

31 May 2019

Minister for Energy and Environment  
c/-the Chief Executive, Office of Environment and Heritage  
Office of Environment and Heritage  
PO BOX A290  
Sydney South NSW 1232

Dear Minister

**Amended Mount Gilead Stage 1 - Biodiversity Certification Agreement Application Form**

We refer to the biodiversity certification application form submitted by Campbelltown City Council (Council) under cover letter dated 19 July 2018 (Application Form).

Minor amendments have been made to the Application Form and Council encloses a copy of the Application Form with hand written amendments (Amended Application Form). These amendments have been accepted by Council as evidenced by this letter which seeks to lodge the amended Application Form. All other parties to the Biodiversity Certification Application have also accepted these amendments as evidenced by the attached letters.

Council has been informed that the Office of Environment and Heritage does not intend recommending re-notification to the delegate.

Campbelltown City Council submits the enclosed Amended Application Form in seeking approval to have biodiversity certification granted over the land within Mount Gilead Stage 1.

If you require any further information please contact Jim Baldwin Director City Development on 4645 4575.

Yours sincerely



Lindy Deitz  
General Manager



## Biodiversity certification application

Complete this form if you wish to apply to the Minister for the Environment for biodiversity certification under the *Threatened Species Conservation Act 1995*.

Before completing this form, please read the Biodiversity Certification Assessment Methodology at [www.environment.nsw.gov.au/biocertification/index.htm](http://www.environment.nsw.gov.au/biocertification/index.htm). If you need help with completing the form, please phone 131 555.

This is an interactive form. Click on the check boxes and type in your responses. Each field has unlimited characters.

When you have completed the form, print it and **sign where necessary**. Then **post it to**:

Minister for the Environment  
c/- the Chief Executive, Office of Environment and Heritage  
PO Box A290  
SYDNEY SOUTH NSW 1232.

### 1 Applicant

An applicant for biodiversity certification must be a planning authority (e.g. a local council or the Director-General of the Department of Planning and Infrastructure). If this is a joint application from multiple planning authorities, each authority's details must be provided. The form provides fields for two planning authorities. Photocopy extra pages if more than two planning authorities are involved.

| Planning authority 1                      |  |          |   |
|---|--|----------|---|
| Name                                      | Campbelltown City Council                    |          |   |
| ABN                                       | 31 459 914 087                               |          |   |
| Street address                            |  |          |   |
| Address                                   | PO Box 57 Corner Queen and Broughton streets |          |   |
| Town                                      | Campbelltown                                 |          |   |
| State                                     | NSW  | Postcode | 2560                                    |
| Mailing address (if different from above) |  |          |   |
| Address                                   | PO Box 57                                    |          |   |
| Town                                      | Campbelltown                                 |          |   |
| State                                     | NSW  | Postcode | 2560                                    |
| Main contact                              |  |          |   |
| Name                                      | Angela Taylor                                |          |   |
| Phone                                     | 02 4645 4847                                 | Mobile   |   |
| Fax                                       | 02 4645 4420                                 | Email    | Angela.Taylor@campbelltown.nsw.gov.au   |
| Alternative contact                       |  |          |   |
| Name                                      | Fletcher Rayner                              |          |   |
| Phone                                     | 02 4645 4305                                 | Mobile   | 0410 845 710                            |
| Fax                                       | 02 4645 4420                                 | Email    | Fletcher.Rayner@campbelltown.nsw.gov.au |

| <b>Planning authority 2 (if applicable)</b>      |  |          |  |
|--|--|----------|--|
| Name   |  |          |  |
| ABN  |  |          |  |
| <b>Street address</b>                            |  |          |  |
| Address  |  |          |  |
| Town   |  |          |  |
| State  |  | Postcode |  |
| <b>Mailing address (if different from above)</b> |  |          |  |
| Address  |  |          |  |
| Town   |  |          |  |
| State  |  | Postcode |  |
| <b>Main contact</b>                              |  |          |  |
| Name   |  |          |  |
| Phone  |  | Mobile   |  |
| Fax  |  | Email    |  |
| <b>Alternative contact</b>                       |  |          |  |
| Name   |  |          |  |
| Phone  |  | Mobile   |  |
| Fax  |  | Email    |  |

## 2 Other proposed parties to biodiversity certification

The applicant(s) may propose any other person or body to be a party or parties to the biodiversity certification. By signing section 13 of this application form, such a person or body consents to being made a party to the biodiversity certification. This form provides fields for two proposed parties. Photocopy extra pages if more than two parties are proposed.

| Proposed other party 1 (if applicable)    |   |          |  |
|---|---|----------|--|
| Name                                      | Mt Gilead Pty Ltd   |          |  |
| ABN                                       | 92 008 499 189  |          |  |
| Street address                            |   |          |  |
| Address                                   | C/- Nexia Australia, Level 16, 1 Market Street  |          |  |
| Town                                      | Sydney  |          |  |
| State                                     | NSW   | Postcode | 2000   |
| Mailing address (if different from above) |   |          |  |
| Address                                   |   |          |  |
| Town                                      |   |          |  |
| State                                     |   | Postcode |  |
| Main contact                              |   |          |  |
| Name                                      | Lee Macarthur-Onslow  |          |  |
| Phone                                     |   | Mobile   | 0400 483 141   |
| Fax                                       |   | Email    | Leemos@bigpond.com                                       |
| Alternative contact                       |   |          |  |
| Name                                      |   |          |  |
| Phone                                     |   | Mobile   |  |
| Fax                                       |   | Email    |  |
| Proposed other party 2 (if applicable)    |   |          |  |
| Name                                      | S & A Dzwonnik Lendlease Communities (Mt Gilead No.3) Pty Limited                                     |          |  |
| ABN                                       | 39614 296 294   |          |  |
| Street address                            |   |          |  |
| Address                                   | <del>90 Badgally Road</del> Level 14, Tower Three, International Towers Sydney, 300 Barangaroo Avenue |          |  |
| Town                                      | Campbelltown Barangaroo   |          |  |
| State                                     | NSW   | Postcode | <del>2560</del> 2000                                     |
| Mailing address (if different from above) |   |          |  |
| Address                                   |   |          |  |
| Town                                      |   |          |  |
| State                                     |   | Postcode |  |
| Main contact                              |   |          |  |
| Name                                      | Anna Dzwonnik Mark Anderson   |          |  |
| Phone                                     | <del>02 4626 5944</del> 9236 6985   | Mobile   | 0419 148 853   |
| Fax                                       | <del>02 4626 3227</del>   | Email    | mark.anderson@lendlease.com<br>anna.dzwonnik@hotmail.com |
| Alternative contact                       |   |          |  |
| Name                                      | Kevin Montier   |          |  |
| Phone                                     | 02 9236 6985  | Mobile   | 0418 237 773   |
| Fax                                       |   | Email    | kevin.montier@lendlease.com                              |

## 2 Other proposed parties to biodiversity certification

The applicant(s) may propose any other person or body to be a party or parties to the biodiversity certification. By signing section 13 of this application form, such a person or body consents to being made a party to the biodiversity certification. This form provides fields for two proposed parties. Photocopy extra pages if more than two parties are proposed.

| Proposed other party 1 (if applicable)           |  |          |   |
|--|--|----------|---|
| Name   | Lendlease Communities (Mount Gilead) Pty Ltd       |          |   |
| ABN  | 88 605 278 331                                     |          |   |
| <b>Street address</b>                            |  |          |   |
| Address  | Level 14, Tower Three, International Towers Sydney |          |   |
| Town   | Exchange Place, 300 Barangaroo Ave, Barangaroo     |          |   |
| State  | NSW  | Postcode | 2000                                    |
| <b>Mailing address (if different from above)</b> |  |          |   |
| Address  |  |          |   |
| Town   |  |          |   |
| State  |  | Postcode |   |
| <b>Main contact</b>                              |  |          |   |
| Name   | Mark Anderson                                      |          |   |
| Phone  | +61 2 9236 6985                                    | Mobile   | 0419 148853                             |
| Fax  |  | Email    | mark.anderson@lendlease.com             |
| <b>Alternative contact</b>                       |  |          |   |
| Name   | Kevin Montier                                      |          |   |
| Phone  | +61 2 9236 6985                                    | Mobile   | 0418 237 773                            |
| Fax  |  | Email    | kevin.montier@lendlease.com             |
| Proposed other party 2 (if applicable)           |  |          |   |
| Name   | Campbelltown City Council                          |          |   |
| ABN  | 31 459 914 087                                     |          |   |
| <b>Street address</b>                            |  |          |   |
| Address  | PO Box 57  |          |   |
| Town   | Campbelltown                                       |          |   |
| State  | NSW  | Postcode | 2560                                    |
| <b>Mailing address (if different from above)</b> |  |          |   |
| Address  |  |          |   |
| Town   |  |          |   |
| State  |  | Postcode |   |
| <b>Main contact</b>                              |  |          |   |
| Name   | Angela Taylor                                      |          |   |
| Phone  | 02 4645 4847                                       | Mobile   | 0439 131 500                            |
| Fax  | 02 4645 4111                                       | Email    | Angela.Taylor@campbelltown.nsw.gov.au   |
| <b>Alternative contact</b>                       |  |          |   |
| Name   | Fletcher Rayner                                    |          |   |
| Phone  | 02 4645 4305                                       | Mobile   | 0410 845 710                            |
| Fax  | 024645 4420  | Email    | Fletcher.Rayner@campbelltown.nsw.gov.au |

### 3 Proposed land for biodiversity certification

List all parcels of land proposed for biodiversity certification. The land proposed for biodiversity certification is the land proposed for future development. A map showing the boundaries of the biodiversity certification area is also required. Sections 4 and 5 deal with the area(s) of land conservation measures will be implemented on.

