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**TOOWOOMBA
REGIONAL COUNCIL**

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REF: 19711-L01-1

DETAILED SITE-BASED STORMWATER MANAGEMENT REPORT



LEROY PALMER
CONSULTING ENGINEERS

celebrating
more than
25 years

PROPOSED UNIT DEVELOPMENT
LOT 0 ON SP184760 SITUATED AT
51 TAYLOR STREET, TOOWOOMBA CITY QLD 4350

Prepared for: Craig & Leanne Lloyd

Project No. 19711

lpce.com.au





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1. INTRODUCTION

We refer to the proposed development at the above-mentioned address. Leroy Palmer Consulting Engineers (LPCE) have been engaged to prepare a detailed Site Based Stormwater Management Report to accompany a town planning development application.

This Detailed Site Based Stormwater Management report and accompanying Stormwater Management plan and details have been provided to demonstrate how we propose to manage the stormwater runoff coming to and leaving the subject site. It provides a detailed design and detailed layout for the proposed stormwater drainage system.

2. PRE-DEVELOPMENT CONDITION

The 1846 m² subject site is currently undeveloped. The site is entirely grassed. 100% of the existing site is considered to be pervious. An aerial photograph and site photo is provided in Figures 1 and 2. The existing surface falls from West to East at approximately 4.5% grade. Stormwater is discharged as overland sheet flow across Eastern boundary to the neighbouring lot.

The site receives overland flow from approximately 1260m² area of the neighbouring lot to the West. Refer Appendix B.



Figure 1: Aerial photograph



Figure 2: Site Photos

3. POST-DEVELOPMENT CONDITION

It is proposed to build a unit development with roofed areas, concrete pavement, grassed area and landscaped areas. The fraction impervious of the site will increase to approximately 60% post-development.

The proposed unit development has already gone through council assessment in 2006 (council ref. OW/2006/2534). The stormwater pipework were already installed under this op works approval as advised by the client.

The stormwater drainage design proposes to collect stormwater runoff from the roof, driveway, turfed and landscaping areas. Stormwater will then be collected via a combination of overland flows and an underground stormwater drainage pipe system and discharged to existing private stormwater infrastructure that were previously installed. The existing private stormwater network discharge to existing stormwater main in Taylor Street. This stormwater main is considered to be the lawful point of discharge for the subject site.

4. STORMWATER QUANTITY

Post-development hydrological calculations for the development have been completed based on the Rational Method explained in QUDM (2017), and the following data.

Post-development catchment:

- Catchment Area: 1846 m²
- Fraction impervious: 60%
- C10 (QUDM) (Post-Dev): 0.72
- Time of concentration (Pre and Post-dev): 7 mins

The results of the calculations are demonstrated in Table 1.

AEP (%)		39	10	5	1
Intensity (mm/hr)		108	158	182	240
Peak Discharge (m ³ /s)	Post-dev	0.034	0.058	0.071	0.106

Table 1: Stormwater Discharge from Development Site

These calculations have been adopted in the design of the stormwater drainage system shown in appendix A.

The proposed unit development generally matches the unit development approved under this approval. The installed stormwater pipework was designed for a fully developed site. Refer OW/2006/2534. The detention of stormwater is deemed unnecessary. Therefore, the detention of stormwater is not provided.

4.1 DISCHARGE INTO DOWNSTREAM PROPERTY

Currently overland flow from entire subject site is discharged to neighbouring lot to the East. Post-development, the runoff from the proposed development will be captured by the stormwater network and discharged to stormwater main in Taylor Street. Discharge to neighbouring lots will be reduced to almost negligible level.

5. STORMWATER QUALITY

Due to a site area of under 2500m² the State Planning Policy (SPP) 07/17 Water Quality is not triggered. Therefore, stormwater quality targets specified in the SPP are not required to be met.

6. SUMMARY

This report demonstrates how we propose to manage the quantity of stormwater runoff from the proposed development. The proposed development will have a non-worsening effect on stormwater drainage to adjacent and nearby allotments both upstream and downstream of the subject site.

Therefore, the proposed development will not cause:

- Any increase in stormwater flows that will cause an actionable nuisance to downstream neighbouring properties.

Should you have any queries or require further information please don't hesitate to contact me.

Yours sincerely,



Ganesh Khawas B.Eng (Civil) Hons | MIEAust
Civil Engineer



Leroy Palmer MIEAust CPEng RPEQ 5208
Director

APPENDIX A: ENGINEERING PLANS

Drawing Register			Approval	
Drawing no.	Revision	Date	Name	Signature
19711-DA01	1	26/06/26	Leroy Palmer RPEQ 5208	
19711-DA02	1	26/06/26		

APPENDIX B: EXTERNAL UPSTREAM CATCHMENT



EXTERNAL UPSTREAM CATCHMENT