



Catherine Fields Part Precinct

Riparian Assessment – Addendum 1

Prepared for
Department of Planning & Infrastructure

15th October 2013



DOCUMENT TRACKING

| ITEM | DETAIL |
|-----------------|---|
| Project Name | Catherine Fields Part Precinct |
| Project Number | 11WOLECO-0033 |
| File location | O:\Synergy\Projects\11WOLECO\11WOLECO-0033 Catherine Fields Part Precinct - Biodiversity Assessment & Biodiversity Conservation Assessment\Report\Final |
| Project Manager | Katherine Lang Phone: 4201 2207 Office address: Suite 204, Lvl 2, 62 Moore Street, Austinmer NSW 2515 |
| Prepared by | SH, BD (addendum 1) |
| Approved by | SH (addendum 1) |
| Status | Final |
| Version Number | 3 |
| Last saved on | 15 October 2013 |

This report should be cited as 'Eco Logical Australia 15th October, 2013. *Catherine Fields Part Precinct-Riparian Assessment – Addendum 1.*'

ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd with support from Hixson Pty Ltd and the Department of Planning and Infrastructure.

Disclaimer

This document may only be used for the purpose for which it was commissioned and in accordance with the contract between Eco Logical Australia Pty Ltd and Hixson Pty Ltd. The scope of services was defined in consultation with Hixson Pty Ltd, and Department of Planning and Infrastructure by time and budgetary constraints imposed by the client, and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information.

Eco Logical Australia Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report and its supporting material by any third party. Information provided is not intended to be a substitute for site specific assessment or legal advice in relation to any matter. Unauthorised use of this report in any form is prohibited.

Contents

| | | |
|---|--|----|
| 1 | Introduction..... | 1 |
| 2 | Riparian Corridor Post – Exhibition Amendments and Issues..... | 1 |
| 3 | Conclusion..... | 3 |
| | References..... | 8 |
| | Appendix 1: Electricity substation consultation with NOW..... | 9 |
| | Appendix 2: Meeting Minutes from consultation with NOW..... | 18 |

List of Figures

| | |
|---|---|
| Figure 1: Reach identification map..... | 4 |
| Figure 2: Current ILP..... | 5 |
| Figure 3: Exhibited Draft ILP for comparison..... | 6 |
| Figure 4: Riparian averaging plan..... | 7 |

Abbreviations

| ABBREVIATION | DESCRIPTION |
|--------------|--|
| CRZ | Core Riparian Zone |
| DECCW | (Former) Department of Environment, Climate Change and Water- now Office of Environment and Heritage |
| DNR | (Former) Department of Natural Resources- now Office of Environment and Heritage |
| DP&I | Department of Planning and Infrastructure |
| ELA | Eco Logical Australia |
| ENV | Existing Native Vegetation |
| EPBC | Environment Protection and Biodiversity Conservation |
| GCDC | Growth Centres Development Code |
| ILP | Indicative Layout Plan |
| NOW | NSW Office of Water (formerly the Department of Water and Energy) |
| RC | Riparian Corridor |
| RCM | Riparian Corridor Matrix |
| RCMS | Riparian Corridor Management Strategy |
| SEPP | State Environmental Planning Policy |
| TOB | Top of Bank |
| TSC | Threatened Species Conservation |
| VB | Vegetated Buffer |

1 Introduction

As part of the rezoning of the Catherine Fields Part Precinct, Eco Logical Australia (2012) undertook an assessment of the riparian values within the site and identified, in consultation with the Department of Planning and Infrastructure and the NSW Office of Water, riparian corridors across the site (see **Figure 3**)

This information was placed on public exhibition in November 2012. Following the exhibition period, a number of changes have been made to the riparian corridors as more detailed landuse planning was undertaken. This report also addresses issues raised during public exhibition. These changes are detailed below in **Section 2** and indicated in **Figure 2**. Note that the exhibited draft ILP (**Figure 3**) is provided for comparison. Copies of correspondence with the NSW Office of Water are included in Appendix 1 & 2.