If any area of the land is identified as being in a 'red flag area' (see section 2.4 of the Biodiversity Certification Assessment Methodology), biodiversity certification cannot be conferred unless the Director General has determined that the impacts on the red flag area may be offset (a 'red flag variation').

| Location  |   |
|---|---|
| Name (if any)   | Mt Gilead <sup>MDP</sup> <del>MPD</del> lands   |
| Total area proposed for certification (hectares)  | 165.55 ha   |
| Title reference (lot and DP numbers and folio identifiers)  | Lot 61 <sup>DP</sup> <del>DP</del> 752042, part Lot 2 DP 1218887 and Lots 1, 2, 3 and part Lot 4 and 5 DP 1240836 (previously Lot 3 DP 1218887 <sup>which was previously Lot 2 DP 807555 and Lot 59 DP 752042</sup> ) as shown in Figure 3 of the Biocertification Assessment report (ELA 2018)   |
| Is a red flag variation(s) sought in accordance with section 2.4 of the Biodiversity Certification Assessment Methodology? (See explanatory text above.)  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No  |
| If 'yes', explain how the criteria in section 2.4.1 of the Biodiversity Certification Assessment Methodology will be met.   | Section 5 of the Biocertification Assessment report (ELA 2018) addresses the criteria in s2.4.1 of the BCAM for each red flag entity impacted   |
| What measures are proposed to mitigate the indirect impacts of biodiversity certification on biodiversity values (required under Chapter 6 of the Biodiversity Certification Assessment Methodology)? | Section 4.6, 4.7 and 5.2.1 of the Biocertification Assessment report (ELA 2018) outlines the measures to avoid and mitigate impacts to biodiversity values and red flag areas. Further, Section 6.7 provides a commitment to prepare and implement a Construction Environment Management Plan that will detail all the measures required to minimise impacts to biodiversity values |

Note: Attach separate documents including maps.

#### 4 Conservation measures proposed to be implemented on land within the biodiversity certification assessment area

|  |
|--|
| <input type="checkbox"/> There is no land in the biodiversity certification assessment area proposed for conservation measures (go to section 5)       |
| <input checked="" type="checkbox"/> There is land in the biodiversity certification assessment area proposed for conservation measures (specify below) |

Specify the conservation measures proposed to be implemented on land in the biodiversity certification assessment area and list all parcels of land on which these conservation measures are proposed. A map showing the boundaries of the conservation measure area(s) is also required.

This form provides fields for two conservation measures. Photocopy extra pages if there are more than two conservation measures.

| Conservation measure (land within assessment area) <sup>1</sup>  |  |
|--|--|
| Type of conservation measure   | Entering into Biobanking Agreement under Part 7A<br>(Registration of Biobank site comprising the transfer of 3.61 ha of land to Campbelltown Council)  |
| Party responsible for implementing the conservation measure (include name, contact details and ACN or ABN if corporation)                                  | <del>Campbelltown City Council</del> Lendlease Communities (Mt Gilead No.3) Pty Limited<br>ABN: 31 450 914 087 <del>39 642 96 294</del><br>Contact: Angela Taylor as per Section 1 of this application form<br>Mark Anderson, 02 9236 6985 or 0419 148 853 |
| Timing of implementation of conservation measure   | By 2025 within 12 months of conferral of biocertification  |
| Property name and/or street address (if any)   | Part of Lot 61 <del>DP</del> <sup>DP</sup> 752042 <del>as shown in Figure 3 of the Biocertification Assessment report (ELA 2017)</del> <sup>and Lot 1 DP 124 0836</sup><br>2018  |
| Number of hectares on which proposed conservation measure will apply   | 3.61 ha of land to be transferred to Campbelltown Council and registered as a Biobank site, of which 2.67 ha comprises the 100% conservation measure. The remaining 0.94ha is 'retained' land (red flag huffer)  |
| Title reference (lot and DP numbers and folio identifiers)   | Part of Lot 61 <del>DP</del> <sup>DP</sup> 752042 and Part of Lot 1 DP 124 0836  |
| Is a biodiversity certification agreement proposed to secure the conservation measure?<br><br>If 'yes', attach a copy of the draft agreement to this form. | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No   |

| <b>Conservation measure (land within assessment area) 2</b>  |  |
|--|--|
| Type of conservation measure   |  |
| Party responsible for implementing the conservation measure (include name, contact details and ACN or ABN if corporation)                                  |  |
| Timing of implementation of conservation measure   |  |
| Property name and/or street address (if any)   |  |
| Number of hectares on which proposed conservation measure will apply   |  |
| Title reference (lot and DP numbers and folio identifiers)   |  |
| Is a biodiversity certification agreement proposed to secure the conservation measure?<br><br>If 'yes', attach a copy of the draft agreement to this form. | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |

**Note: If the conservation measure is a planning instrument, supply the relevant local environmental plan or development control plan, including zoning maps.**



**5 Conservation measures proposed to be implemented on land outside the certification assessment area (other than retirement of biodiversity credits and financial contributions)**

|  |
|--|
| <input checked="" type="checkbox"/> There is no land outside the biodiversity certification assessment area proposed for conservation measures (go to section 6) |
| <input type="checkbox"/> There is land outside the biodiversity certification assessment area proposed for conservation measures (specify below)                 |

Specify the conservation measures proposed to be implemented on land outside the biodiversity certification assessment area and list all parcels of land on which the conservation measures are proposed. A map showing the boundaries of the conservation measure area(s) is also required.

Do not include conservation measures involving the retirement of biodiversity credits or financial contributions here as these will be dealt with in sections 6 and 7 respectively.

This form provides fields for two conservation measures. Photocopy extra pages if there are more than two conservation measures.

| Conservation measure (land outside assessment area) 1  |  |
|--|--|
| Type of conservation measure   |  |
| Party responsible for implementing the conservation measure (include name, contact details and ACN or ABN if corporation)                              |  |
| Timing of implementation of conservation measure   |  |
| Property name and/or street address (if any)   |  |
| Number of hectares on which proposed conservation measure will apply   |  |
| Title reference (lot and DP numbers and folio identifiers)   |  |
| Is a biodiversity certification agreement proposed to secure the conservation measure?<br>If 'yes', attach a copy of the draft agreement to this form. | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |

| <b>Conservation measure (land outside assessment area) 2</b>  |   |
|---|---|
| Type of conservation measure  |   |
| Party responsible for implementing the conservation measure (include name, contact details and ACN or ABN if corporation)   |   |
| Timing of implementation of conservation measure  |   |
| Property name and/or street address (if any)  |   |
| Number of hectares on which proposed conservation measure will apply  |   |
| Title reference (lot and DP numbers and folio identifiers)  |   |
| <p>Is a biodiversity certification agreement proposed to secure the conservation measure?</p> <p>If 'yes', attach a copy of the draft agreement to this form.</p> | <input type="checkbox"/> Yes<br><input type="checkbox"/> No |

## 6 Biodiversity credits proposed to be (purchased and) retired as a conservation measure

There are no biodiversity credits to be retired as a conservation measure (go to section 7)

There are biodiversity credits to be retired as a conservation measure (specify below)

Specify the type of biodiversity credit and the number of credits to be retired. Specify who currently holds the credits. Photocopy extra pages if required.

| Type of credit (ecosystem/species) | Name of credit | Number of credits    | Current credit holder (name and ID number)                       | Timing of purchase/retirement of credits*  |
|------------------------------------|----------------|----------------------|--|--|
| Ecosystem                          | HN528          | 28                   | Mt Gilead Pty Limited - BA209<br>Noorumba-Mt Gilead BioBank site | *2<br>Prior to commencement of Stage-1   |
| Ecosystem                          | HN556          | <del>84</del><br>104 | Mt Gilead Pty Limited - BA208<br>Macarthur-Onslow BioBank site   | *2<br>Prior to commencement of Stage-1   |
| Species                            | Koala          | 85                   | Mt Gilead Pty Limited - BA208<br>Macarthur-Onslow BioBank site   | *2<br>Prior to commencement of Stage-1   |
| Species                            | Koala          | 48                   | Mt Gilead Pty Limited - BA209<br>Noorumba-Mt Gilead BioBank site | *2<br>Prior to commencement of Stage-1   |
| Species                            | Koala          | 151                  | Lendlease (Communities) Mt Gilead Pty Ltd                        | *2<br>Prior to commencement of Stage-2   |
| Ecosystem                          | HN556          | All credits<br>20    | *1 100% conservation measure                                     | *2<br>within 6 months of registration<br>of biobanking Agreement<br><small>By 2025 land transfer</small> |
|                                    |                |                      |  |  |
|                                    |                |                      |  |  |

Timing is determined by the Minister under section 126Y 2(b) of the *Threatened Species Conservation Act 1995*

\*1 Biobank site to be registered by Lendlease Communities (Mt Gilead No. 3) Pty Limited

\*2 after conferral of biodiversity certification/prior to clearing or subdivision works certificate.

**7 Financial contribution proposed as a conservation measure and secured by a biodiversity certification agreement**

|   |
|---|
| <input checked="" type="checkbox"/> There is no financial contribution proposed as a conservation measure (go to section 8) |
| <input type="checkbox"/> There is a financial contribution proposed as a conservation measure (specify below)               |

List any financial contribution (other than special infrastructure contributions which are dealt with in section 8) proposed as a conservation measure.

| Conservation measure (financial contribution)   |   |
|---|---|
| Party responsible for providing financial contribution (include name, contact details and ACN or ABN if corporation)  |   |
| Date(s) by which financial contribution is proposed to be provided  |   |
| Number and type of credits used to calculate financial contribution   |   |
| Amount of financial contribution  |   |
| Number and type of credits to which financial contribution is equivalent  |   |
| Details of conservation measures proposed to be funded by the financial contribution  |   |
| Is a biodiversity certification agreement proposed to secure the financial contribution?<br><br>If 'yes', attach a copy of the draft agreement to this application. | <input type="checkbox"/> Yes<br><input type="checkbox"/> No |

**8 Special infrastructure contribution (SIC) proposed as a conservation measure**

|  |
|--|
| <input checked="" type="checkbox"/> There is no SIC proposed as a conservation measure (go to section 9) |
| <input type="checkbox"/> There is a SIC proposed as a conservation measure (specify below)               |

| <b>Special infrastructure contribution (SIC)</b>  |  |
|---|--|
| Details of SIC area declaration and Minister for Planning and Infrastructure's SIC determination                          |  |
| Amount of SIC to be dedicated to conservation measures for the purposes of biodiversity certification                     |  |
| Number and type of credits to which SIC is equivalent   |  |
| Estimated timing of SIC collection into SIC Fund (including commencement of SIC collection and estimated collection rate) |  |
| Estimated timing of SIC payments out of SIC fund for the purpose of funding conservation measures                         |  |
| Details of conservation measures proposed to be funded by the SIC   |  |

**Note: Please attach evidence of support from Director-General of the Department of Planning and Infrastructure**

## 9 Credit summary

List the type and number of all ecosystem and species credits required for the land where biodiversity certification is proposed. Against each required credit type, list the number and type of credits to be created by the proposed conservation measures which are suitable to offset that particular credit type. Photocopy extra pages if required.

