

drawing title:	
LOCATION	PLAN

1	project: <u>A3 DR</u>	AWING NOTED SCALES RELATE TO A3 DRAWINGS		REVISIONS	
	DEVELOPMENT APPLICATION		REVISIO N 12 13	DESCRIPTION PRELIMINARY PRELIMINARY	DATE 20/11/2020 22/12/2020
	location: 334 LEICHARDT STREET, ROCKHAMPTON, QUEENSLAND	client: KB WASTE GROUP PTY LTD	14	PRELIMINARY PRELIMINARY	27/01/202 03/03/202









LEICHHARDT STREET ELEVATION (CONCEPT)

S C A L E: 1 : 200



MAIN SIGN ELEVATION

S C A L E: 1 : 100

drawing title:	project: A3	DRAWINGNOTED SCALES RELATE TO A3 DRAWINGS		REVISIONS		PRELIMINARY SKETCH PLANS: If the drawings are labelled and issued 'preliminary' below, they are not
	DEVELOPMENT APPLICATIC	N	REVISIO	DESCRIPTION	DATE	suitable for Building Application, tender or construction purposes! The intent of preliminary sketch plans are only for presenting the concept for
ELEVATION	DEVELOT MENT ATTEICATIC	11	11	PRELIMINARY	16/11/2020	the specific project to the client as nominated in the title sheet.
			12	PRELIMINARY	20/11/2020	COPYRIGHT & LIABILITY: These drawings, concepts and designs are convrighted and the property of
	1	-1:4	- 13	PRELIMINARY	22/12/2020	designandarchitecture and not to be used for any other reason without the
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drawing no: SK 005	334 LEICHARDT STREET, ROCKHAMPTON, OUEENSLAND	KB WASTE GROUP PTY LTD	15	PRELIMINARY	03/03/2021	design+architecture accept no responsibility for the accurary, completeness of electronically transferred documents.
$\mathbf{SK} = \mathbf{V} \mathbf{V} \mathbf{S}$	······					NEVER SCALE OF DRAWINGS, IF IN DOUBT, ASK!





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TECHNICAL MEMORANDUM

То:	Gideon Genade – Gideon Town Planning
From	Chris Hewitt McMurtrie Consulting Engineers
Date:	13/01/2021
Project No:	0381819
Re:	Traffic Assessment for Kanga Bins site – 334 Leichhardt Street, Parkhurst

Introduction

McMurtrie Consulting Engineers (MCE) have been engaged by PJ and AM McCasker, trading as Kanga Bins, to provide traffic advice in relation to the development of a Containers for Change Facility located at 334 Leichhardt Street, Parkhurst QLD - Lot 28 CP849910. This version of the Traffic Assessment is an update on the previous assessment from October 2019 with the general waste transfer and skip bin hire parts of the business now proposed for another site.

Background

Kanga Bins currently operates a container refund scheme service from the site at 334 Leichhardt Street, Parkhurst QLD - Lot 28 CP849910.

This assessment will quantify the volumes for both the development site and also the background traffic and provide capacity checks 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 a caravan and trailer repair business and a esidential use.

Figure 1 below shows the location of the Leichhardt Street site and Figure 2 shows the proposed site layout.

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/43-2019 Dated: 29 April 2021





Figure 1 – Site Location



Figure 2 – Proposed Site Layout

JOB REF: 0381819



Site Inspection

A site inspection was carried out in September 2019 and the following photographs recorded.



Figure 3 – Proposed access point from site to Sturt St.



Figure 4 - Site Frontage to Leichhardt St. to the North

Figure 5 - Site Frontage to Leichhardt St. to the South



We have also included a Google Earth image below that shows the site frontage under the previous caravan and trailer repair use which presumably generated a proportionate level of traffic with no real frontage access arrangement in that vehicles accessed to and from the road in an ad hoc or uncontrolled manner.



Figure 6 - Site Frontage to Leichhardt St. previous use

Proposed Site Accesses and Swept Paths

The new proposed site access arrangement seeks to rationalise and control site access to specified locations. All site ingress is proposed from Sturt Street away from the Leichhardt Street frontage and separate site egresses have been provided for heavy and light vehicles.

A swept path assessment has been carried out and is appended as **Attachment 1** and illustrates proposed site operations with predominantly passenger or utility vehicles accessing the site for container dropoff in the drive through area with containers loaded off site via 12.5m heavy rigid vehicle.

Access visibility at both of these locations is satisfactory, in excess of 200m in both directions, comfortably exceeding Safe Intersection Sight Distance (SISD) for 60kph in accordance with Austroads Standards.