2 Riparian Corridor Post – Exhibition Amendments and Issues

1. Relocation of electricity substation

The location of the electricity substation has been altered to allow a better urban design outcome, utilise land of little development opportunity, co-locate the substation with the major electrical easement and to make the most of surrounding vegetation and provide a screen for the proposed residential areas. The new location was discussed with both Endeavour Energy and the NSW Office of Water who confirmed; *‘The Office of Water has no objection for the proposed relocation of the electrical substation. Offset to the loss of any riparian areas resulted from the relocation may be required for any future integrated development.’* (See **Appendix 1**)

2. Application of the averaging rule

The averaging rule (See *Guidelines for riparian corridors on waterfront land*, NSW Office of Water 2012) enables non riparian corridor uses to occur within the outer 50% of the riparian corridor, providing such use are offset through the protection of an equal or greater area of land that would not otherwise form part of the riparian corridor. Whilst this approach is often incorporated during the development application stage, as the urban design for this area is quite detailed there were a number of areas where it was possible to identify appropriate use of the averaging rule to reach a better urban design outcome and incorporate this into the rezoning of the site (see **Figure 4**).

The riparian averaging process identified approximately 4.1 hectares of changes across approximately 40 hectares of riparian corridors. The 4.1 hectares of changes were balanced up with additions to the riparian corridors to ensure an overall balance in riparian corridors across the precinct.

Whilst the changes were made on an overall landscape basis, without consideration of ownership, the changes were reviewed to ensure equity across the major landholdings.

3. Modification of reach 5 orientation

Reach 5 is located on the northern boundary of the site and extends in a southwards direction from Kolombo Creek. Originally it was proposed to retain this area primarily for drainage functions as a narrow strip of approximately 20 metres total width. During the post-exhibition phase and in discussions with the NSW Office of Water it was determined that it would be appropriate to re-orientate this area of riparian corridor so that it was parallel with Kolombo Creek, given it would serve primarily a drainage function (see Appendix 2).

4. Online water bodies for Australasian Bittern habitat

The endangered Australasian Bittern *Botaurus poiciloptilus* was located during the field survey program in an online farm dam within South Creek. The NSW Office of Environment and Heritage identified this as a species of concern in their submission on the exhibition documents and requested that measures to maintain and improve habitat for this species were integrated into planning controls and design of riparian areas. This species utilises areas of open water surrounded by reed beds and fringing riparian vegetation. Online waterbodies are not permitted under riparian guidelines and an exemption to this standard was requested.

The NSW Office of Water provided support for online waterbodies on condition that they provided Bittern habitat and were constructed in a way that does not impede fish passage.

The Department of Planning and Infrastructure, Eco Logical Australia and drainage engineers, Brown Consulting, have prepared development controls that integrate riparian, flooding and drainage constraints with conservation of Bittern habitat.

5. Co-location of power line and Reach 11

The small tributary (Reach 11) draining from Harrington Grove to the south of the site is currently located within and adjacent to a power easement. A proposal to entirely co-locate this riparian corridor with the power easement was accepted by the NSW Office of Water providing native species (grasses, forbes, sedges, shrubs etc) were utilised in revegetation works (See Appendix 2).

This proposal successfully integrates riparian and infrastructure elements and makes available additional land for development on the eastern side of the easement.

6. Confirmation of Reach 19

Through the exhibition submissions process, several affected landowners objected to the position of this reach of watercourse. A post-exhibition review of this watercourse with Brown Consulting in relation to the position of the floodway has re-confirmed the exhibited riparian area. Further detailed analysis of riparian and floodplain filling issues may be required at the Development Application stage and any modifications could consider the ‘averaging rule’ when seeking Controlled Activity Approval under the *Water Management Act, 2000*.

3 Conclusion

The riparian assessment undertaken as part of the original planning for the part-precinct identified a riparian corridor network that met the objectives of the *Water Management Act, 2000* and was supported by the NSW Office of Water. During the exhibition period a number of submissions identified potential modifications to the riparian corridor network. Each submission was considered on its merit and where changes were considered to be appropriate these were discussed with the NSW Office of Water prior to be incorporated into the final riparian corridor network. It is recommended that the riparian corridor network is identified in the Riparian Protection Area overlay.

