Woolacotts.
CONSULTING ENGINEERS

45 Carefree Road, North Narrabeen

Stormwater Management Report

11 September 2019 | 19-196

Contents

Document control

Rev No	Date	Revision details	Approved	Verified	Prepared
A	11/09/19	Issued for DA	JC	JG	JG

1.0 Introduction

A development extension to an existing single dwelling residential property is proposed at 45 Carefree Road, North Narrabeen, NSW 2101.

Refer to Figure 1 below for the site location.

Figure 1 – Site location

This report documents the proposed stormwater management system for the residential site, in accordance with specifications set out in Northern Beaches Council's Development Control Plan (DCP).

2.0 Existing Conditions

2.1 Existing Site and Stormwater Drainage System

The existing site consists of a single dwelling residential structure. The total area of the site is approximately 540 m^2.

The site falls naturally away from the street (north to south) at a grade of approximately 28% and is classified as low-lying as defined within Northern Beaches DCP.

The site is not subject to flood hazards as detailed within the Northern Beaches Flood Maps. Refer Figure 2 below for the flood hazard extents.
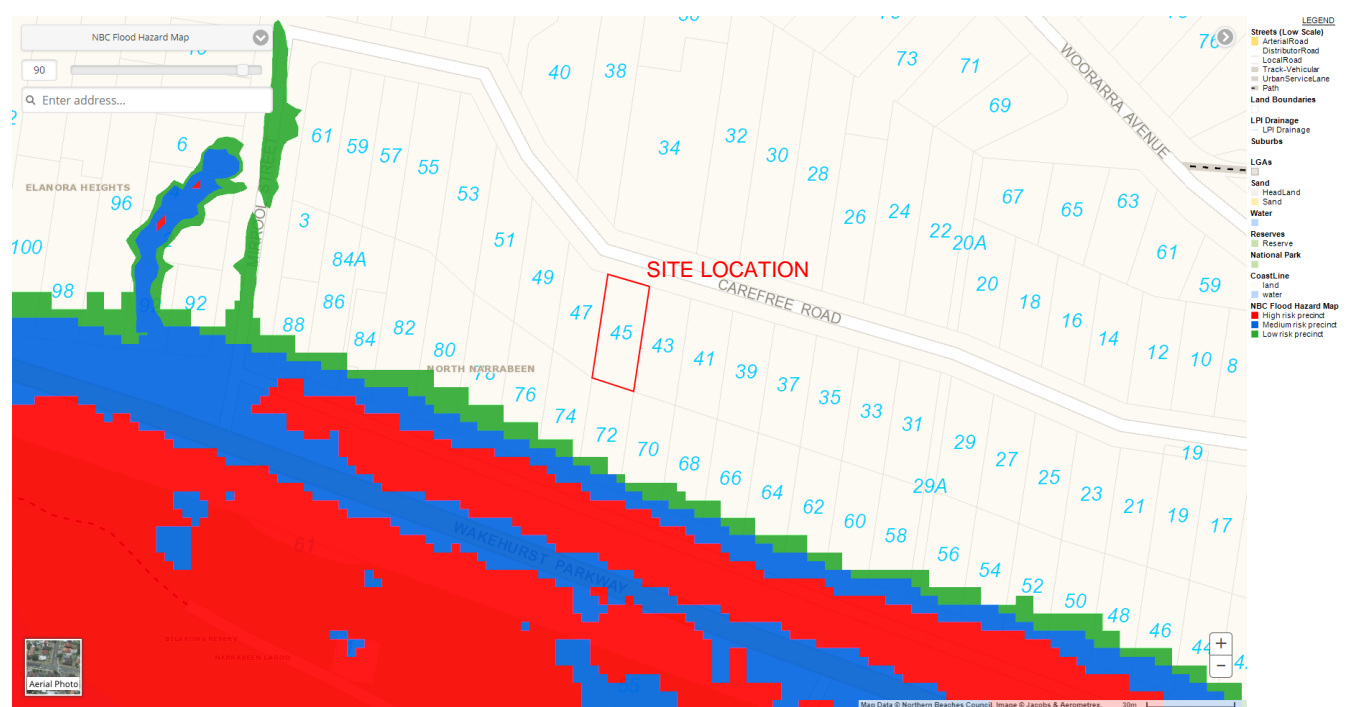
Figure 2 – Northern Beaches Council – Flood Hazard Map

Following a site inspection undertaken on 6th September 2019, and associated detailed survey information, the existing sites stormwater management is predominately by surface drainage / overland flow, dissipating to the rear of the property, with no direct connection to a pit and pipe drainage system. Refer Appendix A for the existing site survey.