Given the satisfactory access visibility it is presumed that Council will require frontage works in the form of sealed pavement widening and kerb and channel across the development frontages with both Leichhardt Street and Sturt Street including standard crossovers for site ingresses/egresses in accordance with standard drawing CMDG-R-042.

Car Parking

As per **Figure 2**, direct access from Sturt Street is proposed for visitor and staff parking (12 car parks in total). Additionally, visitors may park in the internal drop off driveway (an additional 4 parks) and it is intended that the drop off driveway will be constructed to a suitable width (3 lanes wide) to permit a through vehicle to pass a parked vehicle if necessary. Based on anecdotal evidence showing a total of 16 staff/visitor vehicles parked onsite this should be a sufficient car parking supply to cater for day to day use.

The applicant has advised that a total of 9 vehicle spaces are required onsite for staff car parking. Direct site access is proposed to Sturt Street for staff parking (9 car parks) with the remaining 3 parking spaces available for visitors. Any staff overflow parking can be accommodated within Sturt Street as the development site is currently the only user of this section of Sturt Street.

The new site layout has likely increased the previous use volumes utilising the Sturt Street intersection and Sturt Street itself. As such it would be reasonable for Council to condition some upgrade and sealing of the intersection of this local access road.

Development Traffic

The applicant has advised that the implementation of the container buy back scheme has seen an increase in customer traffic volumes attending the site. Council's previous observations of up to 48 vph attending site would be considered on the high side however this figure will be utilized in this case to be conservative. Traffic counts of the adjacent intersection of Johnson Street and Leichhardt Street have also been undertaken and are attached as **Attachment 2**.

Table 1 thus summaries peak hour development traffic.

Table 1		
Access Location and Usage	Vehicle Type	Peak volume (vph)
Leichhardt St/Sturt St intersection customer car park and dropoff area for container exchange service	Car or passenger vehicle	50 vph
Leichhardt St/Sturt St intersection for bulk container pickup	12.5m rigid truck	3 vph

There are no prior traffic volumes available for Leichhardt Street but given the use is adjacent to other light industrial uses along Leichhardt Street there is unlikely to be any resultant traffic issues due to the new site use.

Background Traffic

An intersection count of the Johnson Street/Leichhardt Street junction was carried out on Tuesday 8 October 2019 during the morning and afternoon peaks. This count data is attached in **Attachment 2** and summarised in **Figures 7 and 8** below. As there are no previous traffic counts available it is not possible to ascertain whether the 5% impact threshold has been reached when taking into account the previous site use and its traffic generation rates. As such an assessment will be undertaken to provide evidence of sufficient spare capacity to accommodate the proposed new use.



Figure 7 – Johnson Street/Leichhardt St AM Peak





Intersection Capacity Assessment

At low volumes, capacity analysis is usually not warranted as a general guideline, as shown below in **Table 3** extracted from the Austroads Guide to Traffic Engineering Part 6: Intersections, Interchanges and Crossings (2007, Table 2.4) is sighted as an acceptable "rule of thumb". This table is used as a general guide only however the volumes are well less than the table would suggest is necessary for further analysis.

Table 3:

Major road type ¹	Major road flow (vph) ²	Minor road flow (vph) ³
	400	250
Two-lane	500	200
	600	100
	1000	100
Four-lane	1500	50
	2000	25

Nevertheless, to give Council some comfort we have provided further justification in relation to intersection capacity for the Johnson Street/Leichhardt Street intersection and the Leichhardt Street/Sturt Street intersection.

For the Johnson Street/Leichhardt Street intersection as can be seen in **Figures 7 and 8** – Johnson Street north-east carries very little traffic and has no real impact on the functioning of the intersection – for convenience, we have therefore carried out an assessment for the critical right turn movement as a 'T' intersection in accordance with Figure 4A-1- Warrants – major road turn treatments – Normal Design Standard of the DTMR Planning and Design Manual for both the am and pm peak hours.

Conservatively, we have assumed a 2% compound growth rate, for 10 years (which is unlikely to be realised in this closed catchment area) for through volumes and also added the entire 53 vph peak development traffic as right turn volumes into Leichhardt Street towards the development site even though these volumes would already be deemed to be included in the peak hour count data.

These volumes and scenarios are outlined below in Figure 9 adopting a 10 year growth period.



From Figure 9 the worst case scenario is the PM peak and in accordance with Figure 4A-1- Warrants – major road turn treatments – Normal Design Standard of the DTMR Planning and Design Manual (shown in Figure 10 below) the intersection still operates as a BAR/BAL even with the ultra-conservative volumes adopted. As such the existing intersection layout is sufficient to cater for the proposed development use.



