and exiting the site. The traffic distribution diagram for the overall traffic generated by the proposal is shown as **Attachment 1**, with the distribution estimates of the sensitivity assessment shown as **Attachment 2**.

#### **Road Network Impacts**

#### **Background Traffic Demand**

Background review of the local road network has been based on the traffic survey data provided by Council and the Rockhampton Traffic Study carried out by Arup in 2008. The Traffic Study identified a number of key upgrades in the local area including the upgrade of Glenmore Road and the section of Main Street between Knight Street and Haynes Street.

A summary of the relevant background traffic volumes is provided below, with detailed information provided as **Attachment 3** and **Attachment 4**.

- Main Street, Between Knight Street and Haynes Street:
- Main Street, between Lloyd Street and Renshaw Street:
- Glenmore Road, between Main Street and Highway Street:
- Glenmore Road, between Dooley Street and Moores Creek Road:
- Dooley Street (Haynes Street), between Park Street and Main Street:

7,200 AADT (2008) – Traffic Study (Estimate) 1,974 AADT (2020) – Council Survey Data 8,486 AADT (2019) – Council Survey Data 10,200 AADT (2016) – Traffic Study (Estimate) 1,663 AADT (2017) – Council Survey Data

#### **Traffic Impact**

As demonstrated as **Attachment 2**, the proposal is estimated to only generate a demand of one additional vehicle trip on the critical turning movements at the Main Street / Haynes Street (Dooley Street) intersection, and up to two movements at the Glenmore Road / Dooley Street intersection. Such is considered to be minor increase in turning demand and is not expected to impact on the safety or operation of either intersection. It is noted that the Main Street / Haynes Street (Dooley Street) is currently operating as a signalised intersection, whilst a channelised right turn treatment has been provided in recent years at the Glenmore Road / Dooley Street intersection.

Given the minor impact on any movement at both intersections, it is considered that the development will not result in adverse impact on the local road network and should not be required to contribute to any future upgrade cost of the Main Street / Haynes Street (Dooley Street) intersection or the Glenmore Road / Dooley Street intersection.

Access Arrangements

#### **Proposed Access Function**

It is proposed that the existing access points will be retained for the operation of the proposed development. It is intended that visitors will enter the site from the eastern end of the Dooley Street frontage and exit via a separate crossover at the western end of the frontage. A dedicated access point will be provided to the east of the visitor ingress driveway which will facilitate heavy vehicle movements and access to the staff car park.

It is proposed that appropriate signage will be provided at the entry to the site to clearly indicate the visitor ingress and egress points. To ensure that visitors do not enter the truck manoeuvring area, it is proposed that 'NO ENTRY – AUTHORISED VEHICLES EXCEPTED' signage be erected on both sides of the staff / service vehicle access. The sign will be placed just inside the boundary facing Dooley Street. Furthermore, a 'GIVE WAY' sign will be erected facing a driver exiting the staff / service vehicle access to ensure that priority is maintained for visitors entering the site via the adjacent crossover.

#### **Safety Review**

The proposal will replace the existing use, however will retain the access treatments currently servicing the site. As shown as Attachment 1, turning movements to and from the development will be relatively low, with ingress gained at the eastern end of the frontage and egress at the western. It is proposed that access to the site will be unrestricted, therefore allowing left and right turn movements from Dooley Street.

A turn warrants analysis has been carried out at the proposed ingress, based on the traffic generation estimates presented in Attachment 1, and the surveyed traffic demand on Dooley Street provided by Council between Park Street and Main Street. As shown in **Figure 3**, in accordance with Austroads, only basic turn treatments are warranted at the access. Such are accommodated in the existing carriageway and therefore no upgrade works are considered necessary to facilitate access to the site.



Figure 3 - Turn warrants assessment Dooley Street / Site Access (PEAK HOUR)

A safety review of the proposed crossover has been carried out given the proximity between the customer ingress and the staff / service vehicle driveway. It is noted that the facility will be operated by 5 x full time and 5 x casual employees, with up to 4 pick-up / deliveries per day. It is proposed that service trucks will not attend to the site during peak operating periods, and will enter the development via a separate crossover to the customer entry point.