Consideration should be given to using the Riparian Protection Area overlay to redefine the extent of Waterfront Land for the purposes of *Water Management Act, 2000* across the part-precinct. This could be undertaken through a modification to Schedule 5 of the *Water Management (General) Regulation 2011*.



Figure 1: Reach identification map

CATHERINE FIELDS (PART) PRECINCT
INDICATIVE LAYOUT PLAN

19 July 2013

- Part Precinct Boundary
- Land to which Precinct Plan applies
- Low to Medium Density Residential
- Low Density Residential
- Very Low Density Residential
- Environmental Living
- Indicative School Location
- Neighbourhood Centre
- Parks
- Sporting Fields
- Environmental Conservation
- Electricity Substation
- Drainage
- Riparian Corridor
- Major Road
- Key Local Road
- Potential Local Road Network
- Historic Driveway
- Transmission Easement
- Transmission Line to be Undergrounded
- Oran Park House, Silo & Coach House
- Creek (Existing Top of Bank)

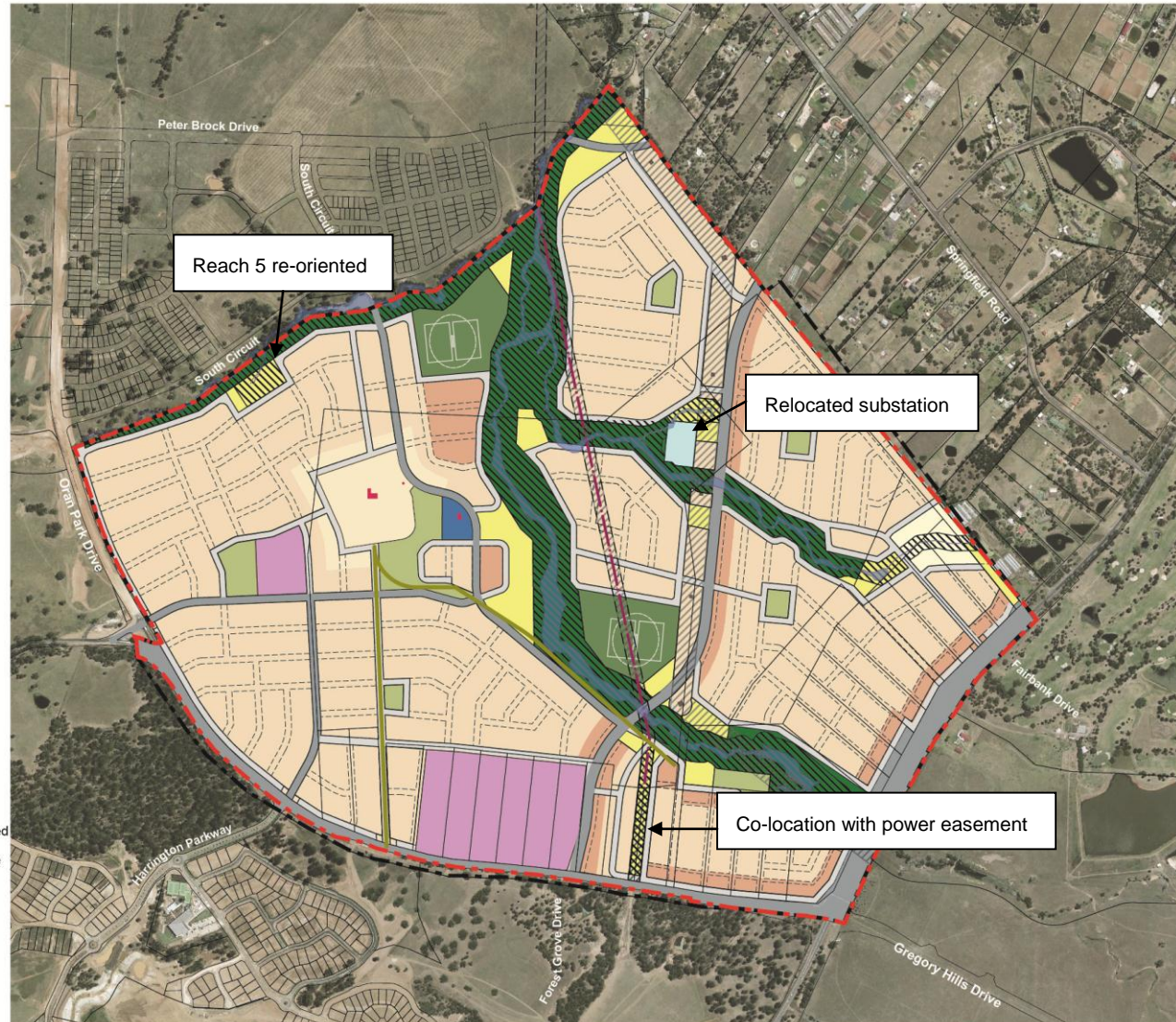
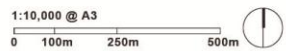