Figure 10 - Turn warrants assessment Johnson Street/Leichhardt St

For the Leichhardt Street/Sturt Street intersection utilising the same analogy as above we have derived the following traffic volumes as per **Figure 11** adopting a 10 year growth period.



Figure 11 – Leichhardt Street/Sturt St AM/PM Peak plus development

From **Figure 11** and in accordance with Figure 4A-1- Warrants – major road turn treatments – Normal Design Standard of the DTMR Planning and Design Manual (shown in **Figure 10** below) the intersection still operates as a BAR/BAL even with the ultra-conservative volumes adopted. As such the existing intersection layout should be upgraded and sealed to provide a BAR/BAL intersection with Sturt Street upgraded and sealed to CMDG standard to cater for the largest design vehicle as per the attached swept paths in **Attachment 1**.



Figure 12 - Turn warrants assessment Leichhardt St/Sturt St

Yours sincerely

Chris Hewitt Principal Civil Engineer RPEQ NO. 5141



ATTACHMENT 1 – SWEPT PATHS ATTACHMENT 2 – JOHNSON ST/LEICHHARDT ST INTERSECTION COUNTS



ATTACHMENT 1 – SWEPT PATHS





ATTACHMENT 2 – JOHNSON ST/LEICHHARDT ST INTERSECTION COUNTS

INTERSECTION COUNT



west

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6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	8	3	11	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0
7:00 AM	0	0	0	0	0	0	0	0	5	6	11	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	2	3	0
7:15 AM	0	0	0	0	0	0	0	0	9	2	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	0	1	0	12	5	17	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	0	2	2	4	0
7:45 AM	0	0	0	0	0	0	0	0	7	5	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	5	0
8:00 AM	0	0	0	0	0	0	0	0	8	5	13	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	8	9	17	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0
8:30 AM	0	0	0	0	0	0	0	0	8	3	11	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	2	1	3	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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3:30 PM	0	0	0	0	0	0	0	0	25	5	30	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	1	0	4	0	4	0
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4:00 PM	0	0	0	0	0	0	0	0	23	4	27	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	0
4:15 PM	0	0	0	0	0	0	0	0	16	8	24	0	1	0	1	0	0	0	0	0	2	1	3	0	0	0	0	0	3	0	3	0
4:30 PM	0	0	0	0	2	0	2	0	9	6	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Page 1 of 2

INTERSECTION COUNT

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6:45 AM	0	0	0	0	0	0	0	0	19	9	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	12	4	16	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	3	0	3	0	7	1	8	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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3:45 PM	0	0	0	0	0	0	0	0	13	7	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	4	2	6	0	14	5	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	6	3	9	0	16	8	24	0	0	2	2	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	3	0	3	0	12	2	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 hr Total	0	0	0	0	18	2	23	0	70	26	96	0	0	2	N	0	0	0	0	0	0	0	0	0	3	0	e	0	ю	0	ю	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Peak	0	0	0	0	13	5	18	0	54	24	78	0	0	2	N	0	0	0	0	0	0	0	0	0	3	0	3	0	ĸ	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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334 LEICHHARDT STREET, PARKHURST

Prepared for:

Kanga Bins

PROJECT NUMBER 0381819

JANUARY 2021

REVISION R1V1

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/43-2019

Dated: 29 April 2021

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334 LEICHHARDT STREET, PARKHURST STORMWATER MANAGEMENT PLAN

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1.0 INTRODUCTION

McMurtrie Consulting Engineers (MCE) have been engaged by PJ and AM McCasker, trading as Kanga Bins, to prepare a Stormwater Management Plan (SMP) for the proposed development of 334 Leichhardt Street, Parkhurst (Lot 28 CP849910) (the site).

As shown on Figure 1, the site is situated within a small overland flow tributary of the lower Limestone Creek catchment.

1.1 EXISTING SITE

The site has an area of 6,292 m² with elevations between 14.3 mAHD and 10.5 mAHD. The site generally falls from Leichhardt Street towards Gregory Street to an existing depression within the site, as shown on Figure 2.

The site was formerly a caravan and trailer repair business with on-site residential and is currently operated as a container refund scheme centre. The existing site has several building structures, with gravel hardstand and sparse vegetation.

The rear (north-east) part of the site is mapped as flood affected by Limestone Creek local creek flooding. The site unaffected by Fitzroy River flooding. The existing structures and hardstand operating areas are situated outside of this mapped flood extent.

1.2 PROPOSED DEVELOPMENT

The proposed development includes a new proposed industrial shed, with formalised carparking and internal access driveways along with new site access from both Sturt and Leichhardt Streets, with separated access for light and heavy vehicles, as shown on Figure 3.

