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Boston Blyth Fleming
Town Planners

15 November 2024

The CEO
Northern Beaches Council
Po Box 882
MONA VALE NSW 1660

Attention: Robert Platt - Principal Development Infrastructure Officer

Dear Mr Platt,

Updated Offer to Enter into a Planning Agreement with Northern Beaches Council
VPA2023/0001
Development of Sector 303 including built form and subdivision
Lot 4, DP553816, 16 Macpherson Street, Warriewood

Reference is made to Development Application DA2023/0669 currently before the Land and Environment Court of NSW proposing the construction of 28 dwellings, infrastructure, roadworks, tree removal, landscaping, community title subdivision and the dedication of the inner 25 metre creek line corridor to Council.

This Voluntary Planning Agreement (VPA) offer proposes the delivery of works-in-kind involving the rehabilitation of the creek line corridor and the construction of the shared path connection within Brands Lane being works identified in the Warriewood Valley Contributions Plan and the dedication of the inner creek line corridor to Council.

We note that Narrabeen Creek has undergone substantial artificial re-alignment as a result of the development of the adjoining sites over the past several decades. DP 1072867, which forms a common creek boundary, notes the artificial re-alignment of Narrabeen Creek when defining the northern boundary of the subject allotment. Several registered plans upstream and downstream of the subject plan also come to the same conclusion when defining their respective creek boundary.

The location of the northern boundary, being the former centreline of Narrabeen Creek, has been digitised from DP 5464 and is substantially the same as that shown on DP 331865 and DP 553816. This being the common (and southern) boundary of Lot 6015, DP 1072867 - Public Reserve.

The proposed works-in-kind and land dedication to which this VPA offer relates are as follows:

- Item 23 (Pedestrian and Cycleway Schedule) Shared Path Brands Lane

The location and detail of the Shared Path is depicted in the Civil Works plans, prepared by Craig and Rhodes at **Attachment 1**.

- Item 2.62B (Multi-functional Creek Line Strategy) Rehabilitation works of Narrabeen Creek at Sector 303

The location and detail of the Narrabeen Creek rehabilitation works is depicted in the Narrabeen Creek Rehabilitation Works plans, Revision F prepared by Craig and Rhodes at **Attachment 2**, and Biodiversity Management Plan prepared by AEP at **Attachment 3**

- Clause 5.2.2 - Creek line corridor land dedication at Sector 303.

The inner 25 metre creek line corridor proposed to be dedicated to Council is nominated as proposed Lot 30 on concept Subdivision Plan Lot dedication plan 048-22P L01[14] prepared by Craig & Rhodes **Attachment 4**.

<u>Rationale and origin of the Offer</u>

The Offer relates to works and required creek line corridor land dedication specifically identified in the Warriewood Valley Contributions Plan and which are proposed to be carried out as a component of the subject development application.

<u>Demonstratable Public Benefit of the Offer</u>

The Offer relates to works and required creek line corridor land dedication specifically identified in the Warriewood Valley Contributions Plan and will facilitate the completion of these identified works and creek line corridor land dedication as a component of the subject development application. The Offer facilitates the provision of identified infrastructure and works located on public land (upon dedication of the inner creek line corridor) within Warriewood Valley and accordingly provides Public Benefit.

Valuation of the Offer

- Item 23 (Pedestrian and Cycleway Schedule) Shared Path Brands Lane

Cost: $73,012.00 + GST

- Item 2.62B (Multi-functional Creek Line Strategy) Rehabilitation works of Narrabeen Creek at Sector 303

Cost: $158,899+ GST

Gross Construction Cost for works-in-kind: $231,911.00

- Clause 5.2.2 - Creek line corridor land dedication at Sector 303.

The accompanying documentation confirms that 1091m² of creek line corridor (proposed Lot 30) is to be dedicated to Council at a . land value of **$175,696**- in accordance with Council's adopted development contribution plan and indexed to/2024 land value rates

The value of this land will directly offset the total monetary contribution payable for development on the land.

Proposed implementation of the Offer

- Item 23 (Pedestrian and Cycleway Schedule) Shared Path Brands Lane

These works will be carried out prior to issue of any Occupation Certificate relating to DA2023/0669

- Item 2.62B (Multi-functional Creek Line Strategy) Rehabilitation works of Narrabeen Creek at Sector 303

These works will be carried out prior to the dedication of the creek line corridor in accordance with DA2023/0669.

- Clause 5.2.2 - Creek line corridor land dedication at Sector 303.

The land will be dedicated upon registration of the draft plan of subdivision with NSW Land Services.

Please do not hesitate to contact me to discuss any aspect of this correspondence.

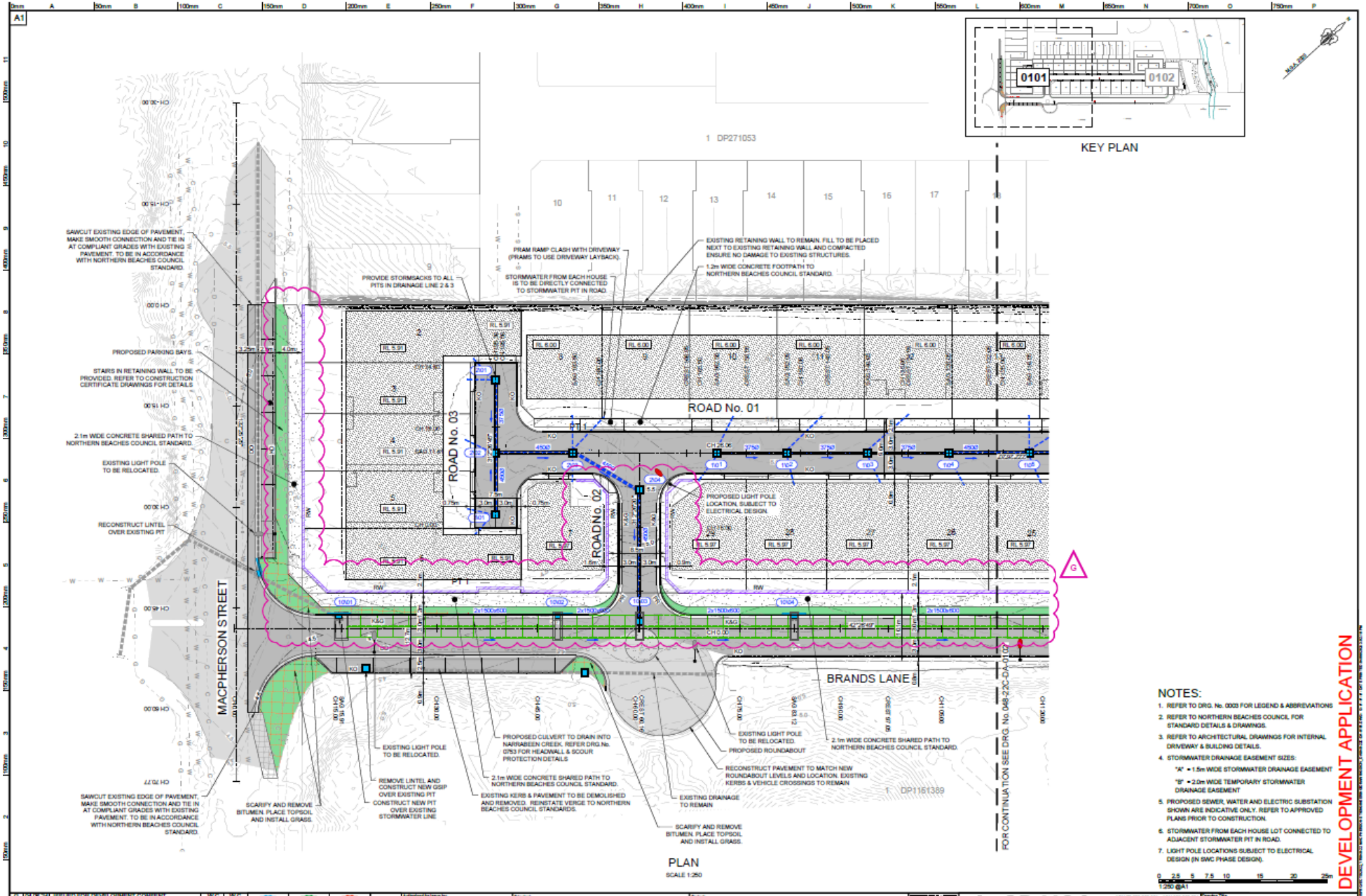
Yours sincerely
BOSTON BLYTH FLEMING PTY LIMITED

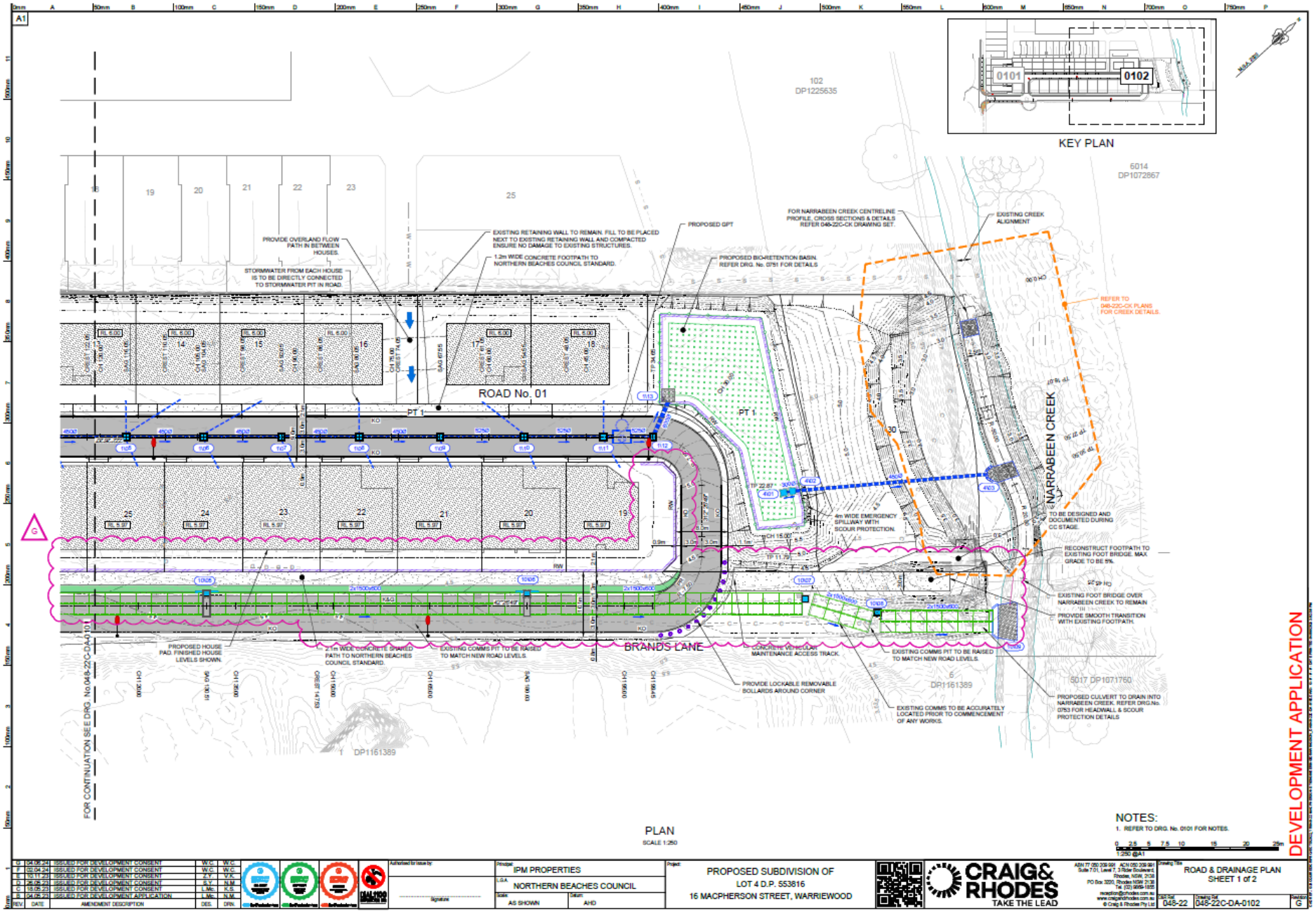
[redacted]

Greg Boston
B Urb & Reg Plan (UNE) MPIA
Director

Attachment 1	Civil works plans prepared by Craig and Rhodes
Attachment 2	Narrabeen Creek rehabilitation works plans, Revision F, prepared by Craig and Rhodes
Attachment 3	Biodiversity Management Plan prepared by AEP
Attachment 4	Concept Subdivision Plan prepared by Craig & Rhodes

ATTACHMENT 1 - CIVIL WORKS PLANS PREPARED BY CRAIG AND RHODES


KEY PLAN
0101
0102
1 DP271053
1 DP1161389
ROAD No. 01
ROAD No. 02
ROAD No. 03
MACPHERSON STREET
BRANDS LANE
SAWCUT EXISTING EDGE OF PAVEMENT. MAKE SMOOTH CONNECTION AND TIE IN AT COMPLIANT GRADES WITH EXISTING PAVEMENT. TO BE IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL STANDARD.
PROPOSED PARKING BAYS.
STAIRS IN RETAINING WALL TO BE PROVIDED. REFER TO CONSTRUCTION CERTIFICATE DRAWINGS FOR DETAILS.
2.1m WIDE CONCRETE SHARED PATH TO NORTHERN BEACHES COUNCIL STANDARD.
EXISTING LIGHT POLE TO BE RELOCATED.
RECONSTRUCT LINTEL OVER EXISTING PIT
PRAM RAMP CLASH WITH DRIVEWAY (PRAMS TO USE DRIVEWAY LAYBACK).
PROVIDE STORMSACKS TO ALL PITS IN DRAINAGE LINE 2 & 3
STORMWATER FROM EACH HOUSE IS TO BE DIRECTLY CONNECTED TO STORMWATER PIT IN ROAD.
EXISTING RETAINING WALL TO REMAIN. FILL TO BE PLACED NEXT TO EXISTING RETAINING WALL AND COMPACTED ENSURE NO DAMAGE TO EXISTING STRUCTURES.
1.2m WIDE CONCRETE FOOTPATH TO NORTHERN BEACHES COUNCIL STANDARD.
PROPOSED LIGHT POLE LOCATION, SUBJECT TO ELECTRICAL DESIGN.
EXISTING LIGHT POLE TO BE RELOCATED.
REMOVE LINTEL AND CONSTRUCT NEW GSIP OVER EXISTING PIT
CONSTRUCT NEW PIT OVER EXISTING STORMWATER LINE
SCARIFY AND REMOVE BITUMEN. PLACE TOPSOIL AND INSTALL GRASS.
PROPOSED CULVERT TO DRAIN INTO NARRABEEN CREEK. REFER DRG.No. 0753 FOR HEADWALL & SCOUR PROTECTION DETAILS
2.1m WIDE CONCRETE SHARED PATH TO NORTHERN BEACHES COUNCIL STANDARD.
EXISTING KERBS & PAVEMENT TO BE DEMOLISHED AND REMOVED. REINSTATE VERGE TO NORTHERN BEACHES COUNCIL STANDARDS.
EXISTING DRAINAGE TO REMAIN
SCARIFY AND REMOVE BITUMEN. PLACE TOPSOIL AND INSTALL GRASS.
EXISTING LIGHT POLE TO BE RELOCATED.
PROPOSED ROUNDABOUT
RECONSTRUCT PAVEMENT TO MATCH NEW ROUNDABOUT LEVELS AND LOCATION. EXISTING KERBS & VEHICLE CROSSINGS TO REMAIN
2.1m WIDE CONCRETE SHARED PATH TO NORTHERN BEACHES COUNCIL STANDARD.
FOR CONTINUATION SEE DRG. No. 048-22C-DA-0102
PLAN
SCALE 1:250
NOTES:
1. REFER TO DRG. No. 0003 FOR LEGEND & ABBREVIATIONS
2. REFER TO NORTHERN BEACHES COUNCIL FOR STANDARD DETAILS & DRAWINGS.
3. REFER TO ARCHITECTURAL DRAWINGS FOR INTERNAL DRIVEWAY & BUILDING DETAILS.
4. STORMWATER DRAINAGE EASEMENT SIZES:
"A" = 1.5m WIDE STORMWATER DRAINAGE EASEMENT
"B" = 2.0m WIDE TEMPORARY STORMWATER DRAINAGE EASEMENT
5. PROPOSED SEWER, WATER AND ELECTRIC SUBSTATION SHOWN ARE INDICATIVE ONLY. REFER TO APPROVED PLANS PRIOR TO CONSTRUCTION.
6. STORMWATER FROM EACH HOUSE LOT CONNECTED TO ADJACENT STORMWATER PIT IN ROAD.
7. LIGHT POLE LOCATIONS SUBJECT TO ELECTRICAL DESIGN (IN SWC PHASE DESIGN).
DEVELOPMENT APPLICATION
G 04.06.24 ISSUED FOR DEVELOPMENT CONSENT W.C. W.C.
F 02.04.24 ISSUED FOR DEVELOPMENT CONSENT W.C. W.C.
E 16.11.23 ISSUED FOR DEVELOPMENT CONSENT Z.Y. V.K.
D 26.05.23 ISSUED FOR DEVELOPMENT CONSENT S.Y. N.M.
C 18.05.23 ISSUED FOR DEVELOPMENT CONSENT L.Mc. K.S.
B 04.05.23 ISSUED FOR DEVELOPMENT APPLICATION L.Mc. N.M.
REV. DATE AMENDMENT DESCRIPTION DES. DRN.
IPM PROPERTIES
NORTHERN BEACHES COUNCIL
AS SHOWN
AHD
PROPOSED SUBDIVISION OF
LOT 4 D.P. 553816
16 MACPHERSON STREET, WARRIEWOOD
CRAIG & RHODES
TAKE THE LEAD
ROAD & DRAINAGE PLAN
SHEET 1 of 2
048-22
048-22C-DA-0101
G