| Type of credit required for the land where biodiversity certification is proposed | Name of credit and details of credit profile | Number of credits required for land proposed for certification (A) | Type of credit (or equivalent \$) created by proposed conservation measure | Number of credits created by proposed conservation measure (B) | Conservation measure(s) by which credits will be created | Surplus/ deficit of credits (B - A) | Biodiversity Conservation Assessment Methodology section 10 variation requested? (Yes/No) |
|---|--|--|--|--|--|-------------------------------------|---|
| Ecosystem   | HN528  | 28   | HN528  | 74   | Registration of BB Site <sup>1</sup>                     | 46                                  | No  |
| Ecosystem   | HN556  | 104  | HN556  | <del>20</del> 120  | <del>100%</del> conservation <sup>1</sup>                | <del>84</del> 16                    | No  |
| Ecosystem   | HN556  | <del>84</del> 0  | HN556  | <del>20</del> 17   | Registration of BB Site <sup>1</sup>                     | <del>36</del> 0                     | No  |
| Species   | Koala  | 284  | Koala  | 48   | Registration of BB Site <sup>1</sup>                     | -236                                | No  |
| Species   | Koala  | * <sup>2</sup> 236   | Koala  | 85   | Registration of BB Site <sup>1</sup>                     | -151                                | No  |
| Species   | Koala  | * <sup>2</sup> 151   | Koala  | 151  | Retirement of credits <sup>1</sup>                       | 0                                   | No  |
|   |  |  |  |  |  |                                     |   |
|   |  |  |  |  |  |                                     |   |
|   |  |  |  |  |  |                                     |   |
|   |  |  |  |  |  |                                     |   |
|   |  |  |  |  |  |                                     |   |
|   |  |  |  |  |  |                                     |   |
|   |  |  |  |  |  |                                     |   |
|   |  |  |  |  |  |                                     |   |

<sup>1</sup> Retirement of credits

\*<sup>2</sup> Carried over from the row above

## 10 Documentation required to be attached

|  |
|--|
| <input checked="" type="checkbox"/> <b>Biodiversity certification strategy</b>   |
| <p>The biodiversity certification strategy must detail:</p> <p><input checked="" type="checkbox"/> land proposed for biodiversity certification</p> <p><input checked="" type="checkbox"/> land proposed for biodiversity conservation</p> <p><input checked="" type="checkbox"/> proposed conservation measures</p> <p><input checked="" type="checkbox"/> parties to the biodiversity certification</p> <p>Both hard copies and electronic copies (on CD) of all information are required.</p> |
| <input checked="" type="checkbox"/> <b>Biodiversity certification assessment report</b>  |
| <p>The assessment report should cover all land in the biodiversity certification area and all land proposed for conservation measures.</p> <p>Both hard copies and electronic copies (on CD) of all information are required.</p>  |
| <input type="checkbox"/> <b>Biodiversity certification agreement(s)</b>  |
| <p>Attach any draft or executed biodiversity certification agreements that relate to the conservation measures proposed in this form.</p>  |

|   |  |
|---|--|
| <b>11 Public notification – OEH Office Use Only</b>   |  |
| <p>This section is to be completed after the application form has been submitted and notification requirements have been met.</p> |  |
| Name of newspaper where notification published  | SMH & Macarthur Chronicle  |
| Date of publication   | 12 & 13th December 2017  |
| Start date of notification period   | 12 December 2017   |
| End date of notification period   | 31 January 2018  |
| Public submission response report provided?   | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No |

## 12 BioBanking Assessor declaration

|                      |  |
|----------------------|--|
| Name                 | Bruce Mullins  |
| Accreditation number | 0156   |
| Declaration          | <p>I declare that all information supplied in relation to the biodiversity certification assessment complies with the Biodiversity Certification Assessment Methodology and, where applicable, the BioBanking Assessment Methodology.</p> <p>I understand that I am personally accountable for the validity of all data collected and analysis performed and that I have adequately supervised all support team members for this assessment.</p> <p>I have undertaken this assessment within the terms of my accreditation as a BioBanking Assessor and have adhered to the BioBanking Assessor code of conduct.</p> |
| Signature            |  |

## 10 Documentation required to be attached


|   |
|---|
| <input checked="" type="checkbox"/> <b>Biodiversity certification strategy</b>  |
| The biodiversity certification strategy must detail:<br><input checked="" type="checkbox"/> land proposed for biodiversity certification<br><input checked="" type="checkbox"/> land proposed for biodiversity conservation<br><input checked="" type="checkbox"/> proposed conservation measures<br><input checked="" type="checkbox"/> parties to the biodiversity certification<br>Both hard copies and electronic copies (on CD) of all information are required. |
| <input checked="" type="checkbox"/> <b>Biodiversity certification assessment report</b>   |
| The assessment report should cover all land in the biodiversity certification area and all land proposed for conservation measures.<br>Both hard copies and electronic copies (on CD) of all information are required.  |
| <input type="checkbox"/> <b>Biodiversity certification agreement(s)</b>   |
| Attach any draft or executed biodiversity certification agreements that relate to the conservation measures proposed in this form.  |

## 11 Public notification – OEH Office Use Only

This section is to be completed after the application form has been submitted and notification requirements have been met.

|  |   |
|--|---|
| Name of newspaper where notification published |   |
| Date of publication                            |   |
| Start date of notification period              |   |
| End date of notification period                |   |
| Public submission response report provided?    | <input type="checkbox"/> Yes<br><input type="checkbox"/> No |


## 12 BioBanking Assessor declaration


|                      |  |
|----------------------|--|
| Name                 | Bruce Mullins  |
| Accreditation number | 0156   |
| Declaration          | <p>I declare that all information supplied in relation to the biodiversity certification assessment complies with the Biodiversity Certification Assessment Methodology and, where applicable, the BioBanking Assessment Methodology.</p> <p>I understand that I am personally accountable for the validity of all data collected and analysis performed and that I have adequately supervised all support team members for this assessment.</p> <p>I have undertaken this assessment within the terms of my accreditation as a BioBanking Assessor and have adhered to the BioBanking Assessor code of conduct.</p> |
| Signature            |    |




### 13 Consent of other proposed parties

Photocopy extra pages if there are more than three other proposed parties

|           |  |
|-----------|--|
| Name      | Campbelltown City Council  |
| Consent   | In accordance with s. 126Z(2)(b), I consent to being made a party to the biodiversity certification. |
| Signature |                     |


|           |  |
|-----------|--|
| Name      | Lendlease Communities (Mount Gilead) Pty Ltd   |
| Consent   | In accordance with s. 126Z(2)(b), I consent to being made a party to the biodiversity certification.                         |
| Signature |  Mark Anderson - Senior Development Manager |

|           |  |
|-----------|--|
| Name      | Mt Gilead Pty Ltd  |
| Consent   | In accordance with s. 126Z(2)(b), I consent to being made a party to the biodiversity certification. |
| Signature |  Director         |

### 13 Consent of other proposed parties

Photocopy extra pages if there are more than three other proposed parties

|           |  |
|-----------|--|
| Name      | <del>G</del> and A Dzwonnik  |
| Consent   | In accordance with s. 126Z(2)(b), I consent to being made a party to the biodiversity certification. |
| Signature | Please refer to attached letter  |

|           |  |
|-----------|--|
| Name      | <i>Lendlease Communities (Mt Culead No. 3) Pty Limited</i>   |
| Consent   | In accordance with s. 126Z(2)(b), I consent to being made a party to the biodiversity certification. |
| Signature |                     |

|           |  |
|-----------|--|
| Name      |  |
| Consent   | In accordance with s. 126Z(2)(b), I consent to being made a party to the biodiversity certification. |
| Signature |  |

## 14 Signature(s) of the planning authority(s)


This application should be signed by the legal representative(s) of the planning authority or authorities). The various ways in which the application may be signed, and the people who may sign the application, are set out in the categories below.

| Planning authority   | Application is signed and certified by  |
|--|---|
| <input checked="" type="checkbox"/> A local council  | <input checked="" type="checkbox"/> The general manager (or delegate) in accordance with s.377 of the <i>Local Government Act 1993</i> (LG Act), or<br><input type="checkbox"/> The seal of the council being affixed in a manner authorised under the LG Act |
| <input type="checkbox"/> Minister for Planning   | <input type="checkbox"/> Minister for Planning and Infrastructure, or<br><input type="checkbox"/> Delegate of the Minister for Planning and Infrastructure  |
| <input type="checkbox"/> Director-General of the Department of Planning and Infrastructure | <input type="checkbox"/> Director-General of the Department of Planning and Infrastructure, or<br><input type="checkbox"/> Delegate of the Director-General of the Department of Planning and Infrastructure  |
| <input type="checkbox"/> Other (specify)   |   |

I/we:

- apply to the Minister administering the *Threatened Species Conservation Act 1995* for biodiversity certification of land identified in section 3 of this form, and
- include particulars of the biodiversity certification strategy, and
- declare that the information in this biodiversity certification application (including any attachments) is not false or misleading in any material particular.

Photocopy extra pages if there are more than four signatories.

|           |   |           |  |
|-----------|---|-----------|--|
| Signature |  | Signature |  |
| Name      |   | Name      |  |
| Position  |   | Position  |  |
| Date      |   | Date      |  |

|           |  |           |  |
|-----------|--|-----------|--|
| Signature |  | Signature |  |
| Name      |  | Name      |  |
| Position  |  | Position  |  |
| Date      |  | Date      |  |

Affix common seal (if signing under seal)

## **15 Lodging the application**

Once completed and signed, send the application with all supporting documentation to:

Minister for the Environment  
c/- the Chief Executive, Office of Environment and Heritage  
PO Box A290  
SYDNEY SOUTH NSW 1232.

Published by:  
Office of Environment and Heritage  
Department of Premier and Cabinet  
59-61 Goulburn Street, Sydney  
PO Box A290, Sydney South 1232  
Phone: (02) 9995 5000 (switchboard)  
Phone: 131 555 (environment information and publications requests)  
TTY: (02) 9211 4723  
Fax: (02) 9995 5999  
Email: [info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au)  
Website: [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

OEH 2012/0044  
January 2012

25<sup>th</sup> August 2016

Anna and Stefan Dzwonnik  
90 Bagdally Rd  
Blairmount, NSW 2559.

**Re: 90 Appin Rd Mt Gilead. Acting for Landowner and Property**

Dear Anna,

This letter is to acknowledge that in accordance with the agreement between ourselves that as landowner of 90 Appin Rd, Mt Gilead, (Lot 61 DP 752042) you consent to Lendlease acting on behalf of the landowner and property to,

- Engage with Government agencies and Utilities to pursue the necessary planning approvals and agreements required to achieve planning and environmental approvals.
- Enter planning and commercial agreements with necessary Government agencies and utilities required to achieve planning and environmental approvals and enable future development of the property.