Figure 2: Current ILP

**CATHERINE FIELDS (PART)
PRECINCT**
DRAFT INDICATIVE LAYOUT PLAN

14 June 2012

-  Part Precinct Boundary
-  Land to which the Precinct Plan applies
-  Low to Medium Density Residential
-  Low Density Residential
-  Very Low Density Residential
-  Environmental Living
-  Indicative School Location
-  Neighbourhood Centre
-  Passive Open Space
-  Active Open Space
-  Environmental Conservation
-  Electricity Substation
-  Drainage
-  Riparian Corridor
-  Major Road
-  Local Road
-  Heritage Driveways
-  Pedestrian Path
-  Potential Transmission Realignment
-  Existing Transmission Easement
-  Heritage Building
-  Creek

1:10,000 @ A3
0 100m 250m 500m

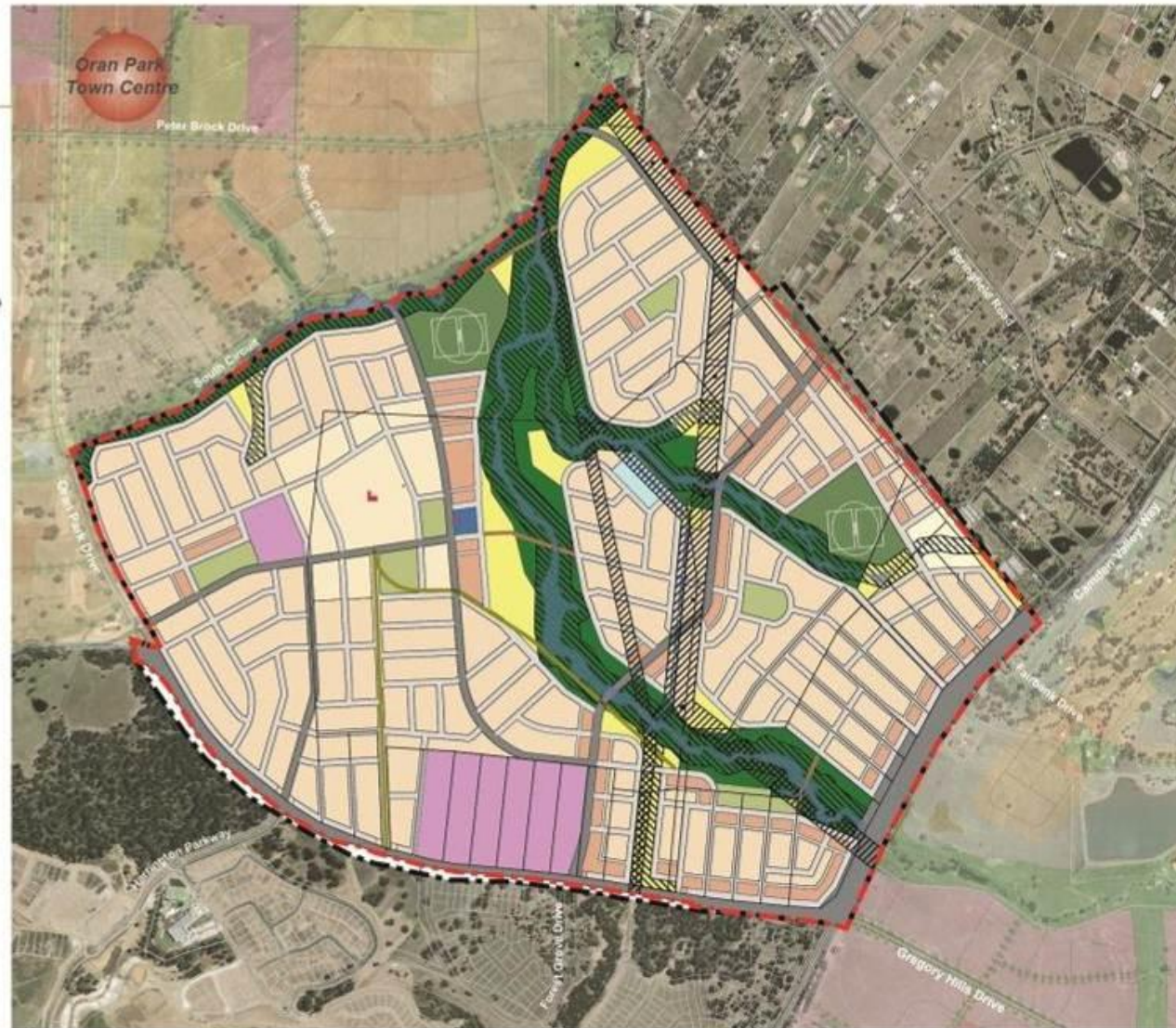


Figure 3: Exhibited Draft ILP for comparison

**CATHERINE FIELDS (PART)
PRECINCT**

RIPARIAN CORRIDOR AVERAGING

3 JULY 2013


-  Existing Top of Bank
-  Proposed Riparian Corridor Zone
-  50% Inner Riparian Zone
-  Riparian Positive Offset
-  Riparian Negative Offset



Figure 4: Riparian averaging plan

References

Eco Logical Australia Pty Ltd (2012). . *Catherine Fields Part Precinct- Riparian Assessment.*'

NSW Office of Water (NOW) (2012). *Controlled activities – Guidelines for riparian corridors.* NSW Office of Water.

Appendix 1: Electricity substation consultation with NOW



ECO LOGICAL AUSTRALIA PTY LTD
 ABN 87 096 512 01
 www.ecoaus.com.au

Mohammed Ismail

Water Regulation Officer
 NSW Department of Primary Industries | Office of Water
 PO Box 3720 Parramatta NSW 2124

ELA Reference: 12WOLPLA-0048

18 June 2013

Dear Mohammed,

Proposed new location of electrical substation, Catherine Fields (Part) Precinct.

As discussed this letter provides you with a brief background of the project and the landholders proposal to locate the zone substation between two riparian areas.

Catherine Fields is a part precinct of the South West Growth Centres currently being considered for rezoning by the NSW Department of Planning and Infrastructure (DP&I) utilising the Precinct Acceleration Protocol. The initial consultation with Office of Water (NOW) involved a site inspection with Greg Brady (since retired) in 2011. An agreement was made between DP&I and NOW regarding which creeks in the precinct would be retained or removed (referred to hereon as the 'riparian agreement'). Subsequently, an exhibited draft Indicative Layout Plan (ILP) was designed around this agreement with riparian corridor widths based on the Strahler-based guidelines. The ILP is currently being revised post-exhibition and is planned to be gazetted in the coming months.

During the post-exhibition detailed design stage, the landowner has put forward an option to move the precinct's substation from the location drafted in the exhibited draft ILP to a small parcel of land now being considered for urban development. This land is constrained by two creeks and an existing powerline easement and is considered by the landowner to be a more suitable location for the substation. **Figure 1** attached shows the proposed location of the substation and the two creeks, which have both been identified as Strahler 2nd Order streams. Discussions have been held with Endeavour Energy regarding the new proposed location and they have provided in principle support for the proposal.