KEY PLAN
0101
0102
ROAD No. 01
BRANDS LANE
NARRABEEN CREEK
PROVIDE OVERLAND FLOW PATH IN BETWEEN HOUSES.
STORMWATER FROM EACH HOUSE IS TO BE DIRECTLY CONNECTED TO STORMWATER PIT IN ROAD.
EXISTING RETAINING WALL TO REMAIN. FILL TO BE PLACED NEXT TO EXISTING RETAINING WALL AND COMPACTED ENSURE NO DAMAGE TO EXISTING STRUCTURES.
1.2m WIDE CONCRETE FOOTPATH TO NORTHERN BEACHES COUNCIL STANDARD.
PROPOSED GPT
PROPOSED BIO-RETENTION BASIN. REFER DRG. No. 0751 FOR DETAILS
FOR NARRABEEN CREEK CENTRELINE PROFILE, CROSS SECTIONS & DETAILS REFER 048-22C-CK DRAWING SET.
EXISTING CREEK ALIGNMENT
REFER TO 048-22C-CK PLANS FOR CREEK DETAILS.
4m WIDE EMERGENCY SPILLWAY WITH SCOUR PROTECTION.
TO BE DESIGNED AND DOCUMENTED DURING CC STAGE.
RECONSTRUCT FOOTPATH TO EXISTING FOOT BRIDGE. MAX GRADE TO BE 5%.
EXISTING FOOT BRIDGE OVER NARRABEEN CREEK TO REMAIN
PROVIDE SMOOTH TRANSITION WITH EXISTING FOOTPATH.
PROPOSED HOUSE PAD. FINISHED HOUSE LEVELS SHOWN.
2.1m WIDE CONCRETE SHARED PATH TO NORTHERN BEACHES COUNCIL STANDARD.
EXISTING COMMS PIT TO BE RAISED TO MATCH NEW ROAD LEVELS.
CONCRETE VEHICULAR MAINTENANCE ACCESS TRACK.
PROVIDE LOCKABLE REMOVABLE BOLLARDS AROUND CORNER
EXISTING COMMS TO BE ACCURATELY LOCATED PRIOR TO COMMENCEMENT OF ANY WORKS.
PROPOSED CULVERT TO DRAIN INTO NARRABEEN CREEK. REFER DRG.No. 0753 FOR HEADWALL & SCOUR PROTECTION DETAILS
FOR CONTINUATION SEE DRG. No 048-22C-DA-0101
102 DP1225535
6014 DP1072867
5017 DP1071760
DP1161389
PLAN
SCALE 1:250
NOTES:
1. REFER TO DRG. No. 0101 FOR NOTES.
DEVELOPMENT APPLICATION
IPM PROPERTIES
NORTHERN BEACHES COUNCIL
AS SHOWN
AHD
PROPOSED SUBDIVISION OF
LOT 4 D.P. 553816
16 MACPHERSON STREET, WARRIEWOOD
CRAIG & RHODES
TAKE THE LEAD
ROAD & DRAINAGE PLAN
SHEET 1 of 2
048-22
048-22C-DA-0102
G
G 04.06.24 ISSUED FOR DEVELOPMENT CONSENT W.C. W.C.
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C 18.05.23 ISSUED FOR DEVELOPMENT CONSENT L.Mc. K.S.
B 04.05.23 ISSUED FOR DEVELOPMENT APPLICATION L.Mc. N.M.
REV DATE AMENDMENT DESCRIPTION DES. DRN.

ATTACHMENT 2 - NARRABEEN CREEK REHABILITATION WORKS PLANS, REVISION F, PREPARED BY CRAIG AND RHODES

A1

D.A. _ _ _ _ _ _

PROPOSED SUBDIVISION of LOT 4 D.P. 553816 16 MACPHERSON STREET, WARRIEWOOD

NARRABEEN CREEK REHABILITATION WORKS DEVELOPMENT APPLICATION

LOCALITY PLAN

NOT TO SCALE

(SOURCE: NEARMAP MARCH 2023)

DRAWING No.	DRAWING TITLE	REV.
048-22C-CK-0001	COVER SHEET, LOCALITY PLAN & INDEX	F
048-22C-CK-0003	GENERAL LEGEND	E
048-22C-CK-0101	NARRABEEN CREEK PLAN, LONGITUDINAL SECTION & TYPICAL CROSS SECTION	F
048-22C-CK-0741	NARRABEEN CREEK CROSS SECTIONS	F
048-22C-CK-2021	DRAINAGE DETAILS	E
048-22C-CK-0901	SEDIMENT & EROSION CONTROL PLAN	F
048-22C-CK-0902	SEDIMENT & EROSION CONTROL DETAILS	F

F

ROCK SCOUR PROTECTION

1. ROCK USED IN THE SCOUR PROTECTION SHALL CONSIST OF MATERIAL WHICH COMPLIES WITH THESE NOTES AND THE DRAWINGS. THESE REQUIREMENTS APPLY TO BOTH IMPORTED ROCK AND IN-SITU ROCK WHICH IS REUSED.
2. INDIVIDUAL ROCKS SHALL BE FREE FROM CRACKS, CLEAVAGE PLANES, SEAMS AND DEFECTS WHICH WOULD RESULT IN THE BREAKDOWN OF ROCK IN SERVICE
3. ROCK UNITS SHALL BE EITHER SEDIMENTARY ROCK ONLY OR IGNEOUS ROCK ONLY AND, AS A MINIMUM, SHALL SATISFY THE FOLLOWING CRITERIA:
   - ROCK SHALL BE BOTH ROUGH AND ANGULAR
   - ROCK SHALL HAVE A MINIMUM DRY DENSITY OF 2200 kg/m³
   - IGNEOUS ROCK SHALL NOT HAVE MORE THAN 10% (BY VOLUME) OLIVINE MATERIAL AND SHALL EXHIBIT NO ZONES OF SECONDARY ALTERATION SUCH AS CHLORITISTAION.
   - SEDIMENTARY ROCK SHALL HAVE A SODIUM SULPHATE SOUNDNESS WEIGHT LOSS NOT EXCEEDING 25%
4. ROCK SHALL HAVE A SATURATED POINT LOAD STRENGTH INDEX (I15SO) NO LESS THAN 5.0MPa FOR IGNEOUS ROCK AND 1.5MPa FOR SEDIMENTARY ROCK
5. THE RATIO OF THE MAXIMUM DIMENSION TO THE MINIMUM DIMENSION, MEASURED AT RIGHT ANGLES TO THE MAXIMUM DIMENSION, SHALL NOT EXCEED 2.5x
6. THE ROCK UNITS SHALL BE PLACED SUCH THAT THE SPECIFIED REQUIREMENTS FOR SIZE, FINISHED SURFACE SIDE SLOPES, TOP AND TOE LEVELS AND DENSITY REQUIREMENTS ARE SATISFIED. IN ADDITION, ROCKS SHALL BE WEDGED AND LOCKED TOGETHER SUCH THAT THEY ARE NOT FREE TO MOVE. ROCK UNITS SHALL NOT BE ROLLED OF DROPPED IN TO POSITION, THEY SHALL BE PLACED.
7. THE METHOD OF ROCK PLACEMENT SHALL BE SUCH AS TO MINIMISE ITS BREAKDOWN ON HANDLING AND THE PRODUCTION OF FINES.
8. A NON-WOVEN SHALL BE PLACED UNDERNEATH AND BEHIND ALL ROCK ARMOUR AND EXTEND 0.5m ABOVE THE EXTENT OF THE WORKS, OR AS OTHERWISE SHOWN ON THE DRAWINGS. THE GEOTEXTILE IS TO BE LAID ON A HEAVILY TRIMMED BATTER THAT IS FREE OF HOLLOWS OR SHARP OBJECTS
9. GEOTEXTILE LAYERS SHALL EITHER OVERLAP ONE ANOTHER BY 1000mm OR BE SEWN TOGETHER (WITH A NON-BIODEGRADABLE THREAD) WITH AN OVERLAP OF 100mm
10. ROCK AND SUB-ARMOUR SHALL BE PLACED UPON THE GEOTEXTILE IN A LAYER NO LESS THAN 150mm THICK U.N.O. ON DRAWINGS
11. ROCK ARMOUR SHALL BE SELECTIVELY HAND PLACED UPON THE SUB-ARMOUR TO ENSURE A SNUG FIT SUCH THAT INDIVIDUAL ROCKS ARE NOT FREE TO MOVE. THE PLACING OF ANY ARMOUR ROCK SHALL BE COMPLETED IN SUCH A MANNER AS TO MINIMISE THE DISTURBANCE OR DISLODGEMENT OF THE SUB-ARMOUR.
12. THE ARMOUR ROCK AND SUB-ARMOUR ROCK SHALL BE PLACED TO THE CONSTRUCTION TOLERANCES SHOWN ON THE DRAWINGS
13. AT LEAST FOURTEEN (14) DAYS PRIOR TO THE SUPPLY OF ANY ROCK, THE CONTRACTOR SHALL PROVIDE DOCUMENTATION TO DEMONSTRATE THAT THE ROCK TO BE SUPPLIED COMPLIES WITH THE REQUIREMENTS OF THIS SPECIFICATION

EARTH WORKS

1. THE CONTRACTOR SHALL PROVIDE PROPER FENCING, GUARDING & LIGHTING AND OBSERVATION OF ALL EARTHWORKS, TEMPORARY ROADWAYS, FOOTWAYS, GUARDS & FENCES AS MAY BE RENDERED NECESSARY FOR THE ACCOMMODATION AND PROTECTION OF PEDESTRIANS, VEHICLES, ANIMALS & THE PUBLIC
2. ALL EARTHWORKS SHALL BE CARRIED OUT IN THE LOCATIONS SHOWN AND TO THE LEVELS, WIDTHS AND BATTER SLOPES INDICATED ON THE DRAWINGS
3. EXCAVATED MATERIAL NOT MEETING THE SPECIFICATIONS FOR FILL MATERIAL SHALL BE DISPOSED OFF SITE IN AN APPROPRIATE MANNER
4. WHERE EARTHWORKS ARE REQUIRED IN THE VICINITY OF EXISTING SERVICES, THE CONTRACTOR SHALL SUPPORT ALL SERVICES DURING THE WORKS
5. THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, DO ALL THINGS NECESSARY TO DIVERT ANY WATER INTERFERING WITH THE PROCESS OF WORKS, KEEP THE EXCAVATIONS AND TRENCHES FREE FROM WATER WHILE THE WORKS ARE IN PROGRESS AND PREVENT ANY DAMAGE TO THE WORKS BY WATER DUE TO FLOODS OR OTHER CAUSES. THE CONTRACTOR SHALL HAVE PUMPING EQUIPMENT FOR KEEPING THE EXCAVATION OR TRENCHES CONSTANTLY DEWATERED DURING THE TIMES THE WORKS ARE IN PROGRESS. ANY WORK OR MATERIAL DAMAGED BY WATER SHALL BE MADE GOOD BY THE CONTRACTOR.
6. WHERE DIRECTED BY THE SUPERINTENDENT THE BOTTOM OF TRENCHES OR EXCAVATIONS SHALL BE COMPACTED PRIOR TO THE PLACING OF ANY BEDDING OR CONCRETE MATERIALS. SHOULD, IN THE OPINION OF THE SUPERINTENDENT, THE FOUNDATION MATERIAL BE INCAPABLE OF EFFECTIVE COMPACTION, THE MATERIAL SHALL BE REMOVED AND REPLACED WITH APPROPRIATE MATERIAL

EXCAVATIONS

1. ALL TOPSOIL TO BE STRIPPED AND STOCKPILED FOR FUTURE USE. STRIPPED SURFACES ARE TO BE ROLLED AND INSPECTED BY A GEOTECHNICAL ENGINEER PRIOR TO CONTINUING WORKS. DEPTH OF TOPSOIL STRIPPING TO BE BETWEEN 125mm AND 200mm (TO BE CONFIRMED BY THE SUPERINTENDENT PRIOR TO CONSTRUCTION)
2. WHERE ROCK IS EXPOSED DURING EXCAVATION, THE CONTRACTOR SHALL CEASE EXCAVATION AT THIS LOCATION AND CONTACT THE SUPERINTENDENT WHO WILL THEN ADVISE ON THE LEVEL TO WHICH THE EXCAVATION IS TAKEN

FILL

1. FOUNDATION MATERIAL DEEMED BY THE SUPERINTENDENT AS UNSUITABLE TO BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS LIST BELOW
2. UNLESS OTHERWISE APPROVED OR SPECIFIED, ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING:-
   - FREE FROM ORGANIC & PERISHABLE MATTER
   - MAXIMUM PARTICLE SIZE 75mm
   - PLASTICITY INDEX BETWEEN 2% AND 20%
   - CBR > 10
3. SELECT FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200MM LOOSE THICK LAYERS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (±2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289E3.1 (LATEST EDITION) OF NOT LESS THAN THE STANDARD DRY DENSITY ON ACCORDANCE WITH AS1289E3.1 (LATEST EDITION) SHOWN ON THE DRAWING
4. COMPACTION CONTROL TESTING SHALL BE CARRIED OUT BY & AT THE COST OF THE CONTRACTOR TO CONFORM WITH LEVEL 1 AS DEFINED IN AS3798 (LATEST EDITION)
5. REPLACEMENT SUBGRADE MATERIAL MAY COMPRISE GRANULAR FILL MATERIAL & SHOULD HAVE A CBR OF AT LEAST 10% REPLACEMENT. SUBGRADE SHALL BE PLACED ON PROOF ROLLED SUBGRADE IN HORIZONTAL LAYERS OF 200mm TO 250mm MAXIMUM LOOSE THICKNESS DEPENDING ON THE SIZE OF EQUIPMENT) AND COMPACTED TO A MINIMUM DRY DENSITY OF (MDDR) OF 98% STANDARD, AT MOISTURE CONTENT WITHIN 2% OF OPTIMUM MOISTURE CONTENT
6. WHERE EXCAVATED MATERIAL IS TO BE USED FOR FILLING, THE MATERIAL SHALL BE INSPECTED & APPROVED BY THE SUPERINTENDENT PRIOR TO USE.