The new building and internal access are located entirely outside of the Limestone Creek flood overlay mapping.

2.0 HYDROLOGIC ASSESSMENT

2.1 SETUP

An assessment of stormwater quantity was undertaken using WBNM / Storm injector (v1.2.8), the site was modelled as a single catchment node and considered the following scenarios:

- Existing: The site in its current condition, as shown in Figure 2.
- Developed: Proposed development, as shown in the reference drawings.
- Mitigated: The proposed development including on-site detention.

WBMN hydrologic parameters are detailed in Table 2-1.

TABLE 2-1 HYDROLOGIC PARAMETERS

Parameter	Existing	Developed
Area (ha)	0.629	0.629
Fraction Impervious (%)	20.01	50.71
Catchment Lag Factor	1.6	1.6

Current best practices were adopted to estimate design storm runoff, including:

- BoM single point 2016 design rainfalls (23.3375 S, 150.5125 E)
- ARR (Ball, et al., 2019) temporal patterns and burst losses (global initial loss median pre-burst);
- Proposed detention basin details as below:
 - □ 110 m² base area, 0.82 m depth with 1:4 internal batters, providing 155 m³ detention in the 1% AEP;
 - 0.375 m RCP outlet with an invert at the bed of the basin; and
 - □ 2.0m wide weir 0.75 m above the bed invert.

2.2 RESULTS

The predicted peak discharge from the site for the existing, developed and mitigated scenarios are detailed in Table 2-2 and Table 2-3, with hydrologic box charts presented in Appendix A, B and C.

TABLE 2-2	MEDIAN TEMPORAL PATTERN PEAK FLOWS - UNMITIGATED
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AEP (%)	Existing (m ³ /s)	Developed (m ³ /s)	Difference (m ³ /s)	Difference (%)
1	0.300	0.355	0.055	18%
2	0.263	0.285	0.022	8%
5	0.192	0.216	0.024	13%
10	0.156	0.174	0.018	12%
20	0.111	0.132	0.021	19%
50	0.071	0.096	0.025	35%
63	0.049	0.086	0.037	76%

Table 2-2 indicates that without mitigation, the proposed development will result in an increase in median peak discharge from the site. As such, on-set detention was considered.

334 LEICHHARDT STREET, PARKHURST STORMWATER MANAGEMENT PLAN

AEP (%)	Existing (m ³ /s)	Mitigated Developed (m³/s)	Difference (m ³ /s)	Difference (%)
1	0.300	0.262	-0.038	-13%
2	0.263	0.187	-0.076	-29%
5	0.192	0.136	-0.056	-29%
10	0.156	0.116	-0.040	-26%
20	0.111	0.090	-0.021	-19%
50	0.071	0.054	-0.017	-24%
63	0.049	0.048	-0.001	-2%

TABLE 2-3 MEDIAN TEMPORAL PATTERN PEAK FLOWS - MITIGATED

Table 2-3 demonstrates that with mitigation, in the form of on-site detention, the proposed development will not result in an increase in median peak discharge from the site.

Table 2-4 details the proposed detention basin stage-storage relationship.

TABLE 2-4 DETENTION BASIN STAGE STORAGE RELATIONSHIP (MEDIAN PEAK)

AEP (%)	Stage (m)	Storage (m ³)	Discharge (m³/s)
1	0.805	152.7	0.262
2	0.766	141.0	0.187
5	0.646	111.6	0.136
10	0.544	87.5	0.116
20	0.435	65.4	0.090
50	0.297	40.8	0.054
63	0.274	36.6	0.048

3.0 WATER QUALITY ASSESSMENT

The site exceeds 2,500 m², as such, water quality assessment benchmarks set out in State Planning Policy (DILGP, July 2017) are applicable. To ensure the development can comply with applicable Water Quality Objectives (WQOs), a pollutant impact assessment was conducted using MUSIC (Version 6.3).

3.1 SETUP

Split land use industrial pollutant generation parameters were implemented in accordance with the MUSIC Modelling Guidelines (WaterbyDesign, 2018) with sub-catchment properties listed in Table 3-1 below.

The Rockhampton AERO (Station Number 039083) meteorological data for the 10-year period from 1st January 1980 to 31st December 1989 with a 6-minute time step.