For your information we understand we will be required to engage with (not limited to) the following agencies and utilities,

- Department of Planning and Environment
- Office of Environment and Heritage.
- Federal Department of Environment.
- Campbelltown City Council.
- Roads and Maritime Services.
- Sydney Water.
- Endeavour Electrical.
- Jemina gas

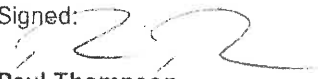
For your information during this engagement, Lendlease shall be represented by various key Lendlease staff (not limited to)

- Paul Thompson,
- Michael Gilligan,
- Ranisha Clarke,
- Mark Anderson.
- Cameron Beames.

This engagement will assist Lendlease in securing the necessary planning approvals and agreements in accordance with our agreement.

Lendlease may refer to this signed letter if required by the relevant agencies or utilities.

Signed:



**Paul Thompson**

State Business Development Manager (NSW / ACT)  
Lendlease.

Signed:



**Anna Dzwonnik**

Landowner

## 8. REPORTS FROM OFFICERS

### 8.1 South Campbelltown Koala Habitat Connectivity Study

#### Reporting Officer

Director City Development  
City Development

#### Community Strategic Plan

| Objective  | Strategy  |
|--|---|
| 2 Outcome Two: A Respected and Protected Natural Environment | 2.5 - Plan for and ensure that development in our city is sustainable and resilient |

#### Officer's Recommendation

1. That Council note the recommendations from the South Campbelltown Koala Habitat Connectivity Study.
2. That a copy of the South Campbelltown Koala Habitat Study be provided to the Department of Planning and Environment, Roads and Maritime Services and the Office of Environment and Heritage to inform the strategic planning process for Macarthur South and associated infrastructure upgrades in respect to:
  - a. Establishing at least three east-west primary natural asset corridors in the Mount Gilead (South Campbelltown) urban release area, with minimum widths ranging from 200m-425m with a least one corridor designed specifically for koalas that achieves an average width of 425m.
  - b. The provision of at least three fauna and koala overpasses along Appin Road, supported by wildlife exclusion fencing and koala-grids across all associated driveways and intersections.

#### Purpose

The purpose of this report is to inform Council of the findings of the South Campbelltown Koala Habitat Connectivity Study.

#### History

South Campbelltown (Gilead) is identified by the Greater Macarthur Growth Area plan to accommodate approximately 18,000 new residential dwellings over 40 years. This growth will generate additional traffic growth and demand the staged upgrade of Appin Road to meet more acceptable service levels.

Council has previously resolved that planning for biodiversity preservation ought to be addressed during the strategic planning process, in relation to:

- A requirement for the installation of fauna exclusion fencing, appropriate tunnels and high crossing points, to enable safe access through wildlife corridors as part of future development in Mt Gilead (April 2017)
- Immediate installation of overpasses and koala exclusion fencing along the current alignment of Appin Road (June 2017)
- A policy position and principles relating to natural asset corridors (November 2017).

In response to the recent rezoning Gilead (Stage 1), Roads and Maritime Services (RMS) has commenced planning for the upgrade of Appin Road. Recent advice from the RMS indicates that the carriageway design would accommodate up to 6 lanes with fencing along the eastern side to manage koala fatalities. The RMS further advised that no Koala connectivity structures are proposed in current planning, as preliminary advice from the Office of Environment and Heritage (OEH) did not identify the need for such structures.

Given the apparent absence of information regarding koala habitat utilisation west of Appin Road, a Koala Habitat study was commissioned by Council in October 2017. The study addresses the need for east west connectivity based on the outcomes of field observations.

## Report

In October 2017, Council engaged koala expert Dr Steve Phillips (of Biolink) to undertake a comprehensive assessment of koalas and their habitat in the south Campbelltown area. The aim of the study is to provide evidence-based advice and guidance on the viability of koala habitat and connectivity across the area, especially within existing corridors in the region. A copy of the study is attachment one to this report, and provides extensive detail on the methodology and findings.

Notification of the survey was issued to landholders in late November seeking consent to access individual properties. Access to private property only occurred with the consent of the land owner. Attachment two identifies those properties that were accessed as part of the survey with access granted by the landowners.

The study is relevant in informing the design and scope of the following proposed infrastructure and planning processes for South Campbelltown:

- Appin Road upgrade Review of Environmental Factors (REF) (Stage 1 planned for public exhibition in February, 2018)
- Draft Land Use and Infrastructure Implementation Plan (LUIP) for the South Campbelltown priority Growth Area
- future Planning proposals for South Campbelltown (ie. balance lands and Stage 3)
- Department of Planning and Environment's Strategic Sustainability Plan for Western Sydney/Biodiversity Certification Strategy.

The above matters are at various stages of development and upon commencement of formal consultation, would require a submission from Council.

## 1. Findings of the South Campbelltown Koala Habitat Connectivity Study

The study indicates that the natural asset corridors in Macarthur South are sustaining resident koala populations with high occupancy rates; confirming not only the presence of koalas, but the importance of the natural asset corridors in providing koala movements and the exchange of genetic material between the Campbelltown and Nepean Koala populations.

Therefore, to preserve existing connectivity, provision for koala movement and habitat ought to be a key planning objective for the South Campbelltown area. Based on the study findings, the following actions are recommended:

1. Advocating for road mitigation measures to be installed as part of the Appin Road upgrade (between the southern limits of residential development at Campbelltown and the northern limit residential development at Appin) that facilitate the movement of koalas and other wildlife, including:
  - a minimum of three fauna overpasses
  - reinforcement of overpass utility by use of wildlife exclusion fencing along both sides of Appin Road
  - the installation of koala-grids on all residual driveways and road intersections entering the area of the Appin Road upgrade.
2. Establishing natural assets corridors that adequately provide for the future viability of resident koalas and their habitat into the future, including:
  - at least three east-west natural assets corridors,
  - at least one corridor should be designed specifically for koalas by planning to ensure an optimal average width of 425 m.

The above actions are generally consistent with the corridors identified in Council's draft Campbelltown CKPoM and Natural Asset Corridors policy position for south Campbelltown. However, to be consistent with the study, widening of one of the corridors would be required.

During field surveys substantive and widespread eucalypt dieback in koala habitat around the junction of the Woodhouse – Menangle and Nepean Creeks was observed. This is likely to be associated with nutrients arising from the disposal of waste water adjacent to this area. The extent of dieback and associated impacts could be addressed at a minimum, by reducing the radial spray area so as to increase the buffer to adjoining riparian areas and will be investigated separately.

## 2. Update on the status of the Draft Campbelltown Koala Plan of Management (CKPoM)

The draft CKPoM is currently being revised by Council officers in accordance with advice received from the Department of Planning and Environment (DPE) in December, 2017. The nature of these changes and associated implications for the CKPoM will be separately reported to Council.

### Conclusion

The South Campbelltown Koala Connectivity Study has confirmed the importance of the natural asset corridors in Macarthur South in providing koala habitat, movements and the subsequent exchange of genetic materials between the Campbelltown and Nepean Koala populations.



In this context protection and optimisation of the natural asset corridors in Macarthur South to support koala movement should be a key planning consideration of the Appin Road upgrade, infrastructure identified in the LUIP and the Biodiversity Certification Strategy.

Therefore, it is recommended that Council note the recommendations arising from the South Campbelltown Koala Habitat Connectivity Study and submit this report to the Department of Planning and Environment, Roads and Maritime Services and the Office of Environment and Heritage to inform a response to these issues.

### **Attachments**

1. South Campbelltown Koala Habitat Connectivity Study (contained within this report)
2. Map identifying properties that were accessed as part of the study (contained within this report)

**South Campbelltown Koala Habitat Connectivity Study**



**Report to Campbelltown City Council**

**December 2017**



PO Box 3196 Uki NSW 2484  
T 02 6679 5593  
F 02 6679 5523  
www.biolink.com.au

**Table of Contents**

1 Introduction ..... 4

2 Methods ..... 5

    2.1 Study area ..... 5

    2.2 Vegetation ..... 6

    2.3 Habitat utilisation by koalas ..... 7

3 Results ..... 8

    3.1 Vegetation ..... 8

    3.2 Habitat Utilisation by koalas ..... 8

    3.3 Opportunistic fauna observations ..... 10

4 Discussion ..... 11

    4.1 Preferred (Potential) Koala habitat (PKH) ..... 11

    4.2 Eucalypt dieback ..... 11

    4.3 Koala occupancy and corridor use ..... 12

    4.4 Appin Road Upgrade ..... 13

    4.5 Conclusions ..... 15

References ..... 17

BiolinkSouth Campbelltown Koala Connectivity Study**Abbreviations**

| Abbreviation | Description                            |
|--------------|--|
| CCC          | Campbelltown City Council              |
| CKPoM        | Comprehensive Koala Plan of Management |
| DBH          | Diameter at Breast Height              |
| GMPGA        | Greater MacArthur Priority Growth Area |
| KMP          | Koala Management Precinct              |
| OEH          | Office of Environment and Heritage     |
| PKH          | Preferred Koala Habitat                |
| PKFT         | Preferred Koala Food Tree              |
| SLA          | Strategic Linkage Area                 |

**Acknowledgements**

Alexandra Cave, Renee Winsor and Angela Taylor assisted with landholder liaison and field assessments. Appreciation is also extended to landholders who kindly allowed access to their properties and shared their sightings of koalas with us.

## 1 Introduction

The Campbelltown koala population remains one of the more studied in the Greater Sydney region. This population, now deemed to be recovering from near extinction 20 – 30 years ago, recently became the focus of a draft Comprehensive Koala Plan of Management (CKPoM) prepared in accord with *State Environmental Planning Policy (SEPP) No 44 – Koala Habitat Protection*. Under the umbrella of the draft CKPoM, several Strategic Linkage Areas (SLAs) were identified, the aspirational intent of which was to afford connectivity across the planning landscape to enable recolonization of formerly utilized habitat areas. To this end, a key consideration relating to the designation of SLAs in the south of the Campbelltown City Council LGA (CCC LGA) was to enable the westward passage of koalas from the general area of the Wedderburn Plateau within the George's River catchment, to the adjoining Nepean River catchment within which koalas were also known to occur.