DEVELOPMENT APPLICATION

REV	DATE	AMENDMENT DESCRIPTION	DES.	DRN.
F	22.11.23	ISSUED FOR DEVELOPMENT CONSENT	T.F.	K.S.
E	15.11.23	ISSUED FOR DEVELOPMENT CONSENT	T.F.	K.S.
D	26.05.23	ISSUED FOR DEVELOPMENT CONSENT	S.T.	N.M.
C	19.05.23	ISSUED FOR DEVELOPMENT CONSENT	L.Mc.	K.S.
B	04.05.23	ISSUED FOR DEVELOPMENT APPLICATION	L.Mc.	N.M.
A	14.04.23	ISSUED FOR DEVELOPMENT APPLICATION	L.Mc.	L.Mc.

Authorised to issue by: Signature

Principal: IPM PROPERTIES
LGA: NORTHERN BEACHES COUNCIL
Scale: AS SHOWN
Datum: AHD

Project: PROPOSED SUBDIVISION OF LOT 4 D.P. 553816 16 MACPHERSON STREET, WARRIEWOOD

CRAIG & RHODES TAKE THE LEAD

ABN 77 050 209 991 ACN 050 209 991
Suite 7.01, Level 7, 3 Rider Boulevard, Rhodes, NSW, 2138
PO Box 3220, Rhodes NSW 2138
Tel: (02) 9955 1855
reception@crhodes.com.au
www.craigandrhodes.com.au
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Drawing Title: COVER SHEET, LOCALITY PLAN & INDEX

Job No: 048-22
Drawing No: 048-22C-CK-0001
Revision: F

A1

LEGEND - CIVIL

DESCRIPTION	PROPOSED	EXISTING
LIMIT OF CONSTRUCTION		
CIVIL WORKS BOUNDARY		
SITE WORKS BOUNDARY		
DESIGN CONTOUR - MAJOR	49.0	49.0
DESIGN CONTOUR - MINOR		
MASONRY RETAINING WALL		
ROCK RETAINING WALL		
FENCE		
LOCKABLE GATE		
BOLLARD		
GUIDE POST		
SITE FENCE		
GUARD RAIL		
BATTER (EARTHWORKS) TOP BATTER / BATTER TICK / BTM. BATTER		
CENTRELINE / CHAINAGE	CH 0.00	
KERB LINE		
KERB LINE (FUTURE)		
KERB RETURN LABEL	KR-01	
SURFACE LEVEL	RL 90.00	RL 90.00
VEHICULAR CROSSING	VC	
DRIVEWAY		

LEGEND - PAVEMENT

DESCRIPTION	PROPOSED	EXISTING
ROAD		
TEMPORARY		
FOOTPATH		
TURF LINING IN ROAD VERGE		

LEGEND - SURVEY

DESCRIPTION	PROPOSED	EXISTING
TREES		
EXISTING TREES TO BE REMOVED (MUST BE CONCORDANT WITH ARBORIST REPORT)		

LEGEND - DRAINAGE

DESCRIPTION	PROPOSED	EXISTING	FUTURE	TEMPORARY
SUBSOIL DRAINAGE LINE				
SUBSOIL DRAINAGE FLUSHING POINT	FP			
STORMWATER DRAINAGE LINE				
RCBC CULVERT LINE				
FLOW DIRECTION AND PIPE SIZE	Ø375	Ø375	Ø375	Ø375
STUB, CAP AND BURY FOR FUTURE CONNECTION				
TEMPORARILY BLOCK PIPE				
STRUCTURAL STORMWATER PIT (LINTEL/GRATE VARIABLE)				
STORMWATER PIT - ONGRADE				
STORMWATER PIT - SAG				
STORMWATER PIT - SURFACE INLET				
STORMWATER PIT - JUNCTION PIT				
STORMWATER PIT LABEL (DRAINAGE LINE No. \ DRAINAGE PIT No.)	00/00	00/00	00/00	00/00
CONCRETE HEADWALL WITH RIPRAP SCOUR PROTECTION				
STACKED ROCK HEADWALL WITH RIPRAP SCOUR PROTECTION				
OVERLAND FLOW PATH				
CATCHMENT DIRECTION				
EARTHBANK (LOW FLOW)				
SWALE				
ROOF WATER OUTLET TO KERB				
ROOF WATER CONNECTION TO REAR OF LINTEL				
BASIN FENCE				
BASIN BIO FILTER				

LEGEND - SERVICES

DESCRIPTION	PROPOSED	EXISTING	FUTURE
OH ELECTRICAL LINE	E	E	E
ELECTRICAL LINE	E	E	E
ELECTRICAL PILLAR			
STREET LIGHT			
POWER POLE	PP	PP	
ELECTRICAL SUBSTATION			
WATER LINE	W	W	W
WATER HYDRANT			
WATER STOP VALVE	X	X	
RECYCLE WATER	RW	RW	RW
COMMUNICATION LINE	C	C	C
GAS LINE	G	G	G
SEWER LINE	S	S	S
SEWER RISING MAIN	RM	RM	RM
SEWER LINE CONCRETE ENCASED	S	S	
SEWER MAINTENANCE HOLE			
SEWER MS/TMS			
NBN LINE	NBN	NBN	NBN
TELECOMS LINE	TEL	TEL	TEL
FIBRE OPTIC LINE	F	F	F
COMBINED SERVICES TRENCH			

ABBREVIATIONS

RKG	ROLL KERB AND GUTTER
K&G	KERB AND GUTTER
KO	KERB ONLY
ES	EDGE STRIP
DD	DISH DRAIN
PR	PRAM RAMP
VC	VEHICULAR CROSSING
RW	RETAINING WALL
S.G.G.P.	STANDARD GRATED GULLY PIT
G.S.I.P.	GRATED SURFACE INLET PIT
JP	JUNCTION PIT
HW	HEADWALL
GPT	GROSS POLLUTANT TRAP
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
TFSL	TOP FINISHED SURFACE LEVEL
BFSL	BOTTOM FINISHED SURFACE LEVEL
RCP	STEEL REINFORCED CONCRETE PIPE
RRJ	RUBBER RING JOINT
C1 or C2	PIPE CLASS
MH	MAINTENANCE HOLE
MS	MAINTENANCE SHAFT
TMS	TERMINAL MAINTENANCE SHAFT
RP	RODDING POINT
HYD	HYDRANT
SV	STOP VALVE
SAG	LOW POINT
CREST	HIGH POINT
PP	POWER POLE

DEVELOPMENT APPLICATION

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B	04.05.23	ISSUED FOR DEVELOPMENT APPLICATION	L.Mc.	N.M.
A	14.04.23	ISSUED FOR DEVELOPMENT APPLICATION	L.Mc.	L.Mc.

Authorised for Issue by:

Signature:

Principal: IPM PROPERTIES

L.G.A.: NORTHERN BEACHES COUNCIL

Scale: AS SHOWN

Datum: AHD

Project: PROPOSED SUBDIVISION OF LOT 4 D.P. 553816 15 MACPHERSON STREET, WARRIEWOOD

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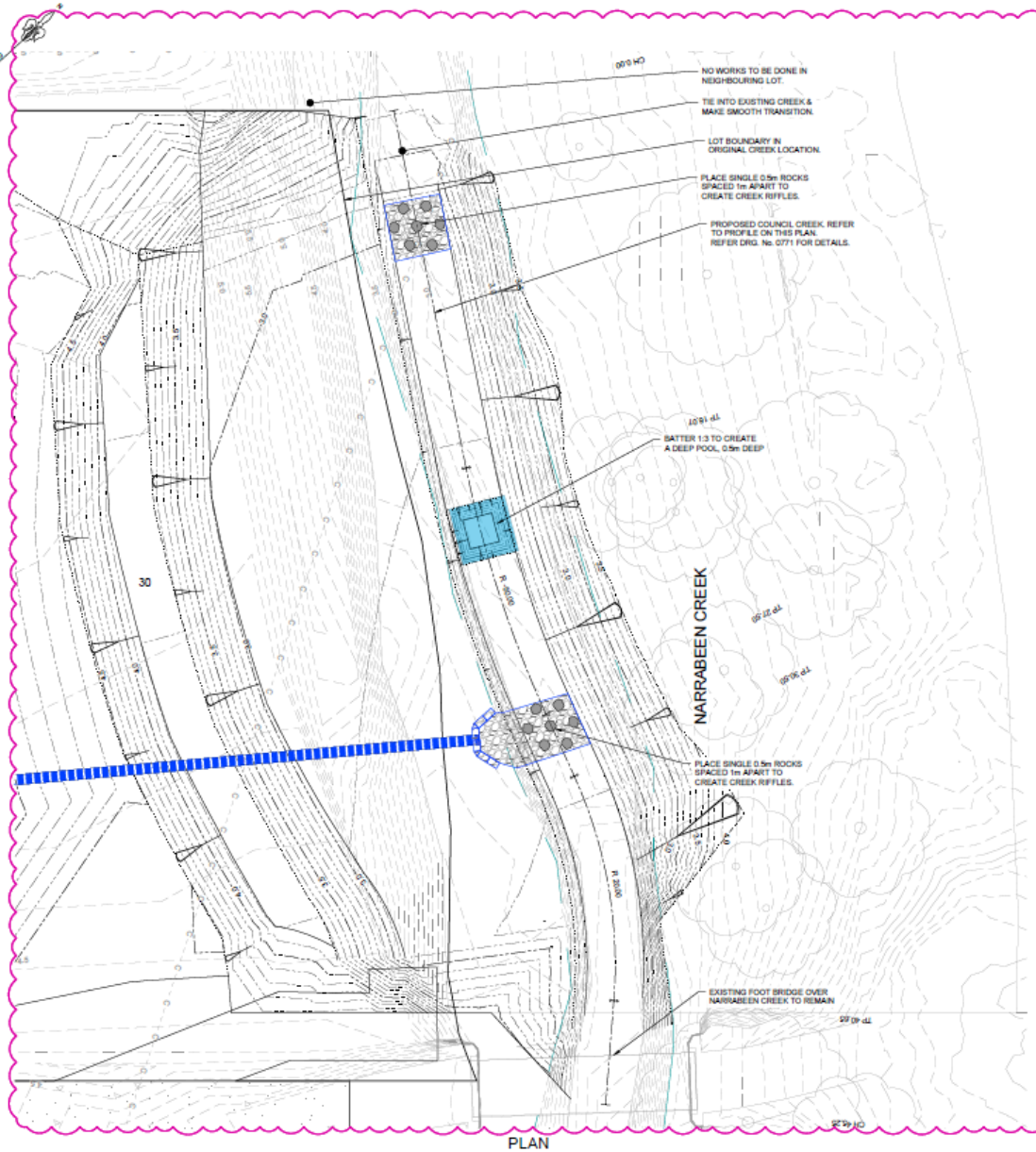
Job No.: 048-22

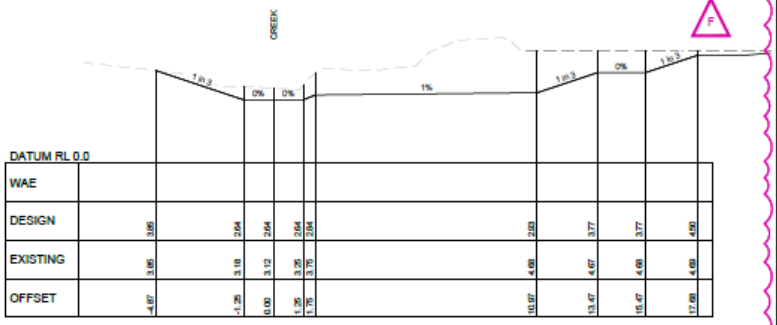
Drawing No.: 048-22C-CK-0003

Revision: F



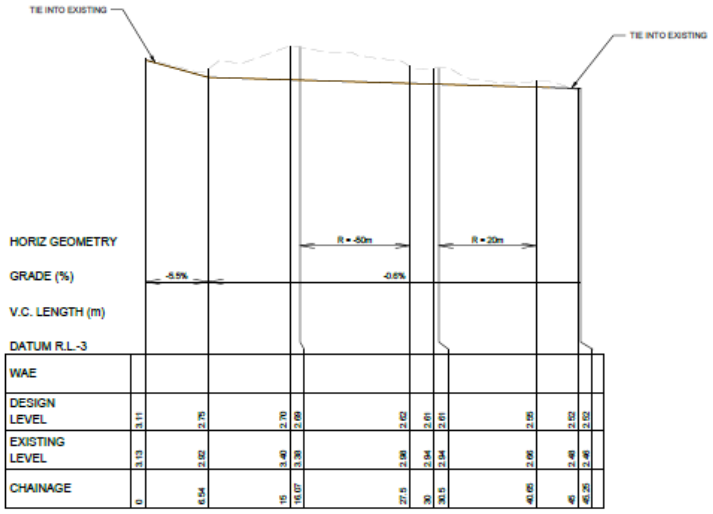
PLAN

SCALE 1:100



NARRABEEN CREEK - TYPICAL CROSS SECTION

SCALE - 1:100



NARRABEEN CREEK - LONGITUDINAL SECTION

HORIZONTAL SCALE - 1:250
VERTICAL SCALE - 1:50

NOTES:

1. REFER TO DRG. No. 0003 FOR LEGEND & ABBREVIATIONS
2. REFER TO NORTHERN BEACHES COUNCIL FOR STANDARD DETAILS & DRAWINGS.