Land Use	Area (ha)	Impervious (%)	
Roof	0.143	100	
Ground	0.030	10	
Road	0.156	100	

TABLE 3-1 MUSIC CATCHMENT PROPERTIES

3.2 PROPOSED TREATMENT TRAIN

In order to achieve the applicable WQO, a bio-retention system is proposed, as detailed below:

- Filter and surface area 41 m²;
- Extended detention depth of 0.3 m;
- Unlined filter perimeter 25.6 m (unlined square basin);
- Saturated Hydraulic Conductivity 200 mm/hour;
- Filter depth 0.5 m;
- Total Nitrogen (TN) content of filter media 400 mg/kg;
- Orthophosphate content of filter media 40 mg/kg;
- Exfiltration rate 0 mm/hour; and
- Overflow weir of 2 m.

3.3 RESULTS

Table 3-2 below presents the MUSIC results indicating compliance with applicable WQOs.

Parameter	Sources	Residual Load	% Reduction	WQO
Flow (ML/year)	2.04	1.94	4.9	
Total Suspended Solids (kg/year)	515.0	76.8	85.1	85
Total Phosphorus (kg/year)	0.919	0.270	70.7	65
Total Nitrogen (kg/year)	4.85	2.37	51.1	45
Gross Pollutants (kg/year)	51.6	1.06	97.9	90

TABLE 3-2 MUSIC RESULTS

4.0 STORMWATER MANAGEMENT PLAN

4.1 CONSTRUCTION PHASE

During construction phase of the development, disturbances to the existing ground has the potential to increase sediment loads entering downstream drainage systems and watercourses. Table 4-1 details the key construction phase pollutants identified for this development.

TABLE 4-1 CONSTRUCTION PHASE KEY POLLUTANTS

Pollutant	Sources
Litter	Paper, construction packaging, food packaging, cement bags, material off cuts.
Sediment	Exposed soils and stockpiles during earthworks and building works.
Hydrocarbons	Fuel and oil spills, leaks from construction equipment and temporary car park areas.

4.1.1 EROSION AND SEDIMENT CONTROLS

Erosion and Sediment Control (ESC) devices employed on the site shall be designed and constructed in accordance with Council's guidelines.

PRE CONSTRUCTION

- Stabilise site access on Leichhardt and Sturt Streets;
- Sediment fences to be located along the southern boundary of the site and the eastern extent of the limit of works; and
- Educate site personnel to the site's erosion and sediment control requirements.

CONSTRUCTION

- Maintain construction access/exit, sediment fencing, catch drains and all other existing controls as required;
- Progressively surface and revegetate finished areas as appropriate;
- During construction, all areas of exposed soils allowing dust generation are to be suitably treated. Treatments may include mulching the soil and watering;
- Road access is to be regularly cleaned to prevent the transmission of soil on vehicle wheels and eliminate any build-up of typical road dirt and tyre dusts from delivery vehicles; and
- Provide and maintain adequate waste disposal facilities on the site to cater for all waste materials such as litter hydrocarbons, toxic materials, acids or alkaline substances.
- The proposed bioretention/detention basin can be arranged as a sediment basin during construction to ensure appropriate erosion and sediment controls are met.

5.0 CONCLUSION & QUALIFICATIONS

This SMP has been prepared by MCE for the proposed development of 334 Leichhardt Street, Parkhurst. The development is subject to detailed design, and further supporting analysis may be required as part of future applications.

The above analysis indicates the proposed development, with on-site detention, will not result in adverse stormwater quantity run-off external to the site. The proposed development the relevant stormwater quality objectives with the implementation of an on-site bioretention basin and as such is compliant with applicable stormwater quality requirements.

The analysis and overall approach was specifically catered for the particular project requirements, and may not be applicable beyond this scope. For this reason, any other third parties are not authorised to utilise this report without further input and advice from MCE.

Whilst this report accurately assesses catchment hydrologic performance, using industry standard theoretical modelling techniques and engineering practices, actual future observed catchment flows may vary from those predicted herein.

6.0 REFERENCES

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FIGURES

- Figure 1 Site Location
- Figure 2 Existing Site Condition
- Figure 3 Developed Site Condition







NGLIBITL

N0918172

N9208172

REFERENCE DRAWINGS



13

DEC 20 scale 1:1000 Authc

044 968 2924

PTYLTD.

client: KB WASTE GROUP PTY LTD

location: 334 LEICHARDT STREET, ROCKHAMPTON, QUEENSLAND

 ${}_{\rm project \ no:} \ GG-027$

drawing no: SK-001





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SK-002

drawing no:







APPENDIX A HYDROLOGIC BOX CHART - EXISTING



Compare Peak Flow (m3/s) for Events (63.2% AEP, 50% AEP, 20% AEP, 10% AEP, 5% AEP, 2% AEP, 1% AEP - Site)

APPENDIX B HYDROLOGIC BOX CHART - DEVELOPED



APPENDIX C HYDROLOGIC BOX CHART - MITIGATED DEVELOPED