The existing stormwater overland flowpath is from the north to south, via the southern neighbouring property (72 Wakehurst Parkway, North Narrabeen), where it is discharged into Council's stormwater pit and pipe system within Wakehurst Parkway.

We believe there are currently no stormwater treatment or on-site stormwater detention systems in place.

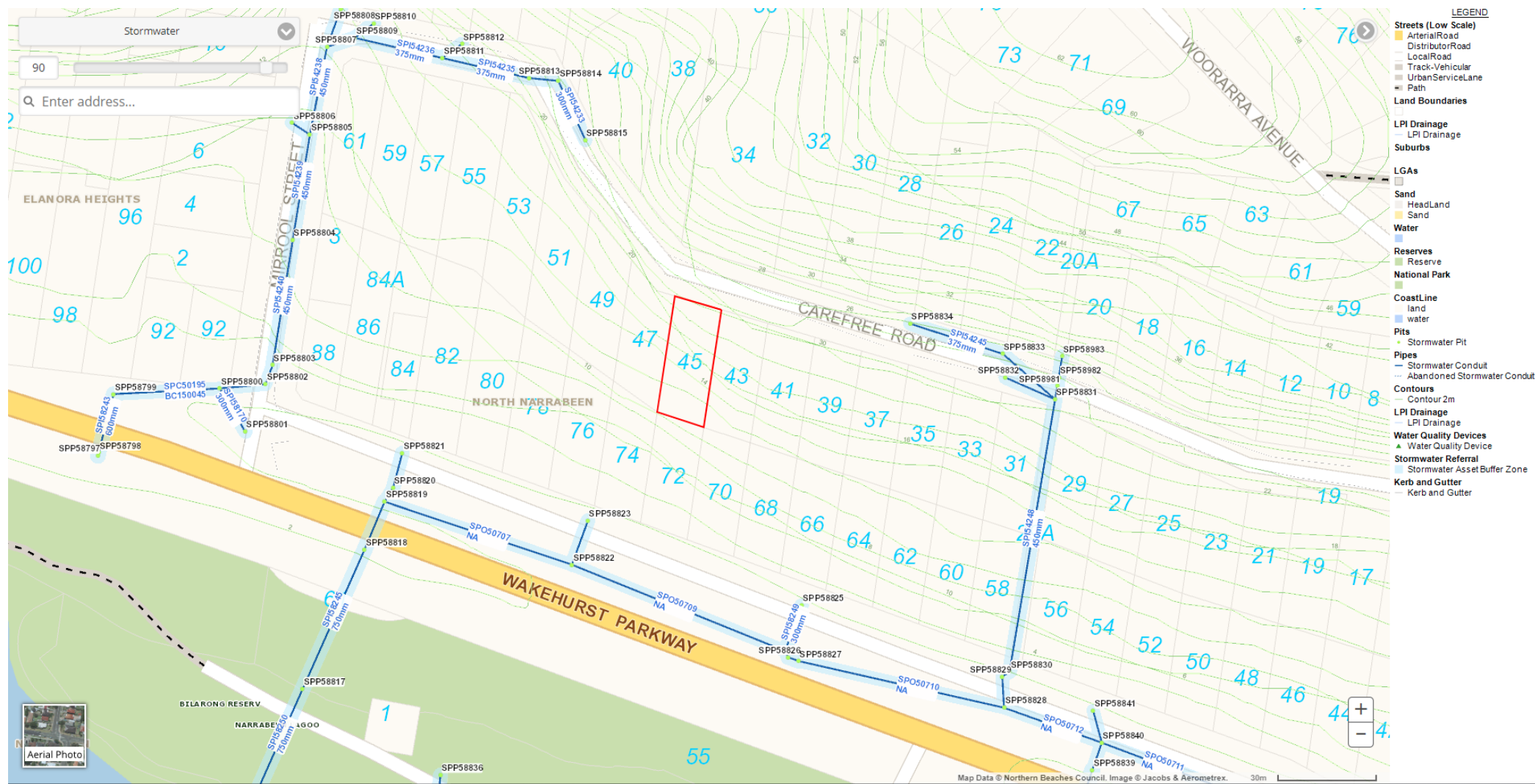Refer Figure 3 below for Council's existing drainage infrastructure.