0 2.5 5 7.5 10 15 20 25m
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0 1 2 3 4 6 8 10m
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0 0.5 1 1.5 2 3 4 5m
1:50 @A1

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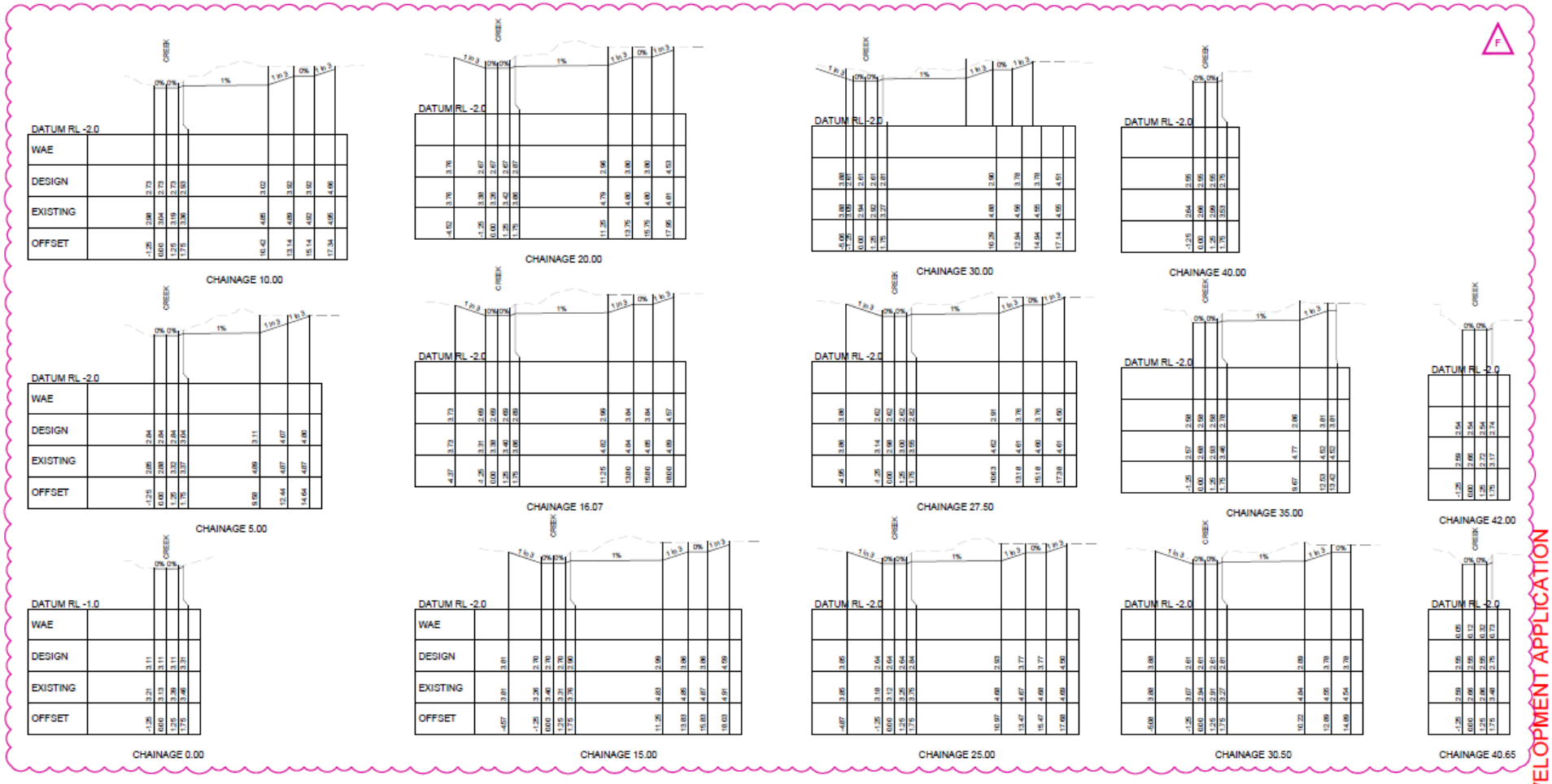
Drawing No.: 048-22C-CK-0101
Revision: F

A1



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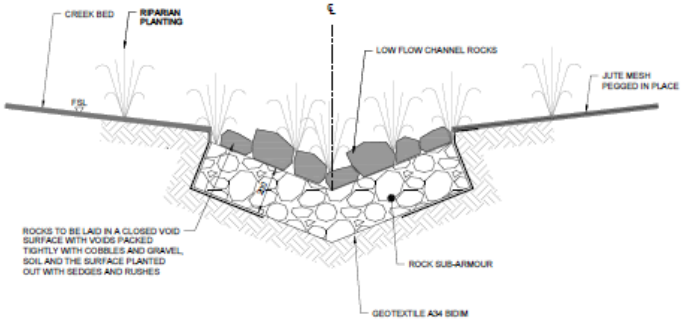
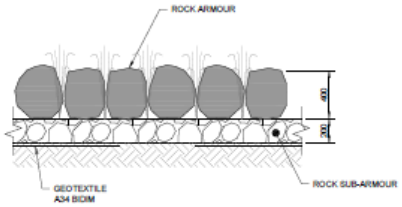
A1

NOTE
STORMWATER OUTLETS TO BE ORIENTATED IN THE DIRECTION OF NATURAL FLOW OF THE RECEIVING WATER COURSE AND NOT OBSTRUCTING FLOW FROM UPSTREAM. OUTLETS TO BE INSTALLED IN ACCORDANCE WITH NSW OFFICE OF WATER REQUIREMENTS

NOTE
ROCK SIZES AND DEPTH ARE SHOWN AS INDICATIVE ONLY. TO BE CONFIRMED IN DESIGNED DURING DETAIL DESIGN.



LOW FLOW CHANNEL
DETAIL A
NTS -



STANDARD ARMOUR
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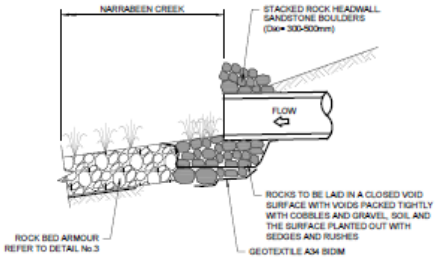

STORMWATER OUTLET
DETAIL B
NTS -

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Drawing No: 048-22C-CK-0771
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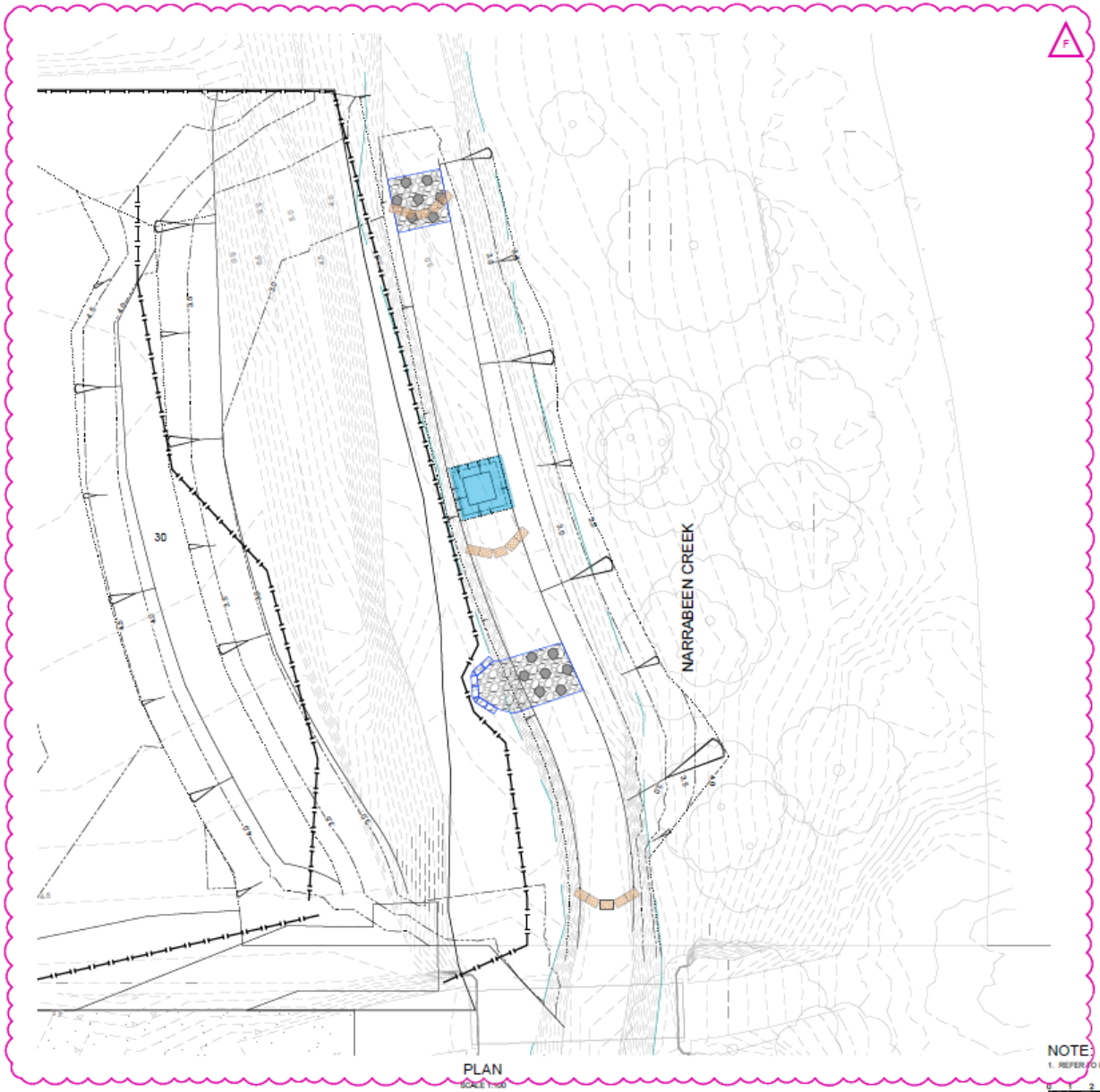
A1

LEGEND

- SEDIMENT FENCE
- SITE FENCE
- GEOTEXTILE INLET FILTER
- KERB INLET SEDIMENT TRAP
- STRAW BALE FILTERS
- EXISTING TREES TO BE RETAINED



PLAN
SCALE 1:100

NOTE:
1. REFER TO DRG. No. 0902 FOR DETAILS.

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Job No: 048-22

Drawing No: 048-22C-CK-0901

Revision: F

ATTACHMENT 3 - BIODIVERSITY MANAGEMENT PLAN PREPARED BY AEP

Biodiversity Management Plan – 16 Macpherson St, Warriewood NSW

Prepared For: Warrimac Pty Ltd

Prepared By: Anderson Environment and Planning

Date: October 2023

AEP Reference: 2564.01

Revision: 04

Table of Contents

1.0 Introduction 2
1.1 Biodiversity Management Plan Objectives 2
1.1.1 Proposal 2
1.1.2 Supporting Reports 2
1.2 BMP Lands 2
1.3 Existing Site Conditions 2
2.0 Regeneration Approach 2
3.0 Council Standard Creek Design and Vegetated Riparian Zone 3
4.0 Management Zones 3
4.1.1 Zone 1: Reconstruction - Aquatic Zone 3
4.1.2 Zone 2: Reconstruction – PCT 1795 *Coastal flats Swamp Mahogany Forest* 3
5.0 Regeneration Targets 4
6.0 Translocation of *Syzygium paniculatum* 4
6.1 Aims Treatment / Monitoring Plan 4
6.1.1 Translocation Plan 4
6.1.2 Monitoring Program 4
7.0 Regeneration Management 4
7.1 Baseline Data 4
7.2 Site Preparation 4
7.3 Vegetation Clearing 5
7.4 Weed Management 5
7.5 Fauna Management 5
8.0 Project Management 5
8.1 Monitoring 5
8.1.1 Baseline Data 5
8.1.2 Biannual Monitoring 5
8.2 Reporting 6
8.3 Future Management of BMP Lands 6
9.0 References 13

Tables

Table 1 – Summary of Regeneration Targets for Stage 1 4
Table 2 - Weed Control Activities 6
Table 3 – Year 1 Targets and Schedule of Works 7
Table 4 – Year 2 Targets and Schedule of Works 8
Table 5 – Year 3 Targets and Schedule of Works 8
Table 6 – Year 4 Targets and Schedule of Works 9
Table 7 – Year 5 Targets and Schedule of Works 9

Figures

Figure 1 – Site Location 10
Figure 2 – Ground – truthed Vegetation 11
Figure 3 – Management Zones and Indicative Monitoring Points 12

Appendices

Appendix A – Proposed Development
Appendix B – Regeneration Species List
Appendix C – Priority Weeds of Greater Sydney
Appendix D – BMP Lands Signage
Appendix E – CV

1.0 Introduction

At the request of Warrimac Pty Ltd (the client), Anderson Environment & Planning (AEP) have undertaken the necessary investigations to inform the production of a Biodiversity Management Plan (BMP) to schedule reconstruction measures associated with a proposed residential subdivision and dwelling construction at 16 Macpherson Street, Warriewood, NSW (Subject Site).

The BMP schedules reconstruction works for the creekline corridor located within the proposed development. The varying stages of regeneration are applicable to ensure minimal construction impacts on the regeneration during construction.

1.1 Biodiversity Management Plan Objectives

The purpose of this plan is to;

- Reinstate a standard creek profile creating both ecological and hydraulic function within Narrabeen Creek.
- To provide a suitable location for the translocation of *Syzygium paniculatum* (Magenta Lilly Pilly) trees located within the existing riparian corridor.
- Regeneration vegetation in the north east of the Subject Site.

The BMP requires action to regenerate riparian lands while creating safe space within the proposed subdivision, incorporating best practice management of vegetation and fauna within the BMP Lands.

The overall BMP objectives are to provide:

- Education of the Plant Community Type (PCT) within the Subject Site;
- Reconstruction using council's standard creek design;
- Improving water quality and aquatic habitat;
- To assess and adjust weeding and planting regimes across the BMP;
- Areas of habitat for native flora and fauna, including locally occurring threatened species; and
- A long-term environmental conservation area, in a state of Natural Regeneration requiring nominal ongoing maintenance.

1.1.1 Proposal

The proposed development involves a residential subdivision covering the entirety of the Lot. The land clearing required for the proposed development involves the removal of 0.21ha native vegetation from the Subject Site.

The proposal contains 28 residential lots and 2 lots containing an internal road, the reconstruction of Narrabeen Creek and the riparian corridor.

Figure 1 and **2** shows the site location and ground-truthed vegetation respectively and **Appendix A** shows the proposed development.

1.1.2 Supporting Reports

The BMP must be read and implemented in conjunction with the following reports:

- AEP (2023) *Ecological Assessment Report for a Proposed Residential Subdivision at 16 Macpherson Street, Warriewood, NSW*.;

1.2 BMP Lands

The BMP lands comprise 0.14ha and contain;

- The existing severely modified and highly degraded Narrabeen Creek; and
- A portion of the Subject Site that is proposed for riparian corridor reconstruction works.

Within both sections there are scattered patches of highly degraded PCT 1795, exotic pastures and cleared land.

The section of Narrabeen Creek proposed to be managed under the BMP is highly disturbed and will require plantings and erosion and sediment controls to ensure the banks of the creek remain stable and natural flow and ecological function are maintained. The creek present within the BMP Lands has limited watercourse features as identified in Department of Planning, Industry and Environment (2020), *Natural Resources Access Regulator Waterfront Land Tool*, such as pools, riffles, meanders and aquatic vegetation.

The BMP will utilise the principles within Northern Beaches Creek profiles, to reinstate natural features within the proposed management zones while regenerating the aquatic and riparian ecosystems. It is proposed that the standard creek profile will be regenerated with aquatic species within the creek line to toe of bank and PCTs 1795 for remaining BMP lands.

The main aim of the BMP lands is to educate the community and promote community awareness and knowledge of both flora and fauna in the area. This has been shown to develop community ownership of environmental zones and protection. Community ownership and knowledge reduces vandalism and garden and other waste dumping as the community feels a sense of ownership.

The BMP lands are proposed to be managed under a 5-year Biodiversity Management Plan, including standard creek design, plantings, translocation of threatened species, weed management, pest and disease management, installation of habitat, educational signs, footpaths, viewing area and frog ponds.

To ensure protection of the downstream riparian area, measures such as erosion and sedimentation controls are to be installed prior to construction commencing, and regularly inspected and maintained (weekly or after rain events) during construction works.

The Water Sensitive Urban Design (WSUD) measures are incorporated within the detailed design of each stage to ensure Narrabeen Lagoon Catchment receptor is maintained and enhanced for both quality and quantity.