The proposal will impact on 0.02ha of the southern riparian corridor and is proposed to be offset immediately adjacent to the substation.

The proposal will impact on 0.14ha of the northern riparian corridor. This is also proposed to be offset immediately adjacent to the substation. This impact will however result in a 'pinch point' of approximately 10 metres in total width. It has been confirmed by Brown Consulting (Greg Morgan pers. Comm.) that the width will be adequate to convey flood flows and will not reduce the hydraulic function of the creek.

In essence the proposals are considered to be minor and will be offset in the immediate vicinity. This approach is generally consistent with the 'averaging rule', however it is noted that the changes to the northern riparian corridor are within the inner 50%.

SUITE 204 LEVEL 2 62 MOORE STREET AUSTINMER NSW 2515 T | 02 4201 2200 F | 02 4268 4361

ARMIDALE | BRISBANE | CANBERRA | COFFS HARBOUR | DARWIN | GOSFORD | MUDGEE | NAROOMA | NEWCASTLE
 PERTH | ST GEORGES BASIN | SUTHERLAND | SYDNEY | WOLLONGONG

On a merit basis, the northern creek ends immediately upstream of the site. The creek through the site is ephemeral and where there is channelisation this has occurred through nick-point retreat. The channel is located with grazed a graze cow paddock and there is no native vegetation present. It is considered to be of very low environmental value.

Enclosed with this letter are a series of photos and a map to assist you with your considerations.

Given the tight timeframes, it would be appreciated if you could respond to this letter as soon as possible, and preferably early in the week beginning 24th June 2013. I apologise for the small amount of time available for you to consider this proposal.

If you require further information please contact me on 0405 125 701. I look forward to discussing this with you.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'S. House', written in a cursive style.

