

**5-7 Lawrence Street and 18 Marmora Street, Freshwater**



**Section 96 Stormwater Assessment**

Prepared For

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**18 Marmora Street**  
**Freshwater NSW 2096**

Prepared By:

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**Document Issue**

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## Document Status

<b>Title</b>	Section 96 Stormwater Assessment	
<b>Location</b>	5-7 Lawrence Street and 18 Marmora Street, Freshwater	
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# 1 Executive Summary

BSE have been engaged by Frank Minnici to conduct an assessment on the stormwater design by Thomson Kane Pty Ltd against a section 96 application to stage the construction of the development.

BSE has found the approved stormwater design to be unaffected by the proposed staging of the development. The approved design essentially is split into two (2) discharge points which can be accommodated in the proposed staging.

## 2 Introduction

The property at 5-7 Lawrence Street and 18 Marmora Street Freshwater (formerly Harbord), is currently approved for construction via a Land and Environment Court Consent NSWLEC 1098 to construct on the site a mixed development consisting of Commercial and Residential buildings.

The site bounds Lawrence Street to the south and Marmora Street to the north east. The development approval currently divides the site into a commercial zone which bounds Lawrence St and a residential zone with carpark and access to Marmora Street.

The Consent allows for construction of the development as a whole. It is now proposed to develop the site under a staged process. The staging would commence with the construction and completion of the residential portion and construction of the commercial portion at a later date.

The purpose of this report is to assess the impact of a staged construction programme on the effective performance of the stormwater disposal system which forms part of the Consent



### 3 Assessment

The Consent approved stormwater design is currently based on the total site disposal, whereby stormwater discharge is at two locations:

- A. Lawrence Street
- B. Marmora Street

The site generally grades from the south west to the north east. Marmora St discharge point is 3.83 metres lower than the corresponding discharge point at Lawrence St.

The total site area is 2782 m<sup>2</sup>. The proposed staging will apportion 2082m<sup>2</sup> of the site for residential construction and 700m<sup>2</sup> for the remaining commercial stage. This assessment is based on the current Consent approved drawings and calculations issued at the time of DA lodgement

#### 3.1 Reference Documents

The Client engaged Thomson Kane Consulting Engineers to prepare and lodge DA documentation for approval by Warringah Council. Documents referenced are as follows:

##### Design Drawings

Drawing Designation	Title	Revision
DAH-00	Cover Sheet, Legend and Drawing Schedule	P7
DAH-01	Sediment and Erosion Control Plan	P5
DAH-02	Site Plan and Stormwater Catchment Plan	P6
DAH-03	Ground Floor Plan	P6
DAH-04	Roof Plan	P6
DAH-05	Basement 1 Plan	P6
DAH-06	Retail/Commercial Basement Carpark (Levels 3A, 2A and 2B)	P5
DAH-07	OSD Drainage Long Section	P5
DAH-08	Driveway Lane Sections	P1
DAH-09	Stormwater Overland Flow Swale	P1

##### Report/Calculations

Report Designation	Title	Revision
J1639R_1.doc	OSD Modelling Report	A

## 3.2 Staging Impact on Design

BSE have reviewed the Consent approved documentation as referenced in section 3.1. The assessment is in line with the following parameters:

- Total and proportionate site areas for proposed staging
- Staging boundaries
- Site grades
- Improved site grades/contours
- Overland flow paths
- Stormwater DA design
- On Site Detention (OSD)
- Effects of staging on stormwater system

The residential stage stormwater drainage system incorporates a number of ground based On Site Detention (OSD) facilities which vary in volume. The Commercial roof area is also used as additional OSD storage Refer table below:

OSD Designation	Catchment Area	Location	Volume M <sup>3</sup>	Rainwater storage M <sup>3</sup>
OSD 1	727.6m <sup>2</sup>	Commercial Building Roof	445M <sup>3</sup>	NA
OSD 2	650m <sup>2</sup>	Residential Ground	45M <sup>3</sup>	20M <sup>3</sup>
OSD 3	201m <sup>2</sup>	Residential Ground	10M <sup>3</sup>	NA
OSD 4	1202.5 m <sup>2</sup>	Residential Ground	23m <sup>2</sup>	NA

The residential OSD and stormwater system has a PS discharge into the Council Stormwater drainage system at the rear of the property (Marmora Street).

The Commercial OSD (roof based) and stormwater system has a PS discharge into Lawrence Street kerb and gutter.

The Residential Stormwater system is totally independent of the Commercial Stormwater system.

### 3.2.1 Stormwater Design

Refer Drawing DAH-03/P6 mark-up which show proposed staging boundary and separate stormwater systems

Stage 1 (Residential Construction) is shown hatched in Blue.

Stage 2 (Commercial Construction) is shown hatched in Red.





## 4 Conclusion

Based on the nature of the site and the current design which shows a stormwater discharge on both sides of the site, BSE are of the opinion that a staged development would have no effect on the current design and DA consent.