In accordance with Section 201 of the *Fisheries Management Act 1994* (FM ACT), a permit is required to undertake the proposed works within the second order stream to reconfigure (dredge and reclaim) the creek profile and divert (block fish passage) during construction works.

There are no Asset Protection Zones (APZs) located within the BMP lands.

1.3 Existing Site Conditions

The Subject Site was inspected and floristic surveys were undertaken by AEP in June 2022. These inspections included general site reconnaissance and traversal to verify previously mapped vegetation communities and determine vegetation / flora / fauna assessment, location of modified channel, erosion and deposition of the BMP lands as well as the broader site.

Figure 2 shows ground-truthed vegetation boundaries. **Figure 3** outlines the proposed management zones and areas impacted by the development.

2.0 Regeneration Approach

The BMP schedules differing ecological approaches to the regeneration of the BMP Lands by implementing the principles of the Society for Ecological Restoration Australasia *National standards for the practice of ecological restoration in Australia* (SERA 2021, ed. 2.2). This approach utilises three integrated restoration techniques to achieve the end goal of Natural Regeneration. Approaches have been assigned to BMP Land areas based on their history of disturbance:

1. Reconstruction Approach – this approach is where a site is highly degraded and has limited to no ability to regenerate naturally.
2. Facilitated Regeneration Approach – this approach is when a site is in moderate condition, and will naturally regenerate with minimal plantings and weed management.
3. Natural Regeneration - this approach is where damage is relatively low, and pre-existing biota should be able to recover after cessation of degrading practices. It requires limited to no intervention, with weeding being the only task undertaken to encourage continual natural regeneration.

The aim for the entirety of the BMP lands is to achieve Natural Regeneration within five (5) years.

This is based on general condition at the point of assessment, where the Ecologist determines the most appropriate level of regeneration based on the Biodiversity Assessment and random meander of the Subject Site.

The National Guidelines also require that at commencement of approved regeneration works the first step is to gather baseline data. It is undertaken at the commencement of the BMP to ensure the most appropriate measure are used to ensure regeneration can occur. Natural events such as drought high rainfall, fire, floods, etc can all have significant impact on the condition of vegetation within a site. Hence the guidelines require regeneration areas be broken into the three categories and detailed baseline data be collected at commencement.

3.0 Council Standard Creek Design and Vegetated Riparian Zone

Narrabeen Creek within the BMP lands has been ground-truthed to be a Stream Order two. The creek is highly degraded, eroded and modified by past and present uses. The Department of Planning and Environment (Water) (DPE - Water) (formally known as Natural Resources Access Regulator) requires a 20m Vegetated Riparian Zone (VRZ) on a Stream Order 2.

To provide the VRZ on the stream in its current state, it is highly unlikely to provide suitable aquatic habitat or water quality to the Narrabeen Lagoon Catchment. The creek does not show many of the key features of a healthy river system:

- Defined bed and bank;
- Meanders;
- Pools;
- Riffles; and
- Aquatic vegetation.

As such it is proposed that Narrabeen Creek within the RE1 zone land is reinstated with Northern Beaches Council standard creek profile and vegetated riparian zone that will provide suitable aquatic habitat and improve water quality to the Narrabeen Lagoon Catchment.

Plate 1 shows a cross section of watercourse to assist with the location of each zone.

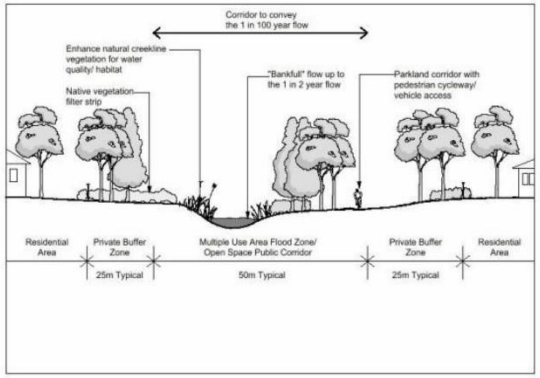

Plate 1 - Cross Section of Creekline Corridor (Lawson & Treloar, 2001)

A review of the current literature showed that reinstated a standard creek profile within the Narrabeen Creek would ensure the above key features are present within the creek, and as a result improved water quality and habitat for both terrestrial and aquatic organisms will be provided. **Plates 2 - 4** show photos of standard creek design examples.

This BMP provides the concept plan for the channel design, detailed engineering plans will be prepared prior to Construction Certificate.

Plate 2 – Low Flow Channel and Pool (Brisbane City Council, 2003)

Plate 3 – Low Flow Channel (Australian Wetland Consulting, 2018)

Plate 4 – Bundamba Creek Restoration works (Australian Wetland Consulting, 2018)

4.0 Management Zones

The BMP lands will be managed in two (2) Management Zones (MZs) to clearly identify of objectives and targets, **Figure 3** shows the MZs.

4.1.1 Zone 1: Reconstruction - Aquatic Zone

This zone is located in the low flow channel to top of toe, consisting of a width of 1m – 2m; it will include the reinstating of aquatic vegetation and habitat such as snags.

The Reconstruction Approach is being utilised in MZ1. Planting of native species will assist with meeting the Targets outlines in **Section 5.**

Weeding as defined in **Table 2**, will effectively control priority species and areas through appropriate methods to eliminate highly competitive weeds from an area.

All works should be undertaken to ensure bed and bank stability, provisions of aquatic habitat for both flora and fauna.

As stated, the Reconstruction Approach requires active interventions, the tasks of which will be determined by the Bush Regeneration Contractor (BRC) and may involve the following tasks:

- Planting;
- Installation of snags;
- Weeding;
- Watering;
- Mulching (if required); and
- Replacement of dead plants (1:1).

The BMP aims to move into Natural Regeneration Approach by the end of Year 5.

4.1.2 Zone 2: Reconstruction – PCT 1795 *Coastal flats Swamp Mahogany Forest*

MZ2 is located from the top of toe to the end of the riparian zone. MZ2 will be planted out with PCT 1795 - *Coastal flats Swamp Mahogany Forest*.

The Reconstruction Approach is being utilised in this section and the planting of native species form PCT 1795 will assist with meeting the Targets outlines in **Section 5.**

Weeding as defined in **Table 2** (effectively control priority species and areas through appropriate methods to eliminate highly competitive weeds from an area).

All works should be undertaken to ensure bed and bank stability, provisions of terrestrial habitat for both flora and fauna.

Signage is to be installed along the high bank providing information on the community and fauna species likely to use the banks and aquatic vegetation.

As stated, the Reconstruction Approach requires active interventions, the tasks of which will be determined by the Bush Regeneration Contractor (BRC) and may involve the following tasks:

- Planting;
- Installation of habitat;
- Weeding;
- Watering;
- Mulching (if required); and
- Replacement of dead plants (1:1).

The BMP aims to move into Natural Regeneration Approach by the end of Year 5.

5.0 Regeneration Targets

The Reconstruction Approach will be used across the entire BMP Lands and the following targets have been designed to be measurable, providing both quantitative and qualitative data on species abundance and cover for the vegetation communities within the BMP Lands.

Weeds have a significant impact on structural integrity of vegetation communities. Flora surveys identified 27 exotic species, with the following list being the most prevalent within the vegetation communities on site;

Lantana (*Lantana camara*), Small-leaved privet (*Ligustrum sinense*), Black Cobbler's Peg (*Bidens pilosa*) and Asparagus Fern (*Asparagus aethiopithicus*).

Exotic grasses comprise *Paspalum dilatatum* and *Ehrharta erecta* (Panic Veldtgrass)

Some of these species are identified as priority weeds for Greater Sydney. Predominantly exotic grasses and other herbaceous weeds will be the focus of weed management activities.

To achieve a Natural Regeneration throughout the entire BMP lands within five (5) years targets have been set within **Table 1. Tables 3** to **7** also summaries the works schedule required to achieve the targets.

Table 1 – Summary of Regeneration Targets for Stage 1

Year	Abundance of Natives (%)	Cover of Native (%)	Cover of Biosecurity Weeds (%)	Cover of Other Priority Weeds (%)
1	30	30	<70	<70
2	40	45	<45	<40
3	55	55	<30	<25
4	60	65	<20	<15
5	70	80	<10	<10

6.0 Translocation of *Syzygium paniculatum*

Syzygium paniculatum is an Endangered species due to numerous threats including low genetic diversity, small and isolated populations, habitat clearing, competition with weeds. Translocation of this species will minimise impacts to this species on site and will assist in maintain the local population on site.

6.1 Aims Treatment / Monitoring Plan

6.1.1 Translocation Plan

The individual species of *Syzygium paniculatum*, identified within the Subject Site are proposed to be translocated.

Translocation is proposed to follow the below program:

- Trees will be tagged and health assessment undertaken;
- Civil contractor teams with supervision from the Project Arborists will dig out root balls of viable plants and they will be temporarily stored on site during reconstruction period before being translocated to MZ 2; and
- The trees will be watered, mulched and left for three-month establishment period.

6.1.2 Monitoring Program

Annual reports will be provided to Council reporting on the progress of the treatment plan address:

- Health of trees;
- Percentage of new foliage; and
- Growth.

7.0 Regeneration Management

7.1 Baseline Data

Indicative monitoring points have been identified within the BMP Lands (refer **Figure 4**). The final location of the monitoring points is to be determined at commencing of the BMP.

Baseline data is to be collected at monitoring points at commencement. This data is collected at commencement to ensure the data is reflective of the conditions at commencement. Vegetation health, structure and composition can change over time, environmental impacts such as fire, drought or flood can have a significant impact on the communities and hence baseline data must be collected at commencement to ensure proposed methods and targets are achievable.

Baseline data consists of:

- Species diversity (both native and exotic);
- Species Abundance (both native and exotic);
- Overall health of the BMP Lands;
- Photos in north, east, south and west aspects;
- Record incidental fauna; and
- Required changes in methodology for regeneration.

The Monitoring Points established for the baseline surveys will then be monitored on a biannual basis, as per 8**.1 Monitoring**.

7.2 Site Preparation

Prior to the commencement of regeneration, the BMP Lands must be prepared. The following works have been recommended to assist in site preparation:

- Establishment of pathogens and diseases controls. Diseases which could affect the site include Myrtle rust (*Puccinia psidii*), affecting Myrtaceous plants, including *Melaleuca* species, and Amphibian Chytrid fungus disease, Chytridiomycosis, caused by Chytrid fungus (*Batrachochytrium dendrobatidis*). Appropriate hygiene controls are to be employed to minimise the chances of any such introduction occurring. This may include a hygiene station equipped with sterilizing agents and cleaning equipment to clean boots, tools and machinery. Response plans are needed to be designed and implemented to mitigate impacts in the event of disease or pathogen outbreaks;
- All extant rubbish/waste is to be removed from BMP lands including farm fencing and structures. The need to remove such material should be assessed on a case-by-case basis as in some instances the material is inert, such as concrete, rocks and timber posts, etc. Such material may inadvertently provide geomorphic stability;
- Clearly mark native vegetation for retention and approved removal;
- Install temporary fence around the BMP Lands, and clearly mark as a "No Go Area" prior to commencement of civil works;
- Fencing should have clearly visible signage erected at key entry points to BMP;
- Implement erosion and sediment control measures in accordance with specifications set out in the latest edition of the Landcom publication "Soils and Constructions – Volume 1" (The Blue Book);
- Construction of the council's standard creek profile;
- Vegetation clearing;
- Establish monitoring and photo points;
- Collection of baseline data;
- Primary weed removal;
- Installation of ground habitat (logs and rocks);
- Planting of Vegetation (see **Appendix B** for a detailed species list). All plant stock must be provenance specific seed/ material collected from locally endemic species, grown by suitably experienced and qualified nurseries, and hardened-off before planting. This will ensure the

structure and composition of these communities will meet the targets set; and

- Mulching and watering.

7.3 Vegetation Clearing

For the clearing phase, retained vegetation will be delineated by safety bunting flags, fencing and signage indicating environmental protection zone, which will still allow fauna to egress the development area as needed. Following the completion of clearing works, permanent delineation features such as logs should be installed to protect the retained vegetation during operational phase of the development;

- Vegetation clearing should be timed to avoid cold weather periods where overnight temperatures are forecast to be less than 12°C. Cold weather is likely to make it difficult for resident hollow dependent fauna to successfully relocate. This is particularly relevant for low body-weight species;
- A staged approach to clearing is to be undertaken to provide fauna the opportunity to disperse outside the area of impact. Staging to include Phase 1 Clearing: Underscrubbing, Phase 2 Clearing: Removal of non-habitat trees, and Phase 3 Clearing: Removal of habitat and connecting trees;
- All clearing works (phase 1-3) to be undertaken under the supervision of the Project Ecologist;
- Clearing should occur in a direction from previously disturbed lands towards retained lands;
- Implement clearing protocols, including pre-clearance surveys to identify habitat and vegetation to be retained;
- All clearing works to be attended by a suitable equipped and experienced ecologist to deal appropriately with any displaced fauna species;
- All hollow bearing features will be sectionally lowered by tree climbers (where safe to do so);
- Any fauna rescued during vegetation clearing is to be assessed for injuries, and subsequently released to a suitable nearby location; this may require holding fauna until dusk for release in accordance with relevant animal ethics licencing and standards;
- If any fauna is injured during vegetation clearing, they are to be taken promptly to a nearby veterinarian or suitable wildlife carer contact;
- In addition, prior to clearing of any vegetation, an ecologist is to inspect the area for any signs of resident fauna requiring attention, and in particular nesting birds. Where such is identified, appropriate strategies are to be developed and instigated to minimise impacts.
- Pre-clearance surveys to include diurnal surveys, stagwatching and nocturnal surveys;
- Civil Construction staff to be inducted into pre-clearing and clearing protocols, and to identify environmental features for protection;
- Any suitable hollows recovered during clearing works should be reconditioned into suitable hollows and installed in retained lands in addition to the manufactured nest boxes; and
- All cleared vegetation is to be mulched on site and spread to help stabilise any exposed soil and minimise offsite movement of biomass. Fallen timber and hollow logs identified to be retained to be relocated into the retained lands;

7.4 Weed Management

Weed Control works within each Management Zone are to be undertaken by a qualified bushland regeneration team using industry standards (summary provided in **Table 2**).

Any reproductive material of weeds, including weeds that can spread vegetatively or seeds, must be taken off site to be disposed of at an appropriate local waste collection service. No weed material with the potential of spreading may be stockpiled within the Subject Site, or the BMP Lands.

The *Biosecurity Act 2015* outlines several 'duties'; the general biosecurity duty, and additional duties under mandatory measures, regional measures, prohibited matter or biosecurity zone. Specific actions for these measures may be required. Weed control is required to occur in the following sequence:

1. **Primary Weeding** – this is where weeds are removed from Management Zones.
2. **Consolidation** – over the next few months, the weed control zones will require monthly visits to remove weeds that are regenerating and/or have grown in response to the disturbance and are competing with planted and regenerating native plants. These visits are essential, otherwise the weeds will recolonise, dominate and inhibit the regeneration of native species.
3. **Maintenance Weeding** – After the sixth-month and will continue on a monthly basis, due to woody weeds, and other annual weeds being problematic within the locality.

This interval will be evaluated based onsite condition during each monitoring period. Weed control works across the site are to be undertaken over the maintenance period of five (5) years, however given the adaptive management approach, this time-frame is flexible, and may need to be extended based on changing site conditions and results indicating management zones have reached targets set out in this BMP.