Steven House

Director

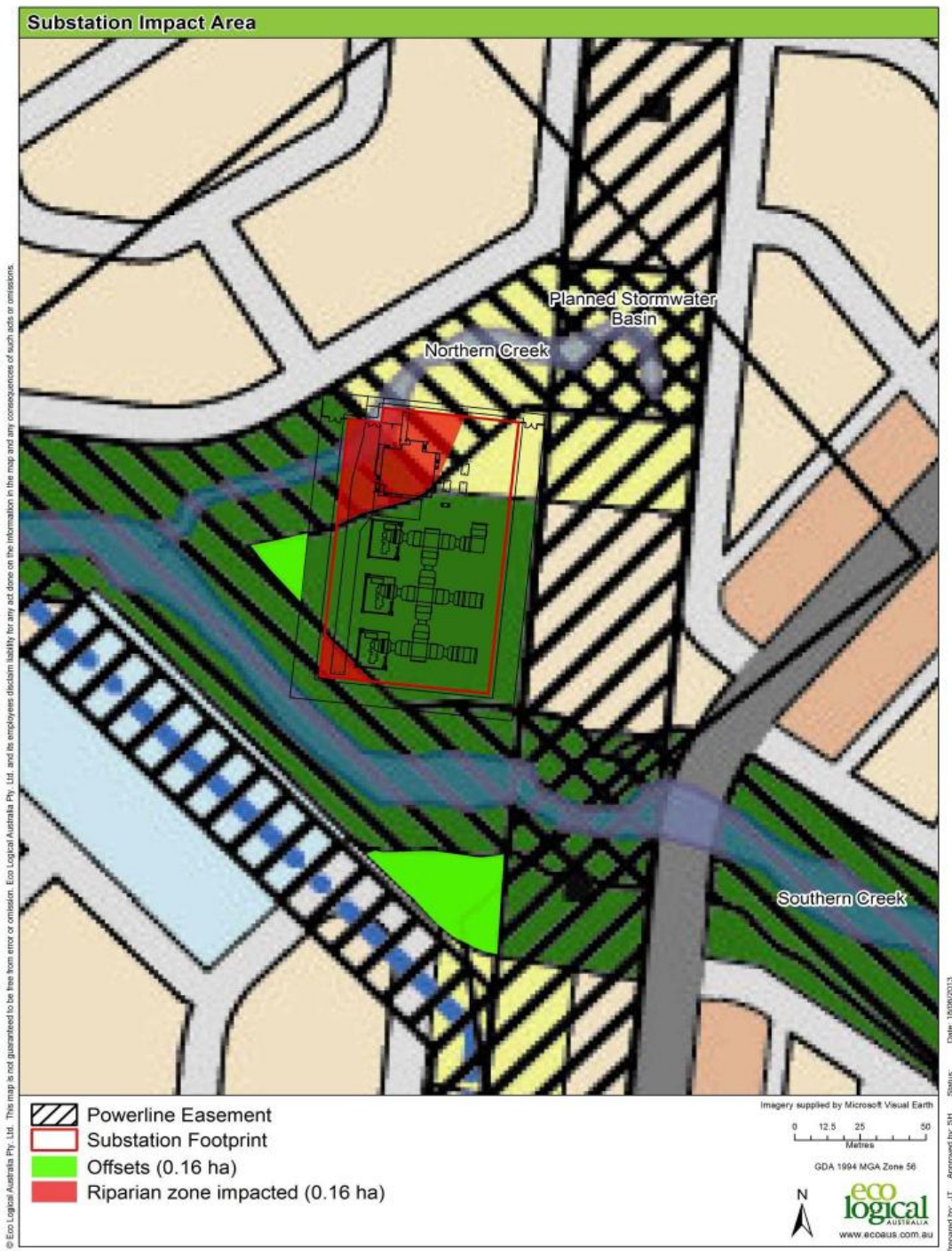


Figure 1: Proposed substation location showing ILP, impacts to riparian corridor and proposed offset area



Photo 1. Proposed location of substation. Northern creek imperceptible in foreground. Southern creek follows tree line at rear of photo

Photo 2. Standing in Northern creek facing upstream. Note transmission line and lack of creek upstream of the site.





Photo 3. Formation of channel through nick-point retreat in northern creek.

Photo 4. Northern creek downstream of proposed substation location.



Photo 5. Southern creek located on left of photo



Figure 2. Substation overlaid with aerial photo. The substation footprint is the inner black line. The outer black line represents the vegetated buffer



Hi Steve

The Office of Water has no objection for the proposed relocation of the electrical substation. Offset to the loss of any riparian areas resulted from the relocation may be required for any future integrated development.

Regards

Mohammed Ismail | Water Regulation Officer

NSW Department of Primary Industries | Office of Water

Level 11 | 10 Valentine Avenue | Parramatta NSW 22150; PO Box 3720 – Parramatta NSW 2124

T: 02 8838 7535 | F: 02 8838 7554 | E: mohammed.ismail@water.nsw.gov.au

W: www.dpi.nsw.gov.au | www.water.nsw.gov.au

On 21/06/2013 at 17:00, Steven House <stevenh@ecoaus.com.au> wrote:

Dear Mohammed

Please find attached an overview and justification for the proposed substation location.

DP&I are in the process of finalising the rezoning and ILP for the site, if you could review the proposal as soon as possible that would be appreciated

If you require any further information please contact me on 0405 125 701.

Thank you

Steve

Steven House

Director

Eco Logical Australia Pty Ltd

Suite 204, 62 Moore St Austinmer NSW 2515

T +61 2 4201 2201 | F +61 2 4268 4361 | M +61 405 125 701

stevenh@ecoaus.com.au

<http://www.ecoaus.com.au>

Please consider the environment before printing this e-mail.

This email (including any attachments) is confidential. If you are not the intended recipient you must not copy, use, disclose, distribute or rely on the information contained in it. If you have received this email in error, please notify the sender immediately by reply email and delete the email from your system. Confidentiality and legal privilege attached to this communication are not waived or lost by reason of mistaken delivery to you. ELA does not guarantee that this email or the attachment(s) are unaffected by computer virus, corruption or other defects and accepts no liability for any damage caused by this email or its attachments due to viruses interception corruption or unauthorised access. Please note that our servers may not be located in your country.