Figure 3 – Northern Beaches Council – Existing Drainage Infrastructure

3.0 Proposed Development Extension

The proposed development consists of retaining the existing structure and incorporating additional extensions. Refer architectural plans undertaken by Warren Design Pty Ltd for additional details.

3.1 Stormwater Drainage

The design intent of the proposed stormwater management system is to maintain the existing sites stormwater management strategy and provide improvements where possible.

As the existing site falls away from the street and does not connect directly to a Council pit and pipe system, the proposed stormwater management system will be designed to comply with Council's *Technical Specification - Stormwater Drainage from Low Levels Properties.*

In accordance with the technical standard, a below ground on-site absorption trench system (located on Level 3) will be designed to collect all existing and proposed roof areas to satisfy the below requirements:

- The on-site absorption system will not have an adverse impact upon adjoining and / or downstream properties by the direction or concentration of stormwater on those properties.
- Soil absorption characteristics and other physical constraints indicate the on-site absorption system is appropriate for the property.
- The onsite absorption system shall require the creation of a Positive Covenant and restriction on Use of Land over the system.
- Absorption pit is to be designed for an Average Recurrence Interval (ARI) storm of 50 years. An overflow mechanism in the form of a level spreader must be provided for all storms greater than the 50-year ARI storm, up to and including the 100-year ARI storm. The overflow mechanism is required to minimise overland flow disturbance to the lower property.
- The roof guttering and downpipe system should be designed to collect the 50 year ARI design rainfall and pipe it to the absorption system, or alternatively provide for surface collection of guttering overflows into the absorption system.
- The absorption pit should not be located within three metres of the side or rear boundary, or three metres from any on-site building or neighbouring buildings.

The site is located within 200m (approximately) of Narrabeen Lagoon and based on the preliminary Site Classification Certificate undertaken by Design Construct Industries Pty Ltd, the soil is classified as 'Class S' in accordance with AS2870. Detailed design of the absorption trench including sizing will be subject to further detail geotechnical investigation (ie- Confirmation of measured infiltration rate $L/m^2/s$).

All development applications for alterations and additions for single residential dwellings will not require on-site detention as detailed within Council's *Technical Specification – On-site Stormwater Detention.* Therefore, no on-site detention is proposed for the development extension.

3.2 Erosion and Sediment Control

During construction, erosion and sediment control measures will be provided in accordance with the requirements of "Managing Urban Stormwater Soils and Construction, 4th Edition (Blue Book)". These measures will include silt fences on the low side of the site, silt traps and a construction exit to remove silt from vehicles before they leave the site. Dust control measures will also be provided during construction.

Appendix A
Existing Site Survey

TRUE NORTH I.S.G.

SEWER ACCESS CHAMBER (NOT LOCATED)

11547

24

25

SITE AREA
540.6m²

D.P. 11547

26

INSPECTION CAP

PALING FENCE

LAWN

GARDEN

CLOTHES LINE

METAL SHED
FLOOR LEVEL 15.16

PLASTIC SHED

TIMBER DECK RL. 18.20

ONE & TWO STOREY RENDERED BRICK & CLAD HOUSE
METAL ROOF
No. 45

TIMBER BALCONY RL. 18.10

GROUND FLOOR FL. 16.18

FIRST FLOOR FL. 18.44

UNDER

PAVED PATH

PAVING

CONCRETE

ONE & TWO STOREY TIMBER & STONE HOUSE
TILE & METAL ROOF
No. 47

BALCONY
FLOOR LEVEL 15.82

TILED PATIO

STEPS

CASUARINA 0.40Ø, 15H, 9S

MELALEUCA 0.40Ø, 7H, 6S

WATER METER

GAS METER

TELSTRA PIT

EUCALYPT 0.50Ø, 12H, 12S

BENCH MARK
P.M. 5242 (STEEL PIN IN BOX)
RL. 24.636 A.H.D

POWER POLE

HYDRANT

SEWER ACCESS CHAMBER

ROAD

DRIVEWAY

GRAVEL

STONE GARDEN & SHRUBS

HEDGE

2M HIGH

CAREFREE

CONCRETE

CARPORT
METAL ROOF
TWO STOREY RENDERED BRICK BUILDING
(ROOM UNDER)

ONE & TWO STOREY RENDERED BRICK HOUSE
METAL ROOF
No. 43

TIMBER BALCONIES
LEVEL 1 RL. 16.34
LEVEL 2 RL. 18.87

PALM 0.40Ø, 12H, 4S

POWER POLE

SEWER ACCESS CHAMBER

36.01
36.51
37'
37'

45°
38°
45°
107°
15.05°
15.195
30°
35°
9°
289°
189°

NOTES:

1) CAUTION: SHOULD ANY DEVELOPMENT OR CONSTRUCTION BE PLANNED ON OR NEAR THE BOUNDARIES, THE BOUNDARIES SHOULD BE CLEARLY MARKED ON SITE.

2) ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE AT THE LAND TITLES OFFICE.

3) ORIGIN OF LEVELS ON A.H.D. IS TAKEN FROM P.M. 5242 RL 24.636 A.H.D.

4) TREE SPREADS ARE DIAGRAMMATIC ONLY AND ARE NOT SYMMETRICAL.

5) UNDERGROUND (NON VISIBLE) SERVICE LINES HAVE BEEN SHOWN FROM "DIAL BEFORE YOU DIG" SERVICE AUTHORITY RECORDS & ARE DIAGRAMMATIC ONLY IN REGARD TO THEIR POSITION & WIDTH UNLESS STATED OTHERWISE.

6) SPOT LEVELS ARE ACCURATE.
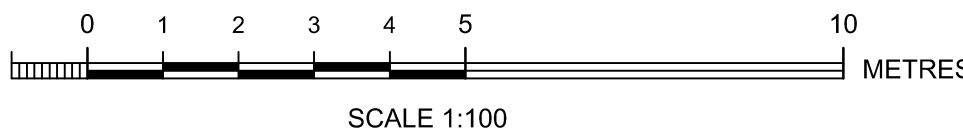
7) BEARINGS SHOWN ARE ON I.S.G.-(TRUE NORTH)

INVESTIGATION OF "DIAL BEFORE YOU DIG" UNDERGROUND SERVICES HAS BEEN MADE. DETECTION OF UNDERGROUND SERVICES IS NOT AN INTEGRAL PART OF THIS SURVEY. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE

DEVELOPERS & EXCAVATORS MAY BE HELD FINANCIALLY RESPONSIBLE BY THE ASSET OWNER SHOULD THEY DAMAGE UNDERGROUND NETWORKS.

CARELESS DIGGING CAN:
- CAUSE DEATH OR SERIOUS INJURY TO WORKERS AND THE GENERAL PUBLIC
- INCONVENIENCE USERS OF ELECTRICITY, GAS, WATER AND COMMUNICATIONS
- LEAD TO CRIMINAL PROSECUTION AND DAMAGES CLAIMS
- CAUSE EXPENSIVE FINANCIAL LOSSES TO BUSINESS
- CUT OFF EMERGENCY SERVICES
- DELAY PROJECT COMPLETION TIMES WHILE THE DAMAGE IS REPAIRED

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DIAL 1100 BEFORE YOU DIG

0 1 2 3 4 5 ... 10 METRES
SCALE 1:100

LEGEND
TREE 0.10Ø, 5H, 4S
DENOTES APPROX 0.1m DIAMETER of TREE
DENOTES APPROX. 5m HEIGHT of TREE
DENOTES APPROX. 4m SPREAD of TREE
GUTTER
TOW
DENOTES CENTRE LINE OF ROAD
DENOTES TOP OF GUTTER
DENOTES TOP OF WALL

O/HEAD ELECTRIC LINES — E —
BOARDS SEWER — S —
TELSTRA LINES — T —
WATER LINES — W —
GAS LINES — G —

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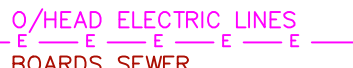Email: survey@beeleth.com.au
ABN: 13 003 194 447
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Quality Surveying & Development Solutions

PLAN SHOWING BOUNDARIES, RELATIVE HEIGHTS & PHYSICAL FEATURES OVER LOT 25 IN D.P. 11547 KNOWN AS No. 45 CAREFREE ROAD, NORTH NARRABEEN.

L.G.A.: NORTHERN BEACHES

CLIENT	Mr B. & Mrs S. MUNRO		REF No.
PROPERTY	No. 45 CAREFREE ROAD, NORTH NARRABEEN		20071
DATUM A.H.D.	SCALE 1:100 @ A1	DATE 06/06/2016	SHEET No. 1 of 1
SURVEYED A.M.	DRAWN H.H.	DWG No. 20071	REV No. 00