7.5 Fauna Management

Macropods and possums are known as occurring in the local area. Therefore, protection guards should be placed around plantings so that revegetation efforts within BMP lands are not compromised by grazing. If monitoring within management zones indicates pest species pose notable impediments to achieving the aims of the BMP (i.e., through excessive browsing, etc.), then management actions will be reviewed to address these issues.

Incidental fauna records are to be undertaken during monitoring surveys and reported.

8.0 Project Management

Establishment of monitoring points and compliance checking of other aspects within this BMP will be the responsibility of the Project Ecologist working with the Civil Contractor.

The client will be responsible for the engagement of a suitably qualified Bush Regeneration Contractor to undertake weed control and planting works outlined in this BMP.

Bush Regenerator(s) or company(s) shall have the following qualifications;

- Australian Association of Bush Regenerators (AABR) Accreditation. The Bush Regenerators shall hold a current AQF3 qualification.
- Site Supervisor must have demonstrated minimum of 2 years' experience in the bush regeneration or related field and must have experience at a supervisory level in providing training, supervision and technical advice to staff, clients, volunteers and members of the public.
- The Site Supervisor must hold a current AQF 3 qualification or higher and must have completed the Bush Regeneration Level IV Certificate or have a diploma or degree in a field related to natural resource management.

The Project Ecologist will be responsible for the establishment of monitoring points within the BMP lands along with collection of baseline data that will be monitored against this over the three-year period of this BMP with the overall targets. The Project Ecologist will be responsible for monitoring and reporting on weed management, and Regeneration Approach success.

8.1 Monitoring

Monitoring will occur at commencement and biannual basis at the proposed monitoring points (refer **Figure 3**).

8.1.1 Baseline Data

Baseline data is collected and report prepared for submission to Council at commencement of the BMP.

8.1.2 Biannual Monitoring

This is to occur every 6months from commencements up to three years or reaching of targets (which every is the latter);

- Native species, abundance and coverage;
- Weed species and coverage;
- Photo records at monitoring points at each aspect (North, east, south, west);
- General health of each Management Zone;
- Incidental fauna use of site; and
- Evaluation of methodology and management effectiveness.

8.2 Reporting

A baseline report is prepared at commencement of the BMP and submitted to Council.

A report is to be prepared annually and delivered to the consent authority for the life of the BMP with a final report prepared at the end of the BMP outlining how the conditions of the BMP have been met.

Biannual monitoring will inform the evaluation of management effectiveness, until the Regeneration Benchmark Targets are met.

As part of adaptive management, the reports will include evaluations and recommendations relating to all areas covered in the monitoring schedule and also address any other problems or deficiencies found during monitoring. If required the report should also outline any changes that are required to planned works to ensure better ecological outcomes.

Regeneration of the BMP Lands will be undertaken over a period of five (5) years or until the Year five (5) overall targets are reached.

8.3 Future Management of BMP Lands

Regeneration of the BMP Lands will be undertaken over a period of five (5) years or until the Year five (5) overall targets are reached. As the BMP lands will then be in a state of Natural Regeneration, management of the site after targets have been achieved will be undertaken in accordance with the *Biosecurity Act 2015* & *Biosecurity Regulations 2017*.

Table 2 - Weed Control Activities

Activity	Minimum Requirement
Pre-works	Undertake baseline surveys to identify priority weeds present on site to be the focus of weed management activities. Priority weeds based on listings under the *Biosecurity Act 2015*, and notably any problematic weeds on site that have been identified.
Primary Works	Effectively control priority species and areas through appropriate methods to eliminate highly competitive weeds from an area. Include high disturbance activities that could negatively impact later regeneration such as high-volume herbicide application, and physical removal of large trees which would pose safety hazards to the public or others if left to perish *in-situ*.
Secondary Works	Treat any regrowth from primary weed control and expand on control measures by targeting Priority species and expanding the primary control boundaries where desirable. Thin retained weeds to increase light penetration where appropriate. Generally, expand on and solidify primary work.
Maintenance Works	Maintain exclusion of weeds controlled during Primary and Secondary works. Prevent reinfestation of weeds progressively, and others as time permits.
Woody Trees & Shrubs	Where appropriate, remove trees via mechanical means (i.e., chainsaw or handsaw) and apply chemical to the cut stump. Material may be retained on-Site or disposed of appropriately off-Site. Retained material should be situated to provide additional ground habitat and slope stability but should not be left in such a way that would hamper natural regeneration or existing native plants. Care should be taken with species which have the capacity to regrow vegetatively such as *Erythrina x sykesii* (Coral Tree). Alternatively, trees and shrubs may be treated via frill or drill application of herbicide and left to perish *in-situ* as habitat.
Woody Thickets	Treat via cut or scrape and paint or high-concentration low-volume foliar herbicide control (i.e., splatter application). Material may be left *in-situ* (particularly after spraying) or broken up and rafted off the ground to perish (taking care to remove from expected high flow areas of the creek). Do not manually remove root stock in a manner that will encourage soil instability or erosion. Once dead, standing material may be broken down and left on the ground as mulch. Mechanical removal (i.e., brush cutter equipped with mulching blade or similar) may be used where practical and regrowth treated with foliar application of herbicide.
Vines and Creepers	Skirt from trees and vegetation to prevent smothering and leave material to perish *in-situ*. Cut or scrape and paint stems or runners. Foliar herbicide control where appropriate. Do not unduly expose soil via manual removal of plants where they may be providing soil stabilisation. Isolated manual removal as appropriate.
Ground Cover	Retain exotic species where they are providing ground stabilisation or habitat until such time as they hinder native species establishment or are no longer necessary. Relevant examples include retaining *Tradescantia fluminensis* (Trad) along drainage lines where removal would expose bare soil to erosion. Weed control is to focus on the patch removal of such weeds from around native regeneration or planting, with progressive removal of larger patches over time.

Prior to commencement of the BMP the following must have been undertaken:

- Construction Plans prepared and approved for the standard creek design;
- Construction of the standard creek profile;

It should be noted that the Treatment and Monitoring Plan Schedule of works will be provided to Council with the Baseline Data Report.

Table 3 – Year 1 Targets and Schedule of Works

Timeframe	Works to be Undertaken	1st Quarter of Year	2nd Quarter of Year	3rd Quarter of Year	4th Quarter of Year	Roles and Responsibilities	Targets to be reached at end of 4th Quarter			
							Abundance of Natives (%)	Cover of Native (%)	Cover of Biosecurity Weeds (%)	Cover of Other Priority Weeds (%)
Year 1	Installation of No-Go Zones, fencing and signs					Civil Contractor	30	30	<70	<70
	Installation of Monitoring Points					Project Ecologist				
	Collection of baseline data					Project Ecologist				
	Installation of sediment and erosion controls					Civil Contractor				
	Translocation of *Syzygium paniculatum*					Bush Regeneration Contractor				
	Installation of Ground habitat					Civil Contractor / Project Ecologist				
	Preparation of Baseline Data Report					Project Ecologist				
	Primary Weeding (Effectively control priority species and areas through appropriate methods to eliminate highly competitive weeds from an area. Include high disturbance activities that could negatively impact later regeneration such as high-volume herbicide application, and physical removal of large trees which would pose safety hazards to the public or others if left to perish *in-situ)* of all zones – focus is on Biosecurity Weeds (refer **Appendix C** for Department of Primary Industries Priority Weeds for Greater Sydney)					Bush Regeneration Contractor				
	Mass planting of trees and shrubs within reconstruction zones (refer to **Appendix B** for suitable plants in each PCT)					Bush Regeneration Contractor				
	Installation of tree guards for pest control if required					Bush Regeneration Contractor				
	Secondary Weeding- focus is on Biosecurity Weeds (refer **Appendix C** for Department of Primary Industries Priority Weeds for the Central Coast)					Bush Regeneration Contractor				
	Replacement dead / dying plantings					Bush Regeneration Contractor				
	Biannual monitoring					Project Ecologist				
	Annual Reporting to NBC					Project Ecologist				
At end of first year the entire BMP Land will be a state of Reconstruction Regeneration in accordance with Society for Ecological Restoration Australasia (2018) National standards for the practice of ecological restoration in Australia.										

Table 4 – Year 2 Targets and Schedule of Works

Timeframe	Works to be Undertaken	1st Quarter of Year	2nd Quarter of Year	3rd Quarter of Year	4th Quarter of Year	Roles and Responsibilities	Targets to be reached at end of 4th Quarter			
							Abundance of Natives (%)	Cover of Native (%)	Cover of Biosecurity Weeds (%)	Cover of Other Priority Weeds (%)
Year 2	Annual inspection of No-Go Zones, fencing and signs					Civil Contractor / Bush Regeneration Contractor	40	45	<45	<40
	Annual inspection of sediment and erosion controls (or after rainfall events)					Civil Contractor / Bush Regeneration Contractor				
	Annual inspection of ground habitat					Project Ecologist				
	Replacing dead / dying plantings					Bush Regeneration Contractor				
	Weed management as required to achieve annual targets					Bush Regeneration Contractor				
	Biannual monitoring of both terrestrial and aquatic environments including water quality data					Project Ecologist				
	Biannual inspection or Installation of tree guards for pest control if required					Project Ecologist				
	Annual Reporting to NBC					Project Ecologist				
At end of second year the entire BMP Land will be a state of Facilitated Regeneration in accordance with Society for Ecological Restoration Australasia (2018) National standards for the practice of ecological restoration in Australia.										

Table 5 – Year 3 Targets and Schedule of Works

Timeframe	Works to be Undertaken	1st Quarter of Year	2nd Quarter of Year	3rd Quarter of Year	4th Quarter of Year	Roles and Responsibilities	Targets to be reached at end of 4th Quarter			
							Abundance of Natives (%)	Cover of Native (%)	Cover of Biosecurity Weeds (%)	Cover of Other Priority Weeds (%)
Year 3	Annual inspection of no-go Zones, fencing and signs					Civil Contractor / Bush Regeneration Contractor	55	55	<30	<25
	Annual inspection of sediment and erosion controls (or after rainfall events)					Civil Contractor / Bush Regeneration Contractor				
	Annual inspection of ground habitat					Project Ecologist				
	Weed management as required to achieve annual targets					Bush Regeneration Contractor				
	Biannual monitoring of both terrestrial and aquatic environments including water quality data					Project Ecologist				
	Replacement of dead or dying plants					Bush Regeneration Contractor				
	Direct seeding of groundcover species in all Zones if required					Bush Regeneration Contractor				
	Biannual inspection or Installation of tree guards for pest control if required					Project Ecologist				
	Review of BMP success and failures and update where appropriate for submission with Annual Report to CCC					Project Ecologist				
	Annual Reporting to NBC					Project Ecologist				
At end of third year the entire BMP Land will be a state of Facilitated Regeneration Approach in accordance with Society for Ecological Restoration Australasia (2018) ***National standards for the practice of ecological restoration in Australia.***										

Table 6 – Year 4 Targets and Schedule of Works

Timeframe	Works to be Undertaken	1st Quarter of Year	2nd Quarter of Year	3rd Quarter of Year	4th Quarter of Year	Roles and Responsibilities	Targets to be reached at end of 4th Quarter			
							Abundance of Natives (%)	Cover of Native (%)	Cover of Biosecurity Weeds (%)	Cover of Other Priority Weeds (%)
Year 4	Annual inspection of sediment and erosion controls (or after rainfall events)					Civil Contractor / Bush Regeneration Contractor	60	65	<20	<15
	Annual inspection of ground habitat					Civil Contractor / Bush Regeneration Contractor				
	Weed management as required to achieve annual targets					Bush Regeneration Contractor				
	Biannual monitoring of both terrestrial and aquatic environments including water quality data					Project Ecologist				
	Annual Reporting to NBC					Project Ecologist				
At end of second year the entire BMP Land will be a state of Natural Regeneration Approach in accordance with Society for Ecological Restoration Australasia (2018) National standards for the practice of ecological restoration in Australia.										

Table 7 – Year 5 Targets and Schedule of Works

Timeframe	Works to be Undertaken	1st Quarter of Year	2nd Quarter of Year	3rd Quarter of Year	4th Quarter of Year	Roles and Responsibilities	Targets to be reached at end of 4th Quarter			
							Abundance of Natives (%)	Cover of Native (%)	Cover of Biosecurity Weeds (%)	Cover of Other Priority Weeds (%)
Year 5	Annual inspection of sediment and erosion controls (or after rainfall events)					Civil Contractor / Bush Regeneration Contractor	70	80	<10	<10
	Annual inspection of ground habitat					Civil Contractor / Bush Regeneration Contractor				
	Weed management as required to achieve annual targets					Bush Regeneration Contractor				
	Biannual monitoring of both terrestrial and aquatic environments including water quality data					Project Ecologist				
	Final Reporting to NBC					Project Ecologist				
At end of second year the entire BMP Land will be a state of Natural Regeneration Approach in accordance with Society for Ecological Restoration Australasia (2018) National standards for the practice of ecological restoration in Australia.										

AEP

Title: Figure 1 - Site Location

Date: May 2023

Location: 16 Macpherson Road, Warriewood

Client: Warrimac Pty Ltd

AEP ref: 2564.01

AEP

Title: Figure 2 - Ground- truthed Vegetation

Date: May 2023

Location: 16 Macpherson Road, Warriewood

Client: Warrimac Pty Ltd

AEP ref: 2564.01

AEP

Title: Figure 3 - Management Zones & Indicative Points

Date: May 2023

Location: 16 Macpherson Road, Warriewood

Client: Warrimac Pty Ltd

AEP ref: 2564.01

9.0 References

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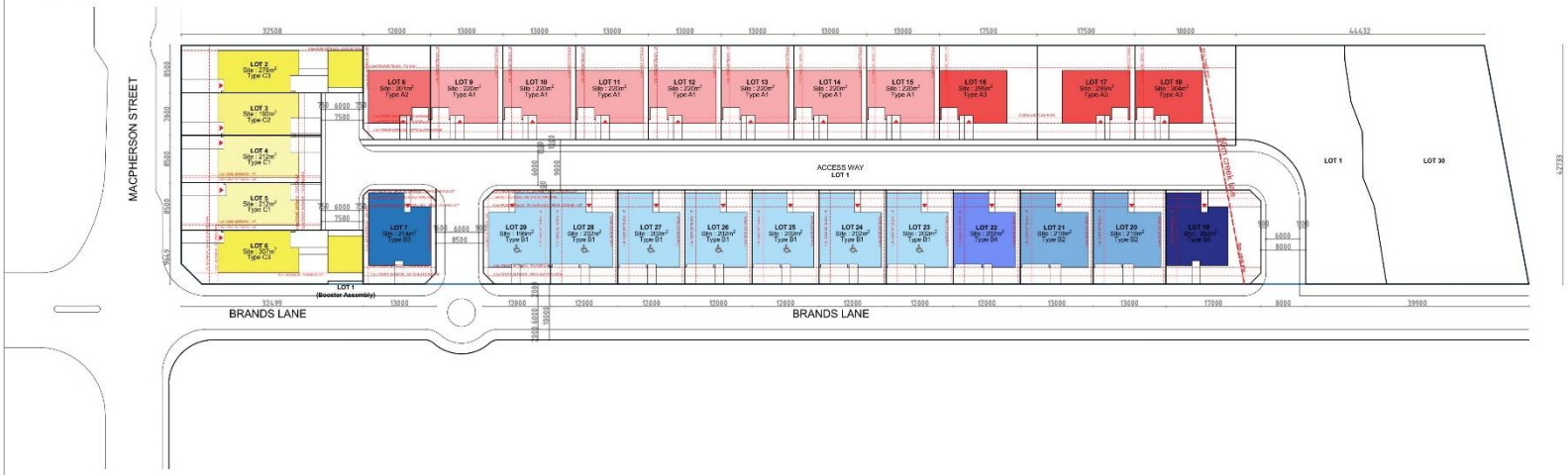
Appendix A – Proposed Development

N

28 Lots
28 Dwellings
7 Adaptable (25%)

TYPES

A1	7	25%
A2	1	3.5%
A3	3	11%
B1	7	25% ♿
B2	2	7%
B3	1	3.5%
B4	1	3.5%
B5	1	3.5%
C1	2	7%
C2	1	3.5%
C3	2	7%



1 LOT PLAN
SCALE 1:400@A1 / 1:800@A3

GENERAL NOTES:

- ALL WORKS TO COMPLY WITH BUILDING CODE OF AUSTRALIA, REQUIREMENTS OF RELEVANT STATUTORY AUTHORITIES, LOCAL GOVERNMENT & RELEVANT AUSTRALIAN BUILDING STANDARDS.
- DRAWINGS FOR THE PURPOSES OF DA ONLY - FURTHER CONSULTANT AUTHORITY COORDINATION WILL BE REQUIRED AT CC STAGE WHICH MAY IMPACT ON DESIGN AND PLANNING LAYOUTS.
- ARCHITECTURAL PLANS TO BE READ IN CONJUNCTION WITH CONSULTANTS DRAWINGS, SPECIFICATIONS & REPORTS.
- COPYRIGHT OF DESIGN SHOWN HEREON IS RETAINED BY PBD ARCHITECTS AND AUTHORITY IS REQUIRED FOR ANY REPRODUCTION.
- RL'S & SURVEYS SUPPLIED ARE APPROXIMATE ONLY - FUTURE ALLOWANCE FOR VERTICAL SERVICE DUCTS, STRUCTURAL WALL SYSTEMS AND CONSULTANT INPUT WILL BE REQUIRED.