The risks and mitigation treatments associated with the proposed access arrangements have been identified in Table 2. As shown, appropriate measures are proposed to be implemented to ensure the continued safe operation of the access points. Therefore, it is considered that the risk level in the adjacent road network will not increase as a result of the proposed development, and no other mitigation measures are required for safe operation of the site.



#### Table 2 Site Access Risk Analysis

Risk Item		Without Development			With elopn	nent	Mitigation Measures	dev & n	With elopm nitigat	nent tion
	Likelihood*	Consequence*	Risk score*	Likelihood*	Consequence*	Risk score*		Likelihood*	Consequence*	Risk score*
Rear end collision due to delay caused by right turn traffic into the site	2	2	L	3	2	М	Appropriate signage provided at the entry to avoid confusion for visitors.	2	2	L
Rear end collision due to confusion between vehicles exiting staff / service vehicle driveway and customer ingress.	2	2	L	3	2	Μ	Internal arrangements ensure that a driver exiting the staff / service vehicle access give way to incoming vehicles.	2	2	L
Heavy vehicle standing on Dooley Street to turn into the site.	2	2	L	2	2	L	Heavy vehicles are proposed to access the site outside of peak operating periods.	1	2	L

\*Refer to below risk score matrix (GTIA, Figure 9.3.2(a)) – See below.

Figure 9.3.2(a) – Safety risk score matrix

		Potential consequence								
		Property only (1)	Minor injury (2)	Medical treatment (3)	Hospitalisation (4)	Fatality (5)				
ъ	Almost certain (5)	М	М	н	н	н				
Potential likelihooc	Likely (4)	М	М	М	н	н				
	Moderate (3)	L	М	М	М	н				
	Unlikely (2)	L	L	М	М	М				
	Rare (1)	L	L	L	М	М				
L: Low risk M: Mediu H: High ris	c m risk sk									

Please contact the undersigned in relation to the above information.

Yours sincerely

UCA

Chris Hewitt Principal Civil Engineer RPEQ NO. 5141

ATTACHMENT 1 – DEVELOPMENT TRAFFIC DISTRUBUTION ESTIMATE (OVERALL) ATTACHMENT 2 – TRAFFIC DISTRIBUTION ESTIMATES (SENSITIVITY) ATTACHMENT 3 – BACKGROUND TRAFFIC ESTIMATES (ARUP, TRAFFIC STUDY 2008) ATTACHMENT 4 – TRAFFIC SURVEY DATA (ROCKHAMPTON COUNCIL)

## ATTACHMENT 1 – DEVELOPMENT TRAFFIC DISTRIBUTION ESTIMATES (OVERALL)



Development Traffic Estimates Peak Hour (Morning / Afternoon)

#### ATTACHMENT 2 – TRAFFIC DISTRIBUTION ESTIMATES (SENSITIVITY)



SENSITIVITY ANALYSIS Development Traffic Estimates Morning Peak Hour



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#### ATTACHMENT 3 – BACKGROUND TRAFFIC ESTIMATES (ARUP, ROCKHAMPTON TRAFFIC STUDY 2008)