This study was focused on a largely rural landscape located to the west - south-west of the Wedderburn Plateau. The focal area comprised the localities of Menangle Park and Gilead, and is part of the Greater MacArthur Priority Growth Area (GMPGA). As far as planning for conservation purposes is concerned, the aforementioned SLAs have been identified as:

- regional, sub-regional and local corridors under Campbelltown's draft Biodiversity strategy, and
- core areas and regional corridors under the Office of Environment and Heritage (OEH) Biodiversity Investment Opportunities Map (BioMap).

In addition to potential development outcomes arising from the GMPGA designation, a major upgrade of Appin Road from 2 to 6 lanes is also in the early planning stages. Appin Road is a high-traffic volume, arterial road that skirts a substantive body of occupied koala habitat to the east and so bisects the aforementioned SLAs that extend from this area to the west. There are increasing numbers of koala vehicle-strike along this road, many of which can be associated with the aforementioned SLAs.

Despite the relatively recent<sup>1</sup> history of vehicle-strikes and potential importance of the SLAs in the study area, there is a paucity of relevant koala assessments and data. This is not an oversight, but reflects the ongoing recovery and range expansion of koalas in the CCC LGA that were initially identified by biolink (2015), such that there are now regular koala sightings

---

<sup>1</sup> Majority of road-kill has occurred within last decade.

being reported from areas to the west of Appin Road. Concomitant with this recovery trend is the opportunity to facilitate the colonization of formerly unoccupied areas of suitable habitat so as to enhance long-term population resilience in the event of a catastrophic fire event in the southeast of the CCC LGA. Given this background, a primary question that requires addressing is how important are the SLAs for koalas and from that, should any upgrade of Appin Road within the CCC LGA facilitate or restrict connectivity?

To assist Campbelltown City Council (CCC) to make informed planning decisions for koala conservation, a koala connectivity study was implemented with a focus on the aforementioned SLAs and the associated vegetation communities therein. The aims of this project were as follows:

1. To investigate the current koala usage and occupancy of the SLAs,
2. To determine the quality and extent of Preferred Koala Habitat (PKH) within the SLAs,
3. To evaluate the value of the SLAs for koala conservation based on PKH and occupancy considerations,
4. To evaluate the feasibility of establishing connections across Appin Road, and determine whether mitigation measures should facilitate or restrict connectivity, and
5. To provide any management and movement strategies in context of future development and infrastructure provision.

## 2 Methods

### 2.1 Study area

The general area of interest for this study was that associated with the network of east-west SLAs located in the southwestern corner of the CC LGA as identified in Figure 5.3 the draft CKPoM (Figure 1). From north to south, the three SLAs are hereafter referred to as:

1. *Menangle Creek Corridor*
2. *Woodhouse/ Menangle Creek & Nepean Creek Corridors<sup>2</sup>*
3. *Mallaty Creek Corridor.*

---

<sup>2</sup> Woodhouse / Menangle Creek and Nepean Creek are regarded as two separate corridors by Council mapping.

The preceding corridors exist in the form of remnant vegetation associated with 2<sup>nd</sup> order streams / drainage lines and are bounded in the east and west by the riparian landscapes of the Georges and Nepean Rivers respectively.

2.2 Vegetation

The majority of remnant vegetation cover across the study area is mapped as *Woodland on Wianamatta Shale* (Vegetation Codes 16 & 20), with smaller areas of *Western Gully Forest* or *Woodland on Hawkesbury Sandstones* (Vegetation Codes: 1, 4 & 8). Preferred Koala Food Tree species (PKFTs) for the Campbelltown LGA which occur in these vegetation communities include grey box *Eucalyptus moluccana*; forest red gum *E. tereticornis* and grey gum *E. punctata* (Phillips and Callaghan 2000; Ward *et al.* 2013; Biolink 2016).

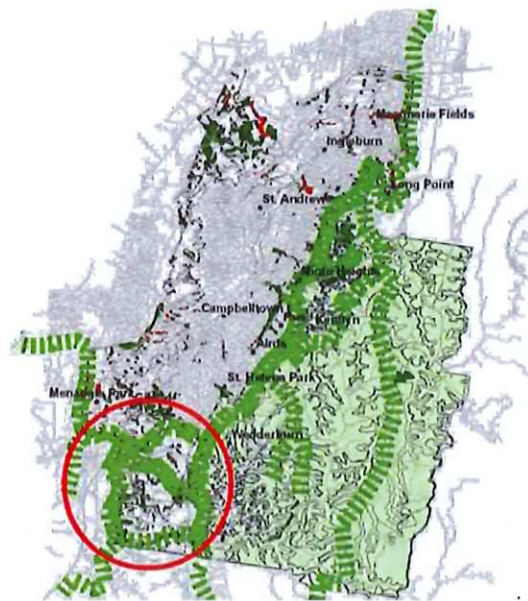


Figure 1. The general area of interest (red circle) is located in the southwestern corner of the Campbelltown LGA where a series of SLAs connect the Georges and Nepean River catchments and their associated koala populations.

Vegetation assessments were undertaken by recording height and species for the tallest-strata vegetation within a 25 m radius of each sampling point (see below). Abundance data for the tallest stratum were also collected by identifying the closest standing live stem



intersected by sighting along cardinal and intermediate compass points (*i.e.* a maximum of 8 samples in total) from the central sampling point (*sensu lato* Phillips *et al.* 2013).

**2.3 *Habitat utilisation by koalas***

Koala occupancy was determined using Rapid-SAT sampling protocols reliant upon the presence of diagnostic koala faecal pellets within a prescribed search area of 1 m around the bases of the abovementioned PKFTs. The Rapid-SAT approach is predicated by knowledge that in areas being utilised by koalas, there is a 50% probability of faecal pellets occurring within 1 m of the base of any PKFT  $\geq$  350 mm diameter at breast height (DBH) (Phillips & Wallis 2016).

Vegetation containing PKFTs was sampled at approximately 500 m intervals throughout the study area. Some flexibility with site placement ( $\pm$  25 m) was permitted so as to optimise the numbers of PKFTs being sampled at any point. Assessment at a given sampling point ceased when one or more koala faecal pellets had been detected. Conversely, if no pellets were detected, sampling ceased once the required numbers of PKFTs had been assessed so as to afford a high level of statistical confidence (*e.g.* 95 – 99%) that koalas were not using habitat in the immediate vicinity (Table 1).

**Table 1.** Binomial expansion showing confidence of 'koala absence' at an individual site based on the numbers of PKFTs that have been sampled with no koala faecal pellets being detected. Expansion is based on knowledge that in areas being utilised by koalas, there is a 50% probability of one or more koala faecal pellets being present within a distance of 1 m from the base of each PKFT  $\geq$  350 mm dbh that has been sampled.

| No. of PKFTs | Binomial Distribution (probability) | Confidence |
|--------------|-------------------------------------|------------|
| 1            | 0.5                                 | 50%        |
| 2            | 0.25                                | 75%        |
| 3            | 0.125                               | 88%        |
| 4            | 0.0625                              | >90%       |
| 5            | 0.03125                             | >95%       |
| 6            | 0.015625                            | >95%       |
| 7            | 0.0078125                           | >99%       |

Opportunistic observations of other wildlife were recorded throughout the field survey component.



### 3 Results

#### 3.1 Vegetation

Field survey was undertaken over 21<sup>st</sup> – 23<sup>rd</sup> November, 2017 during which time twenty-five field sites were assessed, the distribution of which is illustrated in Figure 2. Permission to survey lands associated with the Mallaty Creek Corridor in the south of our study area was not forthcoming, the implications of which are discussed elsewhere in this report.

Collectively, at least 16 tree species were recorded in the tallest-stratum vegetation, including 3 species of *Angophora* (narrow-leaved apple *A. bakeri*, rough-barked apple *A. floribunda* and Sydney red gum *A. costata*) and at least two species of Ironbark (narrow-leaved Ironbark *E. crebra* and broad-leaved Ironbark *E. fibrosa*). Grey box and forest red gum were the most commonly recorded species with one or both being represented in 80% (20/25) of the sampled field sites.

Schedule 2 of SEPP 44 lists forest red gum and grey gum as feed tree species for koalas. Discounting the importance of grey box as a PKFT<sup>3</sup>, the percentage equivalent proportional representation of forest red gum and grey gum within the vegetation communities sampled by the field survey was 43% ± 4.61% (SE), thus readily qualifying the SLAs as *Potential Koala Habitat* for the purposes of SEPP 44.

#### 3.2 Habitat Utilisation by koalas

Evidence of koalas in the form of diagnostic faecal pellets was recorded at 12 of the 25 sampled field sites. The data confirmed that koalas were present in each of the SLAs that we were able to access, as well as in the Nepean & Georges Rivers riparian landscapes to the west and east respectively (Figure 2). Across the study area these data further enable an overall habitat occupancy estimate for koalas of 48.0% ± 0.1% (SE) of the available habitat. Koala faecal pellets were equally associated with each of the 3 designated PKFTs being targeted (Section 2.2 refers). These outcomes confirm both optimal occupancy rates by koalas within the area subject to sampling and connectivity between koala populations occupying the Nepean and Georges River catchments. Appendix 1 provides a summary of the field survey data.

The median number of PKFTs sampled in sites where koala faecal pellets were NOT recorded was 7 (range 6 – 11), thus affording a high measure of confidence (> 99%) that koalas were not utilizing habitat in these areas (Table 1 refers). Areas without pellets were

<sup>3</sup> This species is a PKFT but not currently listed on Schedule 2 of SEPP 44.

more common towards the north-western corner of the study area near the junction of the Woodhouse – Menangle and Nepean Creek SLAs, where eutrophication arising from a waste water management program appears to have resulted in extensive areas of Eucalyptus dieback. Species most affected by eutrophication include PKFTs of the sub-Genus *Symphomyrtus* which includes forest red gum, grey gum, and grey box (Figures 2 & 3).



**Figure 2.** Location of 25 field sites used to assess koala occupancy and habitat across the study area. Orange shading represents vegetation cover; blue asterisks represent sites where evidence of koalas was recorded, red asterisks represent where sites where no evidence of habitat used by koalas was detected. The approximate extent of Eucalypt dieback arising from the eutrophication referred to in 3.2 is illustrated by a red line.



**Figure 3.** Dieback of *Eucalyptus* spp. in riparian zones associated with the junction of the Woodhouse – Menangle and Nepean Creek corridors.