LEGEND:

AW	AWNING
HW	HIGHLIGHT WINDOW
CU	A/C CONDENSER UNITS
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
FS	FIRE STAIRS
MV	MECHANICAL RISER TO FUTURE DETAIL
GC	GARBAGE CHUTE
MB	MAILBOX TO FUTURE DETAIL
FB	FLAME TRBOX
R	SMALL RECYCLING BIN
SK	SKYLIGHT
ST	STORAGE
WT	HOT WATER UNITS

ISSUE	DATE	DESCRIPTION
01	10.04.23	ISSUE FOR DA

N

CLIENT:
IPM PROPERTY

ARCHITECT:
PBD | ARCHITECTS
ABN 36 147 035 503
P - 02 9698 8140 E - info@pbdarchitects.com.au W - www.pbdarchitects.com.au
Level 2, 52 Albion Street, Surry Hills NSW 2010
Nominated Architect: Paul Buljevic NSW 7766

PROJECT:
28 TERRACES
16 MACPHERSON STREET
WARRIEWOOD

APR. 2023

DRAWING TITLE:
LOT PLAN

DRAWN BY: SS	CHECKED BY: HV	
SCALE: 1:400@A1 / 1:800@A3	DRAWING NO: DA 004	ISSUE: 01
PROJECT NO: 2235		

Appendix B – Regeneration Species List

Species List – Approximate densities and species for regeneration.

It should be noted that not all of the listed species above are easily obtainable, substitutions to be made on the advice of bush regeneration contractor or Project Ecologist.

Canopy	Density	Shrubs	Density	Ground Cover	Density
Aquatic Species – Low Flow Channel to Upper Toe					
Not Applicable in this Management Zone	N/A	Not Applicable in this Management Zone	N/A	*Baumea articulata*	6 to 8/1m^2
				Baumea juncea	
				Juncus usitatus	
				Triglochin procera,	
				Phildrum languinosum	
				Lomandra longifolia	
				Gahnia clarkei	
PCT 1795 - Coastal flats Swamp Mahogany Forest					
Extensive stands of Casuarina glauca, and groves of Eucalyptus robusta with other native feature trees (listed below)	Must comprise of a minimum of 75% of the total creekline corridor area	*Glochidion ferdinandi*	1/10m2	*Entolasia marginata*	5/m^2 or Direct Seeding
Eucalyptus robusta	1/30 m^2	*Casuarina glauca*		*Hypolepis muelleri*	
		Livistona australis		*Commelina cyanea*	
Banksia integrifolia		*Melaleuca linarifolia*		*Gahnia cyanea*	
		Elaeocarpus reticulatus		*Viola hederacea*	
Acmena smithii		*Grevillea sericea*		*Hydrocotyle peduncularis*	
		Melaleuca steyphelioides		*Pteridium esculentum*	
Ceratopetalum apetalum		*Homalanthus populifolius*		*Alternanthera denticulate*	
		Acacia longifolia		*Calochlaena dubia*	
Cyathea australis		*Dodonaea triquetra*		Oplismenus aemulus	
				Oplismenus imbecillis	
				Phragmites australis	
				Blechnum camfieldii	
				Centella asiatica	

ANGOPHORA COSTATA ANGOPHORA FLORIBUNDA EUCALYPTUS PUNCTATA LOPHOSTEMON CONFERTUS SYNCARPIA GLOMULIFERA SYZYGIUM PANICULUTUM WATERHOUSIA FLORIBUNDA

Appendix C – Priority Weeds of Greater Sydney

Priority Weeds of Greater Sydney Note: this region includes the local council areas of Bayside Council, Blacktown, Blue Mountains, Burwood, Camden, Campbelltown, Canada Bay, Canterbury-Bankstown, Central Coast, City of Parramatta, Cumberland, Fairfield, Georges River, Hawkesbury, Hornsby Shire Council, Hunters Hill, Inner West, Ku-ring-gai, Lane Cove, Liverpool, Mosman, North Sydney, Northern Beaches, Penrith, Randwick, Ryde, Strathfield, Sutherland, Sydney, The Hills , Waverley, Willoughby, Wollondilly and Woollahra.	
Weed	**Duty**
All plants	General Biosecurity Duty All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.
Aaron's beard prickly pear *Opuntia leucotricha*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
African boxthorn *Lycium ferocissimum*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
African olive *Olea europaea subsp. cuspidata*	Regional Recommended Measure Land managers mitigate the risk of the plant being introduced to their land. Land managers reduce impacts from the plant on priority assets. Land managers prevent spread from their land where feasible. The plant or parts of the plant are not traded, carried, grown or released into the environment
Alligator weed *Alternanthera philoxeroides*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. Biosecurity Zone The Alligator Weed Biosecurity Zone is established for all land within the state except land in the following regions: Greater Sydney; Hunter (but only in the local government areas of City of Lake Macquarie, City of Maitland, City of Newcastle or Port Stephens). Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone
Anchored water hyacinth *Eichhornia azurea*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Arrowhead *Sagittaria calycina var. calycina*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Asparagus fern *Asparagus virgatus*	Regional Recommended Measure Exclusion zone: whole of region except Newcastle and Lake Macquarie. Core infestation area: Newcastle and Lake Macquarie. Whole of region: Land managers should mitigate the risk of new weeds being introduced to their land. Plant should not be bought, sold, grown, carried or released into the environment. Within exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Notify the Local Control Authority if found. Land managers should mitigate spread from their land. Within Core infestation: Land managers to reduce impacts from the plant on priority assets.
Athel pine *Tamarix aphylla*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Bellyache bush *Jatropha gossypiifolia*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Bitou bush *Chrysanthemoides monilifera subsp. rotundata*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. Biosecurity Zone The Bitou Bush Biosecurity Zone is established for all land within the State except land within 10 kilometres of the mean high water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south. Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone

Priority Weeds of Greater Sydney Note: this region includes the local council areas of Bayside Council, Blacktown, Blue Mountains, Burwood, Camden, Campbelltown, Canada Bay, Canterbury-Bankstown, Central Coast, City of Parramatta, Cumberland, Fairfield, Georges River, Hawkesbury, Hornsby Shire Council, Hunters Hill, Inner West, Ku-ring-gai, Lane Cove, Liverpool, Mosman, North Sydney, Northern Beaches, Penrith, Randwick, Ryde, Strathfield, Sutherland, Sydney, The Hills , Waverley, Willoughby, Wollondilly and Woollahra.	
Weed	**Duty**
Black knapweed *Centaurea x moncktonii*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Black willow *Salix nigra*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. Regional Recommended Measure The plant is eradicated from the land and the land is kept free of the plant. Local Control Authority is notified if the plant is found on the land.
Blackberry *Rubus fruticosus species aggregate*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the Rubus fruiticosus species aggregate have this requirement, except for the varietals Black Satin, Chehalem, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stem, and Thornfree
Blind cactus *Opuntia rufida*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Boneseed *Chrysanthemoides monilifera subsp. monilifera*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
	Control Order Bonseed Control Zone: Whole of NSW Boneseed Control Zone (Whole of NSW): Owners and occupiers of land on which there is boneseed must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of boneseed must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.
Boxing glove cactus *Cylindropuntia fulgida var. mamillata*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Bridal creeper *Asparagus asparagoides*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. *this requirement also applies to the Western Cape form of bridal creeper
Bridal veil creeper *Asparagus declinatus*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Broomrapes *Orobanche sp.*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species of Orobanche are Prohibited Matter in NSW, except Clover broomrape, Orobanche minor and Australian broomrape, Orobanche cernua var. australiana.
Bunny ears cactus *Opuntia microdasys*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Cabomba *Cabomba caroliniana*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

Priority Weeds of Greater Sydney Note: this region includes the local council areas of Bayside Council, Blacktown, Blue Mountains, Burwood, Camden, Campbelltown, Canada Bay, Canterbury-Bankstown, Central Coast, City of Parramatta, Cumberland, Fairfield, Georges River, Hawkesbury, Hornsby Shire Council, Hunters Hill, Inner West, Ku-ring-gai, Lane Cove, Liverpool, Mosman, North Sydney, Northern Beaches, Penrith, Randwick, Ryde, Strathfield, Sutherland, Sydney, The Hills , Waverley, Willoughby, Wollondilly and Woollahra.	
Weed	**Duty**
Cane cactus *Austrocylindropuntia cylindrica*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the Austrocylindropuntia genus have this requirement
Cape broom *Genista monspessulana*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Cat's claw creeper *Dolichandra unguis-cati*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
	Regional Recommended Measure The plant should not be bought, sold, grown, carried or released into the environment. Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread from their land. Land managers to reduce impacts from the plant on priority assets.
Chicken dance cactus *Opuntia schickendantzii*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Chilean needle grass *Nassella neesiana*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Chinese knotweed *Persicaria chinensis*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Chinese violet *Asystasia gangetica subsp. micrantha*	Control Order Owners and occupiers of land on which there is Chinese violet must notify the local control authority for the area if the Chinese violet is part of a new infestation on the land, destroy all Chinese violet on the land ensuring that subsequent generations of Chinese violet are destroyed; and keep the land free of Chinese violet. A person who deals with a carrier of Chinese violet must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.
Climbing asparagus *Asparagus africanus*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found. Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Common pear *Opuntia stricta*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Cora Creeper *Barleria repens*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
East Indian hygrophila *Hygrophila polysperma*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Eurasian water milfoil *Myriophyllum spicatum*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

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Weed	**Duty**
Eve's needle cactus *Austrocylindropuntia subulata*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the *Austrocylindropuntia* genus have this requirement
Fireweed *Senecio madagascariensis*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Flax-leaf broom *Genista linifolia*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Foxtail fern *Asparagus densiflorus*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Frogbit *Limnobium laevigatum*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species of *Limnobium* are Prohibited Matter
Gamba grass *Andropogon gayanus*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Giant devil's fig Solanum chrysotrichum	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Giant Reed *Arundo donax*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment.
Giant rat's tail grass *Sporobolus pyramidalis*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Glory lily *Gloriosa superba*	Regional Recommended Measure The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Gorse *Ulex europaeus*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
	Regional Recommended Measure Exclusion zone: Blue Mountains City Council area. Core infestation area: rest of region Whole region: Land managers should mitigate the risk of new weeds being introduced to their land. The plant or parts of the plant should not be traded, carried, grown or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Core infestation area: Land managers should mitigate spread from their land.
Green cestrum *Cestrum parqui*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers reduce impacts from the plant on priority assets.

Priority Weeds of Greater Sydney Note: this region includes the local council areas of Bayside Council, Blacktown, Blue Mountains, Burwood, Camden, Campbelltown, Canada Bay, Canterbury-Bankstown, Central Coast, City of Parramatta, Cumberland, Fairfield, Georges River, Hawkesbury, Hornsby Shire Council, Hunters Hill, Inner West, Ku-ring-gai, Lane Cove, Liverpool, Mosman, North Sydney, Northern Beaches, Penrith, Randwick, Ryde, Strathfield, Sutherland, Sydney, The Hills , Waverley, Willoughby, Wollondilly and Woollahra.	
Weed	**Duty**
Grey sallow *Salix cinerea*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Ground asparagus *Asparagus aethiopicus*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Groundsel bush *Baccharis halimifolia*	Regional Recommended Measure The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Hawkweeds *Pilosella species*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species in the genera Pilosella and Hieracium are Prohibited Matter except for Hieracium murorum.
Holly leaved senecio *Senecio glastifolius*	Regional Recommended Measure Exclusion zone: whole region except for the core infestation area of the Royal National Park. Whole region: Land managers mitigate the risk of the plant being introduced to their land. The plant or parts of the plant are not traded, carried, grown or released into the environment. The Local Control Authority should be notified if the plant is found. Exclusion zone: The plant is eradicated and the land kept free of the plant. Core infestation area: Land managers prevent spread from their land where feasible. Land managers reduce impacts from the plant on priority assets.
Horsetails *Equisetum species*	Regional Recommended Measure Exclusion zone: whole of region except Northern Beaches local government area. The Northern Beaches local government area is the core area. Whole region: Land managers mitigate the risk of the plant being introduced to their land. Local Control Authority is notified if the plant is found on the land. The plant or parts of the plant are not traded, carried, grown or released into the environment. Exclusion zone: The plant is eradicated from the land and the land is kept free of the plant. Core area: Land managers prevent spread from their land where feasible.
Hudson pear *Cylindropuntia pallida*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Hydrocotyl *Hydrocotyle ranunculoides*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Hygrophila *Hygrophila costata*	Regional Recommended Measure The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Hymenachne *Hymenachne amplexicaulis* and hybrids	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Hymenachne *Hymenachne amplexicaulis* and hybrids	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Karoo acacia *Vachellia karroo*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Kidney-leaf mud plantain *Heteranthera reniformis*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.

