



Mr N Fuz
c/o City Plan Services
Suite 3A, 2 New McLean Road
Edgecliff NSW 2027

L181005_1_3_LordStreet_FloodInformation

9 October 2018

Attention: Mr N Fuz

Dear Nathan,

**Re: 1-3 Lord Street, Botany -
Preliminary Flood Constraints Assessment**

1. INTRODUCTION

City Plan Services proposes the redevelopment of 1-3 Lord Street, Botany. The client is lodging a planning proposal which involves retaining the existing zoning (B7 -Business Park), increasing the maximum height and increasing the Floor Space Ratio. The proposed building footprint has not been finalised, however is intended to cover a greater proportion of the lot than the existing development on the site. The subject site includes Lots 2 and 4 DP 593463, shown in red on Diagram 1. The site location is also presented on Figure 1.

Diagram 1 Site Location



WMAwater Pty Ltd

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The site is located within the Botany Bay Foreshore Beach Catchment, and the local Lord Street area is subject to flood affectation in events as frequent as the 5 year ARI (Annual Recurrence Interval) event. As such, WMAwater has been engaged to provide preliminary advice in regards to the flood behaviour at the site, and identify any constraints that may be pertinent to the development, to support the planning proposal. Please note that given the preliminary stage of the project, advice is general in nature and would need refining when design plans have progressed and further data, for example detailed site survey, is available. At this stage no review of the Botany Bay Comprehensive Development Control Plan 2013 nor identification of applicable development controls has been undertaken.

2. AVAILABLE FLOOD INFORMATION

2.1. Source of Flood Information

The Botany Bay Foreshore Beach Catchment Flood Study (the Flood Study) (Reference 1) was undertaken by BMT WBM in December 2015, and is not yet adopted by Council. The primary objective of the Flood Study was to define the flood behaviour under historical, existing and future conditions (incorporating potential impacts of climate change) in the Botany Bay Foreshore Beach Catchment for a full range of design flood events.

For the purpose of this preliminary constraints assessment, Council supplied the Flood Study Report to WMAwater (on the 4th October 2018), and provided peak flood depth and level result grids (in ASCII format), for the 1% AEP and PMF event (received by WMAwater on the 11th and 19th September, 2018). The flood behaviour 1% AEP event is typically used for planning purposes and impact assessments, while the Probable Maximum Flood (PMF) shows the full extent of potential flood risk at the site.

In conjunction with the report and modelled flood results, LiDAR data (1 m resolution, NSW LPI) was reviewed to gain an understanding of the local topography and broader catchment characteristics. Comments regarding elevations at the site are indicative only, and should be confirmed with detailed survey at a later stage.

2.2. Description of Existing Flood Behaviour

Lord Street is in the north of the Botany Bay Foreshore Beach Catchment. This catchment covers approximately 3.5 km² and generally slopes in a south-westerly direction toward the Botany Bay Foreshore (Reference 1). The Flood Study also notes that the topography of the catchment is quite flat (with the exception of a low lying ridge line located on the eastern boundary of the catchment), which leads to generally poor surface drainage conditions.

In the vicinity of the site, a sag point on Lord Street causes water to pond on the road and extend into properties north and south of the road in events as frequent as a 5 year ARI (refer to Figure C1 in Reference 1). The lowest point occurs outside No. 7 Lord Street, where water ponds to depths of up to approximately 1.0 m in the 1% AEP event, and 1.3 m in the PMF event. The subject site at 1 - 3 Lord Street is affected by this ponded water to depths of 0.5 m in the 1% AEP event and 0.8 m in the PMF event.

In the 1% AEP event, the front 8 m – 15 m along the site boundary is flood affected to varying depths, whilst the remainder of the lot is largely flood free, with the exception of some shallow ponding on the western boundary (less than 150 mm deep). The peak flood depth and levels for the 1% AEP and PMF events, based on results supplied by Council, are presented in Figure 2 and 3 respectively. Parts of the site, mainly at the front of the site, are classified as flood storage, indicating that if an obstruction is placed in this area it is likely to cause flood impacts elsewhere. Figure C-27 in Reference 1 shows the hydraulic categorisation for the 1% AEP, and shows that the remainder of the lot is either flood free or classified as flood fringe. Refer to Section 6.7 of Reference 1 for a detailed description of each hydraulic category.

2.3. Available Flood Level Information

A summary of 1% AEP and PMF flood levels from the provided result grids are provided in Table 1. Note that due to the approximately level surface of the ponded water, the peak flood level in each event is consistent on Lord Street and the site itself, hence only one level has been provided below. The 1% AEP and PMF event peak flood levels are the ones primarily used to determine minimum floor level requirements under Bayside Council's development control policies.

Table 1 Peak Flood Levels (from Reference 1)

Location	1% AEP Peak Level (mAHD)	PMF Peak Level (mAHD)
Lord Street	5.3	5.6

3. PRELIMINARY ASSESSMENT OF FLOOD CONSTRAINTS

3.1. Building Footprint and Flood Impacts

As shown in Figure 2, much of the site is flood free in the 1% AEP event, and with an appropriate setback from the front boundary (between 8-15 m), the building would be outside of the 'flood storage' area, and therefore unlikely to cause flood impacts. It is envisaged that if such a setback is not possible, that the street frontage could be engineered to prevent flood level impacts, perhaps through the use of pier-footings for construction, or on-grade open carparking or landscaping. Appropriate building siting would also help prevent water entering the building and damaging property.

It is also noted that the shallow ponding on the western site boundary is not expected to form a major constraint, as it is classified as "flood fringe" in the 1% AEP event (Refer to Figure C-27 in the Flood Study), however this area would need to be taken into account during the design phase, and would possibly require confirmation via a flood impact assessment depending on the proposed footprint.

3.2. Access and Evacuation

The significant depths of ponded water in Lord Street would restrict safe vehicular and pedestrian access in both directions in a range of flood events. It would be advisable to locate the driveway entry point as close to the western boundary as possible, as ground levels here are approximately 0.3 m higher than at the eastern boundary (based on LPI LiDAR data, to be confirmed at a later

stage with detailed survey). Further to this, the proponent would likely need to prepare an evacuation plan or emergency management plan to address these access issues and how to best keep occupants safe during flood events.

4. CONCLUSION

WMAwater has undertaken a high level assessment of the site at 1-3 Lord Street with the information available at this stage, and acknowledges that further assessment may be needed as detailed information comes to hand. The large proportion of flood free land on the site in the 1% AEP event suggests that it would be possible to design a building footprint that does not impact on flood behaviour outside of site. However, given the significant extent of ponding on Lord Street, safe site access and evacuation requirements should be considered of foremost importance when designing site layout and driveway placement.

If you have any queries please do not hesitate to contact the undersigned for clarification.

Yours Sincerely,

WMAwater



Erin Askew

Director

References

1. BMT WBM
Botany Bay Foreshore Beach Catchment Flood Study
Botany Bay Council, 2015

Figures

Figure 1 Site Location

Figure 2 Peak Flood Levels and Depths – 1% AEP Event

Figure 3 Peak Flood Levels and Depths – PMF Event

FIGURE 1
1 - 3 LORD ST, BOTANY
STUDY AREA