#### 2008 Transport Model Study (Surveyed Volumes)

Table 21 – Base Year Network Hierarchic Deficiencies								
Road Section	Hierarchy Classification	Hierarchic Desired Maximum Daily Flow	Daily Flow					
High Street between Musgrave St and Ford St	Urban Sub-arterial	< 10,000 vpd	14,100 vpd					
Kerrigan Street between Moores Creek Rd and Dean St	Urban sub-arterial	< 10,000 vpd	11,000 – 13,600 vpd					
Elphinstone Street between Musgrave St and Nobbs St	Urban sub-arterial	< 10,000 vpd	11,100 – 11,300 vpd					
Fitzroy Street between George St and Canning St	Urban sub-arterial	< 10,000 vpd	11,700 – 13,000 vpd					
Canning Street between Fitzroy St and Upper Dawson Rd	Urban sub-arterial	< 10,000 vpd	10,500 – 11,700 vpd					
Upper Dawson Road between Caroline St and Church St	Urban sub-arterial	< 10,000 vpd	10,100 – 13,200 vpd					
Lion Creek Road between North St and Albert St	Urban sub-arterial	< 10,000 vpd	10,400 vpd					
Albert Street between George St and Talford St	Major urban collector	< 6,000 vpd	6,000 – 6,300 vpd					
Main Street between Knight St and Haynes St	Major Urban Collector	< 6,000 vpd	7,200 vpd					
Bolsover St between Stanley St and Francis St	Minor urban collector	< 3,000 vpd	3800 – 4,200 vpd					
Lion Creek Road between Hall St and Exhibition St	Minor urban collector	< 3,000 vpd	4,800 vpd					
Carlton Street between Hammond St and Yaamba Rd	Minor urban collector	< 3,000 vpd	3,600 vpd					
Haynes Street between Glenmore Rd and Main St	Minor urban collector	< 3,000 vpd	3,600 – 8,900 vpd					
Knight Street between Main St and Moores Creek Rd	Minor urban collector	< 3,000 vpd	3,400 – 4,400 vpd					
East Street between Archer St and Derby St	Minor urban collector	< 3,000 vpd	3,300 – 3,900 vpd					
Agnes Street between North St and Denham St	Minor urban collector	< 3,000 vpd	3,600 – 4,900 vpd					

#### 2008 Transport Model Study (Traffic Volume Projections)

Location	2005	2011		2016		2021	
	Estimated	Forecast	% Change from 2005	Forecast	% Change from 2005	Forecast	% Change from 2005
Moores Creek Screenline	2						
Norman Road	10,760	11,120	3%	11,370	6%	11,640	8%
Kerrigan Street	13,480	13,980	4%	14,010	4%	14,160	5%
Musgrave Street	21,590	24,110	12%	24,780	15%	25,560	18%
High Street	20,460	22,130	8%	22,460	10%	22,660	11%
Glenmore Road	10,260	10,440	2%	10,850	6%	11,410	11%
Total	76,550	81,780	7%	83,470	9%	85,430	12%
Bruce Highway (North) S	creenline						
Carlton Street	3,120	1,500	-52%	1,580	-49%	1,660	-47%
Farm Street	7,420	7,610	3%	8,110	9%	8,280	12%
Richardson Road	10,660	12,840	20%	12,030	13%	11,700	10%
Sheehy Street	-	1,180	-	1,010	-	1,020	-
Main Street	3,960	5,820	47%	5,660	43%	5,690	44%
Alexandra Street	16,380	16,920	3%	17,320	6%	17,540	7%
Knight St Street	4,350	4,460	3%	4,450	2%	4,860	12%
Glenmore Road	9,540	9,700	2%	10,190	7%	10,760	13%
Total	55,430	60,030	8%	60,350	9%	61,510	11%
Bruce Highway (South) \$	Screenline						
Lion Creek Road	8,460	9,090	7%	9,410	11%	9,980	18%
North Street	4,970	6,440	30%	6,570	32%	6,980	40%
Campbell Street	4,940	3,870	-22%	3,950	-20%	3,840	-22%
George Street	2,360	2,400	2%	2,360	0%	2,320	-2%
Albert Street	6,100	6,490	6%	6,160	1%	6,000	-2%

#### Table 29 – Traffic Growth Across Key Screenlines City Plan Scenario (Do Minimum)

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#### 2008 Transport Model Study (Recommended Improvement Works)

#### 9.1.5 **Do Minimum Hierarchic Road Network Deficiencies**

The hierarchic deficiencies identified through the traffic modelling work are shown on Figure 20 (2011), Figure 21 (2016) and Figure 22 (2021). The elements of the road network that were forecast to have daily flows above the desired maximum flow are detailed in Table 31.