### 3.3 Opportunistic fauna observations

Foxes were observed on numerous occasions, as well as evidence of denning activity in several locations within the SLA / bushland areas that were assessed. Other native species were also recorded, including 4 – 5 species of Macropod: wallaroo *Macropus robustus*, grey kangaroo *M. giganteus*, red-necked and swamp wallabies (*Macropus rufogriseus* and *Wallabia bicolor* respectively), Brush-tailed Rock Wallaby<sup>4</sup> *Petrogale penicillata*, echidnas *Tachyglossus aculeatus* and wombats *Wombatus ursinus*. Scats of brush-tail possums *Trichosurus vulpecula* were also observed in several field sites, as was evidence (pock marks on bark) typically indicative of glider (*Petaurus* spp<sup>5</sup>.) use. Amongst the more interesting birds observed were dusky woodswallow<sup>6</sup> *Artamus cyanopterus*, varied sittella *Daphoenositta chrysoptera* and beautiful firetail *Stagonopleura bella*.

<sup>4</sup> Tentative sighting only – brief glimpse of a small macropod ascending a near-vertical rock face @ Easting: 294478; Northing 6221118 (GDA94)

<sup>5</sup> We suspect Squirrel Glider *P. norfolkensis* based on absence of a complex understory.

<sup>6</sup> General area for this species and Varied Sittella defined as within a 50 m radius of Easting 293695; Northing 6219678 (GDA 94)

#### 4 Discussion

This study examined matters relating to habitat utilisation by koalas in a key area of the CCC LGA. A paucity of historical records in the study area has meant koala issues in this particular area have tended to be overlooked and/or under-estimated; hence the outcomes described herein are important in terms of their potential to further inform and guide planning decisions relating to any future development. *De facto*, the results further attest to the ongoing recovery and associated range expansion of koalas in the CCC LGA. The key results and implications of the study are explored in more detail in the sections that follow.

During the study, we were denied permission to sample habitat in the Mallaty Creek Corridor. While this is unfortunate, we remain confident that results from the overall survey can be broadly extrapolated into this area. Most importantly this extrapolation relates to the suitability of linear / riparian vegetation as areas of PKH and that the presence of koalas therein will be at a occupancy level commensurate with the 48% estimated for areas to the north, especially given the evidence of koala activity we recorded in close proximity to lands traversed by the Mallaty Creek Corridor.

##### 4.1 Preferred (Potential) Koala habitat (PKH)

PKH as defined by both SEPP 44 and the Draft Campbelltown CKPoM is widespread and comprises the greater proportion of all sampled SLAs. Moreover, densities of large size-class PKFTs are also high, averaging more than 40% of the tallest stratum species across the area covered by the survey program. In combination with high koala occupancy rates discussed in more detail below, this outcome confirms the importance of these SLAs for koalas and provides Council with the knowledge to minimise further losses to PKFTs in these areas through appropriate planning measures.

##### 4.2 Eucalypt dieback

The issue of eucalypt dieback in the north of the study area is not a trivial matter; impacts are substantive and widespread around the junction of the Woodhouse – Menangle and Nepaan Creeks where treated effluent (presumed) is discharged by mechanised boom sprays across a series of 5 - 6 relatively large (20 ha) circular areas. While the frequency of watering and resting of these areas is unknown to us, it is inarguable that the cumulative impacts over time on these 2<sup>nd</sup> order stream networks have had a significant ecological impact on native vegetation and constituent PKFTs.

The extent of dieback and associated impacts we observed implies the need for an urgent intervention that must include review of current practices and standards, a minimum

outcome from which should be a reduced radial spray area so as to increase the buffer to adjoining riparian areas. While we have undertaken a cursory review of the literature in an attempt to proffer some advice on this matter, there does not appear to be a unanimous standard that effectively relates to the soil landscape in question. Given the extent of ecological damage, we are thus obliged to advocate for a minimum buffer distance of 65 m from top of bank on either side given that buffers of this size will likely avoid short-term negative impacts on macro-invertebrate communities (Culp and Davies 1983; Davies and Nelson 1994); however, given the coarse and highly porous nature of the soil landscape in the study area it is possible that even larger buffers may be needed to effectively protect water quality.

We cannot stress the importance of urgent remedial action on this issue which also has implications for the longer-term management of riparian corridors / habitat linkages in the context of immediately adjoining areas of envisioned residential development where the threat of eutrophication from concentrated urban run-off similarly mandates the need for large(r) buffer areas than might otherwise be contemplated or proposed. Given the need for a precautionary approach, such considerations imply that a minimum overall width of ~ 200 m (i.e. 100 m either side of central drainage line) will likely be the minimum necessary to secure ecological integrity where 2<sup>nd</sup> order drainage lines form the basis of SLAs in the MGPGA.

#### 4.3 Koala occupancy and corridor use

The extent of habitat use by koalas recorded by this survey was higher and more extensive than we anticipated. Indeed, in any area containing suitable PKH, we regard 50% occupancy as optimal benchmark for sustainable koala management. Thus the SLAs and associated habitat areas are already sustaining resident koala populations, are Core Koala Habitat for planning purposes and are clearly important in terms of assisting ongoing recovery of the Campbelltown koalas. Occupancy by koalas of these key areas also function to afford some resilience to the population by being strategically located to the west of Appin Road and so being capable of facilitating recovery following a future catastrophic fire event in habitat areas to the east.

Results also confirm – perhaps for the first time - that the Campbelltown and Nepean koala populations are in contact. This is a positive outcome which additionally enhances longer-term resilience of both populations by potentially increasing genetic diversity. In this context the merit of maintaining and/or optimising the current SLA configuration is laudable, as is the need to ensure that connectivity measures that enable this connection to be maintained are



neither severed nor further compromised by poorly informed planning proposals. Minimum standards for the design of SLAs / corridors in this low carrying capacity landscape are discussed in more detail below.

#### 4.4 Appin Road Upgrade

Commensurate with a progressively recovering / expanding koala population, Appin Road is the subject of increasing numbers of vehicle-strikes resulting in injury to or death of koalas. We understand that planning to upgrade Appin Road from 2 to 6 vehicle lanes has commenced, as have preliminary discussion regarding the likely need to service wildlife movement / mitigate against ongoing vehicle-strike, in which context it has been suggested that connectivity should be truncated and would be best maintained in the south (*i.e.* past the township of Appin). Such an outcome would likely be realised by installing fauna exclusion fencing on the eastern side of Appin Road for approximately 8 km extending from urban areas in South Campbelltown to the township of Appin. This current proposed mitigation assumes habitat in the study area is NOT important for maintaining koala connectivity and/or does not support suitable habitat. This assumption is clearly repudiated by the results of this study, which has confirmed that these SLAs are important for koalas and other wildlife in the CCC LGA. The key outcomes that support this conclusion are:

- i. The presence of a substantive area of Generational Persistence / Core Koala Habitat associated with the Wedderburn KMP, the western extent of which abuts and (now) extends across Appin Road in some areas; hence forecasting a strong likelihood of ongoing population expansion and use of PKH in this area.
- ii. High quality PKH is present to the west of Appin Road where vegetated SLAs, increasing numbers of koala sightings and vehicle- strike records are predominately located.
- iii. Koala occupancy within SLAs to the west of Appin Road is at near optimum levels, with high quality PKH available throughout the study area.

Given the field-based evidence, it is clear that any upgrade to Appin Road in the area south from the current southern limits of residential development at Campbelltown should ideally aim to both minimize the potential for vehicle strike, but also ensure that east-west connectivity for koalas is maintained, rather than truncated. This is important because this area provides linkages connecting the currently known southwesterly extent of koala distribution in the Georges River catchment with those inhabiting the Nepean River Catchment. Moreover, the preservation and consolidated connectivity of these SLAs represents one of the last opportunities to establish viable connectivity between

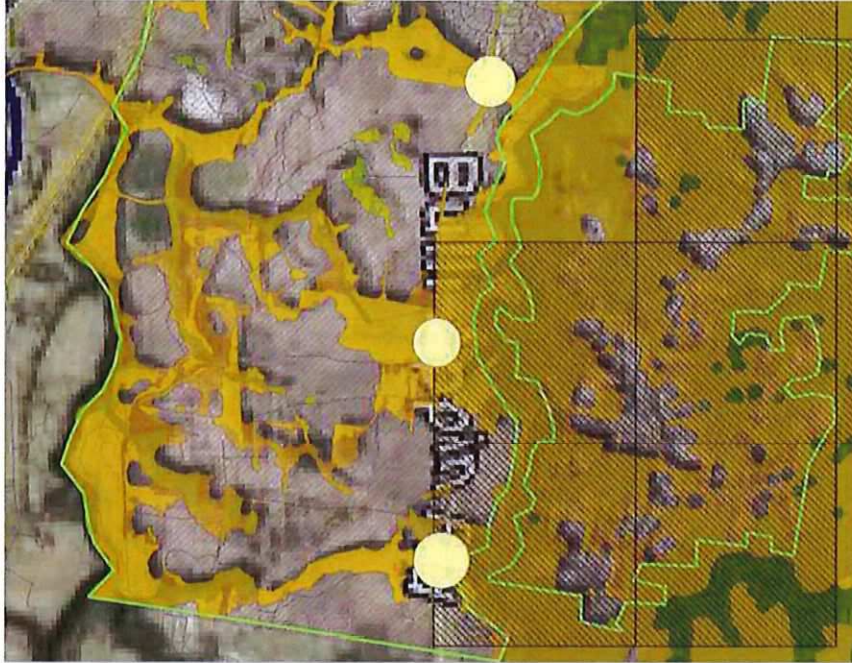
Campbelltown koalas with larger habitat areas such as the Nattai National Park to the southwest.

For the most part, the current alignment of Appin road within the CCC LGA traverses a ridgeline, which minimizes opportunities for any future road upgrade to incorporate underpass structures as a means of accommodating the movement of koalas and other wildlife. Contingent upon a consolidation of the SLA network so as to offer a guarantee of long-term ecological integrity (see below), we thus perceive the minimum requirements to minimise potential for vehicle-strike along that section of Appin Road within the CCC LGA to include:

- a) A minimum of three fauna overpasses strategically located between the southern limits of residential development at Campbelltown and the northern limit of residential development at Appin (Figure 4)
- b) Reinforcement of overpass utility by use of wildlife exclusion fencing along both sides of Appin Road between the southern limits of residential development at Campbelltown and the northern limit of residential development at Appin, and
- c) The installation of koala-grids on all residual driveways and road intersections entering the area of the Appin Road upgrade.

Precedents and monitoring data from a numbers of studies are available to support application and efficacy of each of the three preceding mitigation measures. However, their implementation remains contingent upon consolidation of the SLAs so as to provide justification for any associated expenditure.