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Weed	**Duty**
Kochia *Bassia scoparia*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries Excluding the subspecies trichophylla
Koster's curse *Clidemia hirta*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Kudzu *Pueraria lobata*	Regional Recommended Measure The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Lagarosiphon *Lagarosiphon major*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Lantana *Lantana camara*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Leaf cactus *Pereskia aculeata*	Regional Recommended Measure The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Ludwigia *Ludwigia peruviana*	Regional Recommended Measure Land managers mitigate the risk of the plant being introduced to their land. Land managers prevent spread from their land where feasible. Land managers reduce the impact on priority assets. The plant should not be bought, sold, grown, carried or released into the environment. Local Control Authority is notified if the plant is found on the land.
Madeira vine *Anredera cordifolia*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Mesquite *Prosopis* species	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the genus Prosopis have this requirement
Mexican feather grass *Nassella tenuissima*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Miconia *Miconia* species	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species of Miconia are Prohibited Matter in NSW
Mikania vine *Mikania micrantha*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries *all species in the genus Mikania are Prohibited Matter in NSW

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Weed	**Duty**
Mimosa *Mimosa pigra*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Ming asparagus fern *Asparagus macowanii*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found..
Mysore thorn *Caesalpinia decapetala*	Regional Recommended Measure The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment.
Nodding thistle *Carduus nutans* subsp. *nutans*	Regional Recommended Measure *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Pampas grass *Cortaderia* species	Regional Recommended Measure Exclusion zone: Upper Hunter local government area. Core infestation area: Port Stephens, Maitland, Cessnock, Lack Macquarie, Newcastle and MidCoast local government areas. Whole region: The plant should not be bought, sold, grown, carried or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should mitigate spread from their land. Land managers to reduce impacts from the plant on priority assets.
Parkinsonia *Parkinsonia aculeata*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Parkinsonia *Parkinsonia aculeata*	Control Order Parkinsonia Control Zone: Whole of NSW Parkinsonia Control Zone (Whole of NSW): Owners and occupiers of land on which there is parkinsonia must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of parkinsonia must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.
Parthenium weed *Parthenium hysterophorus*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Parthenium weed *Parthenium hysterophorus*	Prohibition on certain dealings The following equipment must not be imported into NSW from Queensland: grain harvesters (including the comb or front), comb trailers (including the comb or front), bins used for holding grain during harvest operations, augers or similar for moving grain, vehicles used to transport grain harvesters, support vehicles driven in paddocks during harvest operations, mineral exploration drilling rigs and vehicles used to transport those rigs, unless set out as an exception in Division 5, Part 2 of the Biosecurity Order (Permitted Activities) 2017
Paterson's curse *Echium plantagineum*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers reduce impacts from the plant on priority assets.

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Weed	**Duty**
Pond apple *Annona glabra*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Prickly acacia *Vachellia nilotica*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Prickly pears - *Austrocylindropuntias* *Austrocylindropuntia* species	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the Austrocylindropuntia genus have this requirement
Prickly pears - Cylindropuntias *Cylindropuntia* species	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the Cylindropuntia genus have this requirement
Prickly pears - *Opuntias* *Opuntia* species	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. For all Opuntia species except for Opuntia ficus-indica (Indian fig).
Rattlepod *Crotalaria beddomeana*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers reduce impacts from the plant on priority assets.
Rope pear *Cylindropuntia imbricata*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the Cylindropuntia genus have this requirement
Rubber vine *Cryptostegia grandiflora*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Sagittaria *Sagittaria platyphylla*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Sagittaria *Sagittaria platyphylla*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers reduce impacts from the plant on priority assets.
Salvinia *Salvinia molesta*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Salvinia *Salvinia molesta*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers reduce impacts from the plant on priority assets. This Regional Recommended Measure applies to Salvinia molesta and Salvinia minima
Scotch broom *Cytisus scoparius subsp. scoparius*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.

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Weed	**Duty**
Scotch broom *Cytisus scoparius subsp. scoparius*	Regional Recommended Measure Exclusion zone: whole region except for the core infestation area of the Upper Hunter (Barrington Tops) Whole region: The plant should not be bought, sold, grown, carried or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers to reduce impacts from the plant on priority assets.
Sea spurge *Euphorbia paralias*	Regional Recommended Measure Exclusion zone: whole region except for the core infestation area of Yaccaba Peninsula, Hawks Nest. Whole region: The plant should not be bought, sold, grown, carried or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Land managers should mitigate the risk of the plant being introduced to their land. Core infestation area: Land managers should mitigate spread from their land. Land managers to reduce impacts from the plant on priority assets.
Senegal tea plant *Gymnocoronis spilanthoides*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Serrated tussock *Nassella trichotoma*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Serrated tussock *Nassella trichotoma*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Siam weed *Chromolaena odorata*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Sicilian sea lavender *Limonium hyblaeum*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Sicklethorn *Asparagus falcatus*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Silverleaf nightshade *Solanum elaeagnifolium*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Silverleaf nightshade *Solanum elaeagnifolium*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Smooth tree pear *Opuntia monacantha*	Prohibition on certain dealings
Smooth tree pear *Opuntia monacantha*	Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Snakefeather *Asparagus scandens*	Prohibition on certain dealings
Snakefeather	Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Priority Weeds of Greater Sydney Note: this region includes the local council areas of Bayside Council, Blacktown, Blue Mountains, Burwood, Camden, Campbelltown, Canada Bay, Canterbury-Bankstown, Central Coast, City of Parramatta, Cumberland, Fairfield, Georges River, Hawkesbury, Hornsby Shire Council, Hunters Hill, Inner West, Ku-ring-gai, Lane Cove, Liverpool, Mosman, North Sydney, Northern Beaches, Penrith, Randwick, Ryde, Strathfield, Sutherland, Sydney, The Hills , Waverley, Willoughby, Wollondilly and Woollahra.	
Weed	**Duty**
Asparagus scandens Snakefeather *Asparagus scandens*	Regional Recommended Measure Exclusion zone: Hunter region except Cessnock and Lake Macquarie. Core infestation area: Cessnock and Lake Macquarie Whole of region: Land managers should mitigate the risk of new weeds being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment. Exclusion Zone: The plant should be eradicated from the land and the land kept free of the plant. Notify the Local Control Authority if found. Within Core infestation: Land managers to reduce impacts from the plant on priority assets.
Spongeplant *Limnobium spongia*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species of Limnobium are Prohibited Matter
Spotted knapweed *Centaurea stoebe subsp. micranthos*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Tiger pear *Opuntia aurantiaca*	Prohibition on certain dealings
Tiger pear *Opuntia aurantiaca*	Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Tiger pear *Opuntia aurantiaca*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers reduce impacts from the plant on priority assets.
Tropical soda apple *Solanum viarum*	Control Order Tropical Soda Apple Control Zone: Whole of NSW Tropical Soda Apple Control Zone (Whole of NSW): Owners and occupiers of land on which there is tropical soda apple must notify the local control authority of new infestations; destroy the plants including the fruit; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of tropical soda apple must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.
Velvety tree pear *Opuntia tomentosa*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Water caltrop *Trapa* species	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species in the Trapa genus are Prohibited Matter in NSW
Water hyacinth *Eichhornia crassipes*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Water hyacinth *Eichhornia crassipes*	Biosecurity Zone The Water Hyacinth Biosecurity Zone applies to all land within the State, except for the following regions: Greater Sydney or North Coast, North West (but only the local government area of Moree Plains), Hunter (but only in the local government areas of City of Cessnock, City of Lake Macquarie, MidCoast, City of Maitland, City of Newcastle or Port Stephens), South East (but only in the local government areas of Eurobodalla, Kiama, City of Shellharbour, City of Shoalhaven or City of Wollongong).

Priority Weeds of Greater Sydney Note: this region includes the local council areas of Bayside Council, Blacktown, Blue Mountains, Burwood, Camden, Campbelltown, Canada Bay, Canterbury-Bankstown, Central Coast, City of Parramatta, Cumberland, Fairfield, Georges River, Hawkesbury, Hornsby Shire Council, Hunters Hill, Inner West, Ku-ring-gai, Lane Cove, Liverpool, Mosman, North Sydney, Northern Beaches, Penrith, Randwick, Ryde, Strathfield, Sutherland, Sydney, The Hills , Waverley, Willoughby, Wollondilly and Woollahra.	
Weed	**Duty**
	Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone
Water lettuce *Pistia stratiotes*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Water soldier *Stratiotes aloides*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Water star grass *Heteranthera zosterifolia*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Wheel cactus *Opuntia robusta*	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
White blackberry *Rubus niveus*	Regional Recommended Measure Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.
Willows *Salix* species	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the Salix genus have this requirement, except Salix babylonica (weeping willows), Salix x calodendron (pussy willow) and Salix x reichardtii (sterile pussy willow)
Witchweeds *Striga* species	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species in the Striga genus are Prohibited Matter in NSW, except the native Striga parviflora
Yellow burrhead *Limnocharis flava*	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Appendix D – BMP Lands Signage

NO UNAUTHORISED ENTRY

This is a Vegetation Rehabilitation Area

- **NO DUMPING or WASTE DISPOSAL**
- **NO ANIMALS, VEHICLES or MACHINERY**

For information – contact Site Manager

AEP VMP SIGNAGE permanent sign, minimum size 600mm x 400mm erected and maintained at key access points to VMP lands for the life of the project

Appendix E – CV

Staff	Title/Qualification	Tasks
Natalie Black	Senior Environmental Manager BSc (Hons), Master Planning, Cert IV (TA) BAAS: 19076	Report Review
Jeremy Burrill	Ecologist B.Env.Sc (MS)	Field Surveys, Report Author
Catherine Stanislaus	Ecologist B.Com Env Sc - under study	Field Surveys

CATHERINE STANISLAUS

Curriculum Vitae

Frances is a Senior Ecologist and Lead Botanist with Anderson Environment and Planning, being an Accredited Assessor with over 12 years-experience in environmental impact assessment, environmental education, conservation land management, bush regeneration, wildlife rescue and rehabilitation, environmental sustainability, and environmental law.

Qualifications

- Bachelor of Commerce and Science (majoring in Ecology), UNSW, 2022

Further Education & Training

- NSW Class C Driver's Licence
- Graduated with Distinction in Ecology

Fields of Competence

- Terrestrial Ecology field survey, covering terrestrial flora and fauna

Relevant Employment History

2022 – Present	**Ecologist** Anderson Environment & Planning, Newcastle
2021	**ENVIRONMENTAL LABORATORY RESEARCH INTERNSHIP UNSW** Oyster Research Project

Relevant Volunteer Experience

2021	**LAKE ILLAWARRA, ENVIRONMENTAL CONSULTANCY PROJECT UNSW**

Jeremy Burrill

Curriculum Vitae

Jeremy works with AEP in the role of Ecologist. He is a graduate of environmental science and management, and has experience in voluntary roles in environmental fields, involving fauna and flora surveying, consultancy projects and natural resource management. His background in environmental fields with his growing ecological knowledge is utilised in a diverse array of applications in his current role.

Qualifications

- Bachelor of Environmental Science (Environmental Management and Sustainability) Deakin University (2020)

Further Education & Training

- Apply First Aid
- Victorian Driver's License
- Work Health & Safety General Construction Induction
- Work Safely at Heights

Fields of Competence

- Ecological field surveys
- Fauna surveys and trapping
- Natural resource management

Relevant Employment History

2020 – Present **Ecologist**
Anderson Environment & Planning, Newcastle

Currently employed by Anderson Environment & Planning to assist in the provision of consulting services to land, property, legal and government sectors. Covering ecological, project management, environmental, bushfire, planning services, advices, strategy and representation.

Volunteer Experience

- Overseas University Volunteer Placement (New Zealand, 2018)
- Industry Placement (Parks Victoria, 2019)

Natalie Black

Curriculum Vitae

Natalie works with AEP in the role of Senior Environmental Manager. She has extensive knowledge in environmental management, environmental planning, and report writing and assessment. With a detail understanding of planning, catchment management, coastal management and rehabilitation. Natalie has had a successful career with both state and local government in conservation, planning and field investigation roles. Natalie has also gained extensive communication skills and project management through her previous career in lecturing. Her background and experience in the ecological and planning fields is utilised in a diverse array of application in her current role.

Qualifications

- B.Sc (Hons), University of Newcastle, 2002 Sustainable Resource Management and Marine Science.
- Master Planning, University of Technology Sydney 2007.
- Certificate IV Training and Assessment at NSW TAFE 2012.
- BAM Assessor; accreditation number: BAAS19076.

Further Education & Training

- Evidence Gathering and Legal Process (Australian Institute of Environmental Health).
- Conflict Resolution Course (LGSA).
- Report Writing Course (LGSA).
- Powerful Presentation (LGSA).
- NSW Rural Fire Services Bush Fire Assessment
- Relocation of Threatened Species (Botanical Gardens Sydney).
- Sustainable Home Assessment Reduction Revolution.
- Flora and Fauna Survey Assessments Niche Environment and Heritage.
- First Aid TAFE.

Fields of Competence

- Environmental Planning
- Environmental Management and rehabilitation of catchments coastal waterways. Statement of Environmental Effects (preparation and assessing).
- Fish Passage
- Marine ecosystems including; mangroves, seagrasses, algae, Fauna and habitat assessment.
- vegetation.
- Communicating with a wide range of stakeholders.
- Development Application.
- Education in both Environmental and Planning industries.
- Koala Plans of Management.
- Policy Development.

Relevant Employment History

2019 – Present	**Senior Environmental Manager**
	Anderson Environment & Planning, Newcastle
2010 - 2019	**Principal Environmental Planner**
	Black Earth
2003-2010	**Natural Resource Manager and**
	Development Assessment Officer
	Lismore City
2002- 2003	**Jervis Bay Indigenous Fishing Strategy**

ATTACHMENT 4 - CONCEPT SUBDIVISION PLAN PREPARED BY CRAIG & RHODES

A1

CONCEPT SUBDIVISION
OVER LOT 4 D.P.553816
16 MACPHERSON STREET WARRIEWOOD

PRELIMINARY PLAN ONLY LOT DIMENSIONS AND AREAS SUBJECT TO SURVEY & REGISTRATION OF THE FINAL PLAN AT NSW LRS

YIELD

NET SALEABLE AREA = 6380m²
ROAD LENGTH WITHIN LOT = ...m
ROAD LENGTH BRANDS LANE = ...m
ROAD LENGTH TOTAL = ...m
ROAD AREA WITHIN LOT = ...m²

LOT SIZE DIMENSIONS	LOT SIZE AREAS	NUMBER	AREA	PERCENT OF SALEABLE AREA
8.5m X 32.5m	276m²	1	276m²	4.3%
7.6m X 25m	190m²	1	190m²	3.0%
8.5m X 25m	212m²	2	424m²	6.7%
9.6m X 32.5m	306m²	1	306m²	4.8%
13m X 16.9m	219m²	10	2190m²	34.3%
12m X 16.9m	202m²	9	1818m²	28.4%
17.5m X 16.9m	296m²	2	592m²	9.3%
18m X 16.9m	304m²	1	304m²	4.8%
17.5m X 16.9m	282m²	1	282m²	4.4%
TOTAL		28	6380m²	100%
AVERAGE	254m²			

ALL AREAS SUBJECT TO SURVEY

NOTE:
THE LOCATION OF THE NORTHERN BOUNDARY OF LOT 30 (FORMER CENTRELINE OF NARRABEEN CREEK) AS SHOWN HEREON IS SUBSTANTIALLY THE SAME AS THAT SHOWN ON DP5464 & DP553816. THE CURRENT CENTRE OF THE CREEK AS SHOWN HEREON HAS BEEN ARTIFICIALLY REALIGNED.

Issue	Date	Details
Issue no. 15	30/08/2024	LOTS 18-30 (INCLUDE NARRABEEN CREEK)
Issue no. 14	20/05/2024	CREEK LINES AMENDED
Issue no. 13	16/03/2024	LOTS LAYOUT REVISED
Issue no. 11	16/11/2023	BRANDS LANE ALIGNMENT & BIKE LOCATIONS UPDATED

Project: CONCEPT SUBDIVISION OVER LOT 4 D.P.553816 16 MACPHERSON STREET WARRIEWOOD

Principal: WARRIEMAC PTY LTD

Scale: 1:400 | Date: 21/07/2023 | Council Ref: | Datum: LGA | Drawn: F.G. | Proj Mgr: A.M. | Client Ref:

CRAIG & RHODES TAKE THE LEAD

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Job No: 048-22
Drwg No: 048-22P L01 [14]
Drwg Title: - CONCEPT SUBDIVISION PLAN