Road Section	Hierarchy	Hierarchic	Daily Flow
	Classification	Maximum Daily Flow	
2011			
High Street between Berserker St and Dean St	Urban Sub-arterial	< 10,000 vpd	10,100 – 10,300 vpd
Berserker St between Elphinstone St and High St	Major urban collector	< 6,000 vpd	6200 – 6400 vpd
Elphinstone St between Craig St and Shephard St	Major urban collector	< 6,000 vpd	6400 vpd
North St between Campbell St and Alma St	Major urban collector	< 6,000 vpd	6100 – 6400 vpd
Denham St between Canning St and Murray St	Major urban collector	< 6,000 vpd	5600 – 5700 vpd
Bolsover St between Francis St and Wood St	Minor urban collector	< 3,000 vpd	3200 – 3300 vpd
2016			
Glenmore Road between Dooley St and Moores Creek	Urban Sub-arterial	< 10,000 vpd	10200 – 10900 vpd
Bridge St between Moores Creek and Ashney St	Urban Sub-arterial	< 10,000 vpd	10,300 – 10,900 vpd
Elphinstone St between Craig	Major urban	< 6000 vpd	6500 - 6600

St and Thozet St collector vpa Major urban Archer St between George St 7,200 - 8,600 < 6000 vpd and Talford Sr collector vpd Alexandra St between Birbeck Minor urban < 3000 vpd 3,200 vpd Dr and Johnson St collector



## ATTACHMENT 4 – TRAFFIC SURVEY DATA (ROCKHAMPTON REGIONAL COUNCIL)

Street	PS_ID	Link_Start	Link_End	Location_Description	Start_Date	End_Date	COUNT_Year
Haynes St	003151A	Park Street	Main Street	Opposite 6 Haynes Street	17/01/2017	3/02/2017	2017
Main St	004351G	Lloyd St	Reinshaw St	Opposite 15 Main Street	27/11/2020	4/12/2020	2020
Glenmore Rd	002691G	Main Street	Highway St	Opposite 118 Glenmore Road	16/08/2019	30/08/2019	2019
Haynes St	003151C	Bourke Street	Glenmore Road	Opposite 54 Haynes Street	17/01/2017	3/02/2017	2017

#### CONTINUED (below)

Street	PS_ID	COUNT_Year	AADT_B	Percentage_Comm_B	Posted_Speed_Limit	AM_Peak	AM_Peak_Volume	PM_Peak	PM_Peak_Volume
Haynes St	003151A	2017	1662.5	12.39	50	0800 - 0900	152.0	1500 - 1600	165.6
Main St	004351G	2020	1973.5	7.60	60	0800 - 0900	154.3	1500 - 1600	203.9
Glenmore Rd	002691G	2019	8485.6	8.00	60	0800 - 0900	746.7	1500 - 1600	778.7
Haynes St	003151C	2017	3653.4	9.18	50	0800 - 0900	299.3	1500 - 1600	322.5



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OUR AFFILIATIONS







Consultancy Services Contract: BUS 226-0212





#### **IMPORTANT NOTE**

This plan was prepared to accompany a Material Change of Use application to Rockhampton Regional Council and should not be used for any other purpose.

The dimensions and areas shown hereon are subject to field survey and also to the requirements of council and any other authority which may have requirements under any relevant legislation.

In particular, no reliance should be placed on the information on this plan for any financial dealings involving the land.

This note is an integral part of this plan.

# Debony (QLD) Pty Ltd A.C.N. 113 021 079

project

sheet no.

client

# 15 Dooley Street, Park Avenue

<sup>plan of</sup> Material Change of Use for Utility Installation (Container Refund Facility) Site Plan

Lot 5 on SP153339

## **Rockhampton Regional Council**

issue	date	details	authorised				
А	19-10-2021	Initial Issue	RJKF				
-	-	-	-				
create	ed						



cad file

8307-01-MCU-A Α