The management needs of koalas in low carrying capacity landscapes are more complex relative to those in higher carrying capacity habitats wherein small home range areas enable finer measures of resource partitioning. Koalas in the CCC LGA and adjoining landscapes spend more time on the ground to access their preferred food tree species, the palatability of which is influenced by ontogenetic and edaphic considerations. Commensurate with the low-carrying capacity landscape and based on a median female koala home range size of 36 ha, Biolink (2016) calculated the need for a 425 m buffer to effectively accommodate occupancy considerations in areas adjoining cells with evidence of generational persistence. Given considerations of spatial flexibility, it follows that any corridor / linkage area dedicated to the task of accommodating koala movement across this low carrying capacity landscape should ideally approximate the 425 m measure in terms of defining an optimal width.



**Figure 4** Recommended location of fauna overpass infrastructure along Appin Road.

#### 4.5 Conclusions

Field assessment has confirmed utility by koalas of habitat in the south Campbelltown area and the active utilisation of SLAs currently linking the Nepean and Georges River catchments.

The aforementioned SLAs sustain high-quality PKH with high densities of PKFTs.

Eutrophication appears to be resulting in extensive dieback of PKFTs in the north-west of the study area in the general area of the junction of the Woodhouse – Menangle and Nepean Creeks.

The threat of further eutrophication impacts elsewhere in the study area arises from envisaged development outcomes, which historically will strive to optimise development outcomes (yield) at the expense of environmental considerations.

The proposed upgrading of Appin Road between Campbelltown and Appin will require extensive vehicle-strike mitigation measures including provision for a minimum of 3



Biolink

South Campbelltown Koala Connectivity Study

dedicated fauna overpasses and supporting infrastructure in order to accommodate the movement of koalas and other wildlife.

*Recommendations*

1. In order to provide certainty for future planning purposes and a consolidated future for the Campbelltown koalas, Council should seek support from the NSW Department of Planning & Environment such that future planning for the GMPGA proceeds on the basis of at least three east-west SLAs, the minimum widths of which should range from 200 m - 425 m. To most effectively accommodate koalas, at least one of the three corridors should be designed specifically for the species by planning to ensure an optimal average width of 425 m is achieved<sup>7</sup>.
2. Council should initiate further investigations into the issue of eutrophication and associated Eucalypt dieback in the general area of the junction of the Woodhouse – Menangle and Nepean Creek SLAs. This is not just an ecological issue given the location of this event within the GMPGA and the health risks that may arise given increased levels of public access as a consequence of any future development.

---

<sup>7</sup> This may require further analyses/consideration in order to identify optimum configuration.

**References**

Culp, J.M. and Davies, R.W. 1983. *An assessment of the effect of streambank clearcutting on macroinvertebrate communities in a managed watershed. Canadian Technical Report of Fisheries and Aquatic Sciences No. 1208.*

Davies, P.E. and Nelson, M. 1994. Relationship between riparian buffer widths and the effects of logging on stream habitat, invertebrate community composition and fish abundance. *Journal of Marine and Freshwater Research* 45: 1289-1305.

Phillips, S. and Callaghan, J. 2000. Tree species preferences of koalas (*Phascolarctos cinereus*) in the Campbelltown area southwest of Sydney, New South Wales. *Wildlife Research* 27:509-16

Phillips, S., Chang, M., and Kordas, G. 2013. *Vegetation of the Port Macquarie Hastings Local Government Area* Version 1.08. Report to Port Macquarie Hastings Council. Biolink Ecological Consultants, Uki. NSW.

Phillips, S. 2016. Draft *Campbelltown Comprehensive Koala Plan of Management*. Prepared by Biolink for Campbelltown City Council.

Phillips, S. and Callaghan, J. 2011. The spot assessment technique: a tool for determining localized levels of habitat use by koalas *Phascolarctos cinereus*. *Australian Zoologist* 35: 774-780.

Phillips, S., and Wallis, K. 2016. *Koala Likelihood Mapping - Baseline Koala Survey Analysis and Reporting*. Final Report to NSW Environment Protection Authority. Biolink Ecological Consultants.

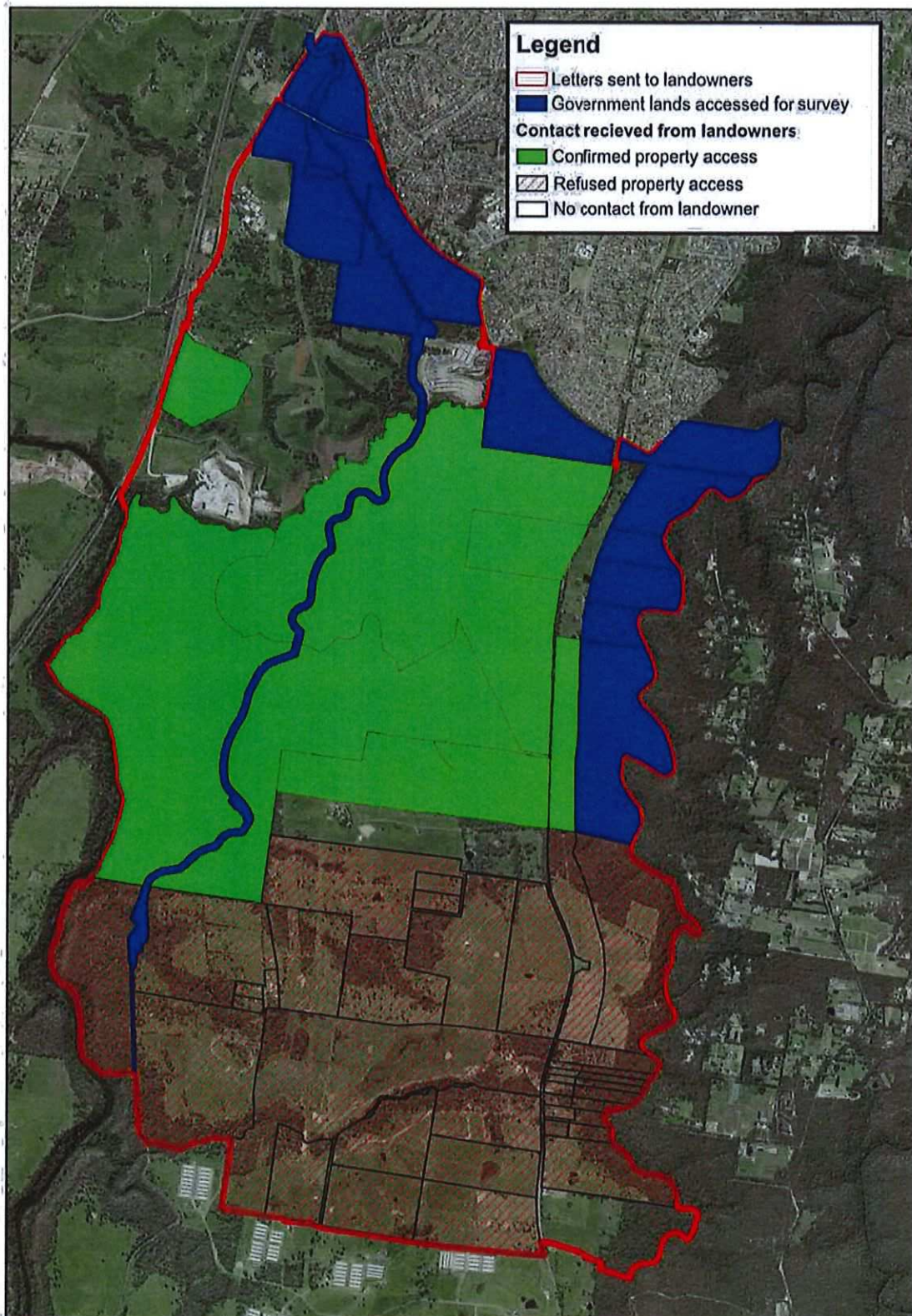
Ward, S., Failes, B., and Woodgate, S. 2013. *Campbelltown City Council Resource Document: Vegetation Analysis*. Draft Campbelltown Comprehensive Koala Plan of Management. Prepared by Eco Logical Australia.

## Appendix 1

Site coordinates and details relating to presence (✓)/absence (×) of koala faecal pellets at each of the 25 sampled sites. 'No. PKFTs' corresponds to the number of Preferred Koala Food Trees sampled to determine presence/absence at a given site. 'PKFT' refers to the Preferred Koala Food Tree species recorded at each site. 'Corridor' represents corridor where site was located. If more than one corridor is listed = site is located within or between listed corridors.

| Site No | Easting | Northing | Faecal pellet | No. PKFTs | PKFT                          | Corridor |
|---------|---------|----------|---------------|-----------|-------------------------------|----------|
| 1       | 296069  | 6222819  | ✓             | 5         | <i>E. mol</i>                 | MC       |
| 2       | 296720  | 6222561  | ×             | 8         | <i>E. ter</i>                 | MC       |
| 3       | 296382  | 6222717  | ×             | 7         | <i>E. mol, E. ter</i>         | MC       |
| 4       | 296162  | 6223098  | ✓             | 1         | <i>E. mol</i>                 | MC       |
| 5       | 294613  | 6220940  | ✓             | 1         | <i>E. pun</i>                 | WMC      |
| 6       | 294944  | 6220413  | ✓             | 1         | <i>E. ter</i>                 | WMC      |
| 7       | 295562  | 6220168  | ×             | 7         | <i>E. mol, E. pun, E. ter</i> | WMC      |
| 8       | 296154  | 6220273  | ✓             | 1         | <i>E. pun</i>                 | WMC      |
| 9       | 296428  | 6219516  | ✓             | 1         | <i>E. mol</i>                 | NC / WMC |
| 10      | 295303  | 6220678  | ×             | 6         | <i>E. pun</i>                 | WMC      |
| 11      | 295021  | 6221213  | ✓             | 5         | <i>E. pun</i>                 | WMC      |
| 12      | 295941  | 6222071  | ✓             | 1         | <i>E. ter</i>                 | MC / WMC |
| 13      | 293694  | 6220499  | ×             | 7         | <i>E. pun</i>                 | WMC      |
| 14      | 293724  | 6221157  | ×             | 6         | <i>E. pun</i>                 | WMC      |
| 15      | 294250  | 6220336  | ×             | 9         | <i>E. ter</i>                 | WMC      |
| 16      | 293652  | 6221824  | ×             | 6         | <i>E. pun</i>                 | MC / WMC |
| 17      | 293650  | 6220358  | ×             | 10        | <i>E. mol, E. pun, E. ter</i> | WMC      |
| 18      | 293857  | 6219778  | ✓             | 1         | <i>E. ter</i>                 | NC       |
| 19      | 293415  | 6219645  | ✓             | 1         | <i>E. pun</i>                 | NRC / NC |
| 20      | 292749  | 6220977  | ✓             | 1         | <i>E. ter</i>                 | NRC      |
| 21      | 293229  | 6220158  | ×             | 7         | <i>E. pun</i>                 | NRC      |
| 22      | 293041  | 6220585  | ✓             | 1         | <i>E. ter</i>                 | NRC      |
| 23      | 294788  | 6222429  | ×             | 8         | <i>E. mol, E. ter</i>         | MC       |
| 24      | 295083  | 6224604  | ×             | 10        | <i>E. mol</i>                 | MC       |
| 25      | 295452  | 6223235  | ×             | 11        | <i>E. mol, E. ter</i>         | MC       |

Abbreviations used for PKFTs and corridors in the table are as follows: *E. mol* = *E. moluccana*; *E. pun* = *E. punctata*; *E. ter* = *E. tereticornis*; MC = Menangle Creek; WMC = Woodhouse/ Menangle Creek; NC = Nepean Creek; NRC = Nepean River Corridor.