Appendix 2: Meeting Minutes from consultation with NOW

Meeting Minutes – Catherine Fields South Riparian

| | |
|-----------|---|
| Project | Catherine Fields South Rezoning |
| Code | 12suteco-0048 |
| Date | 4 th April 2013. 9.30am |
| Location | Department of Planning, Parramatta |
| Attendees | Lee Mulvey (DoP), Gina Potter (NOW), Steven House (ELA) |

1. LM provided background on precinct and precinct planning
2. SH provided background on approach to riparian areas and discussions, site inspection and agreements with Greg Brady (retired) of NOW
3. Main Points of Discussion
 - a. Australasian Bittern
 - i. SH provided overview of species, issues and OEH comments
 - ii. GP in principal agreement with providing habitat, subject to basins being 'essentially offline' and fish passage issues addressed
 - iii. GP noted NSW Fisheries should be consulted
 - b. 'Harrington Creek'
 - i. LM and SH provided background to tributary of South Creek linking to Harrington Grove. Noted that it is proposed to be co-located with power easement and this would restrict structure of native vegetation that could be installed in this area. Noted new channel would be constructed and this would meander through the riparian corridor
 - ii. GP noted that power easements are common in creeks and given restoration of South Creek that NOW would accept different vegetation structure for tributary (native grasses, sedges etc)
 - c. Kolombo Creek 'Southern Spur'
 - i. Noted landholder desire to remove riparian affectation in this area
 - ii. GP noted that this creek appeared to have a drainage function
 - iii. GP agreed that shape of riparian zone in this area could be modified providing that drainage, detention and treatment requirements were met. DoP to review drainage in consultation with engineer
 - iv. SH noted that this would probably result in a less linear structure with drainage requirements located closer to main Kolombo Creek
4. General
 - a. LM asked if averaging rule could be applied (swapped) across different creeks. GP said this is OK, but ownership should be common otherwise covenants/easements would be required
 - b. SH noted that RPA's could be incorporated into WM Act regulations to redefine waterfront land across. GP indicated it would be preferable for applicants to continue to see CAA.

HEAD OFFICE

Suite 4, Level 1
2-4 Merton Street
Sutherland NSW 2232
T 02 8536 8600
F 02 9542 5622

SYDNEY

Level 6
299 Sussex Street
Sydney NSW 2000
T 02 8536 8650
F 02 9264 0717

ST GEORGES BASIN

8/128 Island Point Road
St Georges Basin NSW 2540
T 02 4443 5555
F 02 4443 6655

CANBERRA

Level 2
11 London Circuit
Canberra ACT 2601
T 02 6103 0145
F 02 6103 0148

NEWCASTLE

Suite 17, Level 4
19 Bolton Street
Newcastle NSW 2300
T 02 4910 0125
F 02 4910 0126

NAROOMA

5/20 Cauty Street
Narooma NSW 2546
T 02 4476 1151
F 02 4476 1161

COFFS HARBOUR

35 Orlando Street
Coffs Harbour Jetty NSW 2450
T 02 6651 5484
F 02 6651 6890

ARMIDALE

92 Taylor Street
Armidale NSW 2350
T 02 8081 2681
F 02 6772 1279

MUDGEES

Unit 1, Level 1
79 Market Street
Mudgee NSW 2850
T 02 4302 1230
F 02 6372 9230

PERTH

Suite 1 & 2
49 Ord Street
West Perth WA 6005
T 08 9227 1070
F 08 9322 1358

WOLLONGONG

Suite 204, Level 2
62 Moore Street
Austinmer NSW 2515
T 02 4201 2200
F 02 4268 4361

GOSFORD

Suite 5, Baker One
1-5 Baker Street
Gosford NSW 2250
T 02 4302 1220
F 02 4322 2897

DARWIN

© ECOLOGICAL AUSTRALIA PTY LTD
16/56 Marina Boulevard
Cullen Bay NT 0820
T 0488 050 916