## 8.4 Proposed Natural Assets Corridors

### Reporting Officer

Executive Manager Urban Renewal  
City Development

### Community Strategic Plan

| Objective  | Strategy  |
|--|---|
| 2 Outcome Two: A Respected and Protected Natural Environment | 2.5 - Plan for and ensure that development in our city is sustainable and resilient |

### Officer's Recommendation

1. That Council endorse, in relation to South Campbelltown, the draft natural asset corridor maps and principles provided in attachment 1 and 2 for:
  - a. submission to the Department of Planning and Environment to inform the strategic biocertification process; and
  - b. continued engagement with key landholders and government authorities involved in developing plans for the area.
2. That a further report be presented to Council in relation to a draft Campbelltown Biodiversity Conservation Plan for public exhibition purposes, including an update of the status of the draft Western Sydney Priority Growth Areas, Strategic Biocertification Plan.

### Purpose

The purpose of this report is to outline a draft strategy in respect of natural asset corridors in the Mount Gilead (South Campbelltown) proposed urban release area.

### History

The planning environment for South Campbelltown is rapidly evolving and requires strategic input from Council. An important contributory element to the creation of new sustainable communities will be natural asset corridors.

The progression of detailed masterplanning for South Campbelltown requires that Council formalise a position in relation to the establishment of a natural assets conservation framework for the area. A position is required due to:

- the Department of Planning and Environment (DP&E) advancing the preliminary findings contained in the foundation planning document The Greater Macarthur Land Release Investigation – Preliminary Strategy and Action Plan

- the DP&E seeking to finalise biocertification of the recently rezoned first stage of the Mount Gilead urban release area
- the DP&E and Office of Environment and Heritage (OEH) pursuit of regional biocertification initiatives
- the principal landholder stakeholder interest groups (the Mir Group led Gilead Landowners Group and Lend Lease) pursuit of masterplanning and compilation of planning proposals (rezoning applications) for lodgement
- community environmental advocates and recognised environmental interest groups lobbying for local and regional biodiversity outcomes
- the Roads and Maritime Services (RMS) preparation of plans and environmental assessments for the upgrade of Appin Road.

With this in mind, it is considered pertinent that Council formalise a position on natural asset corridors in the South Campbelltown precinct to inform ongoing consultation with agencies and key stakeholders.

## Report

Council has long held a position of commitment to environmental conservation outcomes, notwithstanding the past and proposed urbanisation of large parts of the Local Government Area (LGA).

This commitment has recently been further reinforced through consultation and subsequent adoption of the Campbelltown Community Strategic Plan – Campbelltown 2027 (CSP). The CSP has a strong natural environment underpinning reflected principally in Outcome 2 – ‘a respected and protected natural environment’.

Strategies attached to the subject natural environment outcome include, amongst others:

- 2.1 Implement and advocate for initiatives that conserve the City’s natural environment.
- 2.4 Conserve and care for our City’s biodiversity.
- 2.5 Plan for and ensure that development in our city is sustainable and resilient.

It is also noted that some of the other CSP outcomes leverage off the city’s environmental attributes, including Outcome 4 – a successful city and in particular:

- 4.3 Responsibly manage growth and development, with respect to the environment, heritage and character of our city.

### 1. **Draft Campbelltown Biodiversity Conservation Plan and Natural Asset Corridors**

Council recently considered a presentation on the draft Campbelltown Biodiversity Conservation Plan at a briefing held on 15 August 2017. The plan is being further revised in response to initial feedback.

A central feature of the draft plan is the establishment of natural asset corridors focused on the conservation of high quality habitat and waterways and the movement of wildlife through the area.

A series of natural asset corridors were highlighted, inclusive of the Mount Gilead (South Campbelltown) Precinct.

## **2. Procurement and Management of Natural Asset Corridors**

Some elements of the proposed corridors are in private ownership as biobank sites (e.g. Beulah) or will be in the future, and will remain in private ownership and be maintained in accordance with the corresponding agreement and management action plans.

Other elements, particularly the higher order riparian aligned corridors (primary corridors), would be rehabilitated to a maintainable standard as a condition of subdivision approval and dedicated to Council for ongoing care, control and management. If these sites are designated to be stewardship sites (new terminology for biobanking) there would be funding made available through the stewardship program for the in-perpetuity management of these areas. Should they not be eligible for stewardship classification and associated funding, Council would be responsible for their acquisition and care, control and management.

It is generally assumed that as a minimum, their dedication in a rehabilitated form (maintainable standard) would be achievable through the Voluntary Planning Agreement process. Council may have an ongoing maintenance responsibility in these circumstances.

Lower order riparian aligned corridors (secondary corridors) are important at the local landscape scale and may not be funded via the stewardship program. It is anticipated that they would generally be required to be procured via the Voluntary Planning Agreement process which may require Council to assume an ongoing maintenance role. In this regard, the determination of areas as stewardship sites would most likely occur through the Strategic Biocertification process currently being pursued by the Department of Planning.

Some corridors could also remain in private ownership and be managed via a community title subdivision, an example being Harrington Forest in Harrington Grove (Camden LGA) at the discretion of the developer.

It should be noted that any budgetary shortfall for ongoing maintenance may potentially be addressed via extraordinary grants, bushcare programs and the like.

## **3. Role and function of Natural Asset Corridors**

The principal objectives of establishing natural asset corridors in proposed urban release areas such as Mount Gilead (South Campbelltown) include:

- creation of new sustainable masterplanned suburbs/communities with a substantial natural systems underpinning
- conservation of threatened and endemic flora and fauna
- maintenance of ecosystem services including water and air filtration and pollination
- movement opportunities for fauna (including between the Nepean and Georges River)
- management of urban heat island effect
- setting for some passive/sensitive recreational uses
- means of creating a sense of place/sense of community
- context for lifestyle housing.



The benefits of these corridors cover a suite of social, environmental and economic issues and have the potential to facilitate a unique and liveable community in this precinct.

#### **4. Location and qualities of Proposed Corridors**

It is important to establish several levels of corridor. The higher order corridors (primary), which perform a sub-regional function, focus on the Nepean River and the Georges River and their linkage. The future means of controlling/facilitating wildlife crossing of Appin Road is the subject of on-going consultation with the relevant authorities.

The lower order corridors (secondary) provide movement pathways at a local landscape level.

Corridors should not merely focus on the extent of existing vegetation. They should also provide for embellishment where natural corridor narrowing may be otherwise evidenced to provide adequate habitat and protection from urban impacts such as noise and light. Wider corridors provide for greater species diversity, have less impacts from adjoining land uses and associated edge effects (i.e. weed invasion and predators) and can provide habitat in their own right.

Australian research on edge effects (Goldingay and Whelan 1997; Clarke and Oldmand 2007) indicate that edge effects extend 150-200m from the edge, so corridors may need to be greater than 350m wide to have even a small amount of habitat not impacted by edge effects. In recognition of this Doeer et al. 2010 suggest that 350m may be the true required width of corridors.

Council officers have undertaken extensive analysis of the flora and fauna within the South Campbelltown Precinct and have delineated appropriate proposed corridors as illustrated in in attachment 1.

Where possible, the minimum width for primary corridors has been defined of at least 350m. However, concessions have been made where vegetation is in either poor condition or other constraints are present. Secondary corridors have been mapped at a smaller width in recognition of their lesser role as largely movement pathways.

In addition, draft Natural Asset Corridor Principles have been drafted to guide future planning and development within the South Campbelltown precinct which are detailed in attachment 2.

#### **5. Achieving balanced planning outcomes**

The formulation of the proposed corridors has sought to ensure there is a reasonable balance between conservation and development opportunities.

To ensure significant and sustainable corridors, Council's strategy should facilitate reasonable development outcomes with requisite supporting infrastructure and commensurate Greenfield development densities.

Any increase in residential densities must, however, be accompanied by relevant alternative transport means and champion high amenity.

## 6. Engagement/Consultation

Due to the imminent timing of actions summarised in the history section of this report, there is limited opportunity to undertake extensive community and development industry consultation in respect of corridor preservation. The proposed strategy should inform immediate dialogue with the DP&E and OEH in respect of Biodiversity Certification and developer led masterplanning initiatives.

When the draft Campbelltown Biodiversity Conservation Plan is finalised, an extensive engagement/consultation exercise will be undertaken. Until this time, it is considered that the proposed natural asset corridors are consistent with the community views reflected in the CSP and articulated by local environmental advocates.

Additionally, the development industry should note, at a broad level, projected development yields are likely to be achievable at densities of up to 25 dwellings per hectare.

## 7. Way forward

To facilitate engagement on this issue, a position of Council is required with respect to Natural Asset Corridors for the Mount Gilead (South Campbelltown) locality given the immediate need to:

- engage with the DP&E and OEH in respect of regional level Biocertification initiatives
- enter into masterplanning discussions with the principal Mount Gilead developer/development syndicates.

Upon securing an outcome with the above agencies, a draft Campbelltown Biodiversity Conservation Plan would be finalised and presented to Council seeking a resolution to proceed to public exhibition. The policy would include but not be limited to, proposed final maps and principles for corridor delivery and preservation.

## Conclusion

The importance of natural asset corridors in the creation of sustainable and resilient urban communities for the Mount Gilead (South Campbelltown) Precinct is a key community issue.

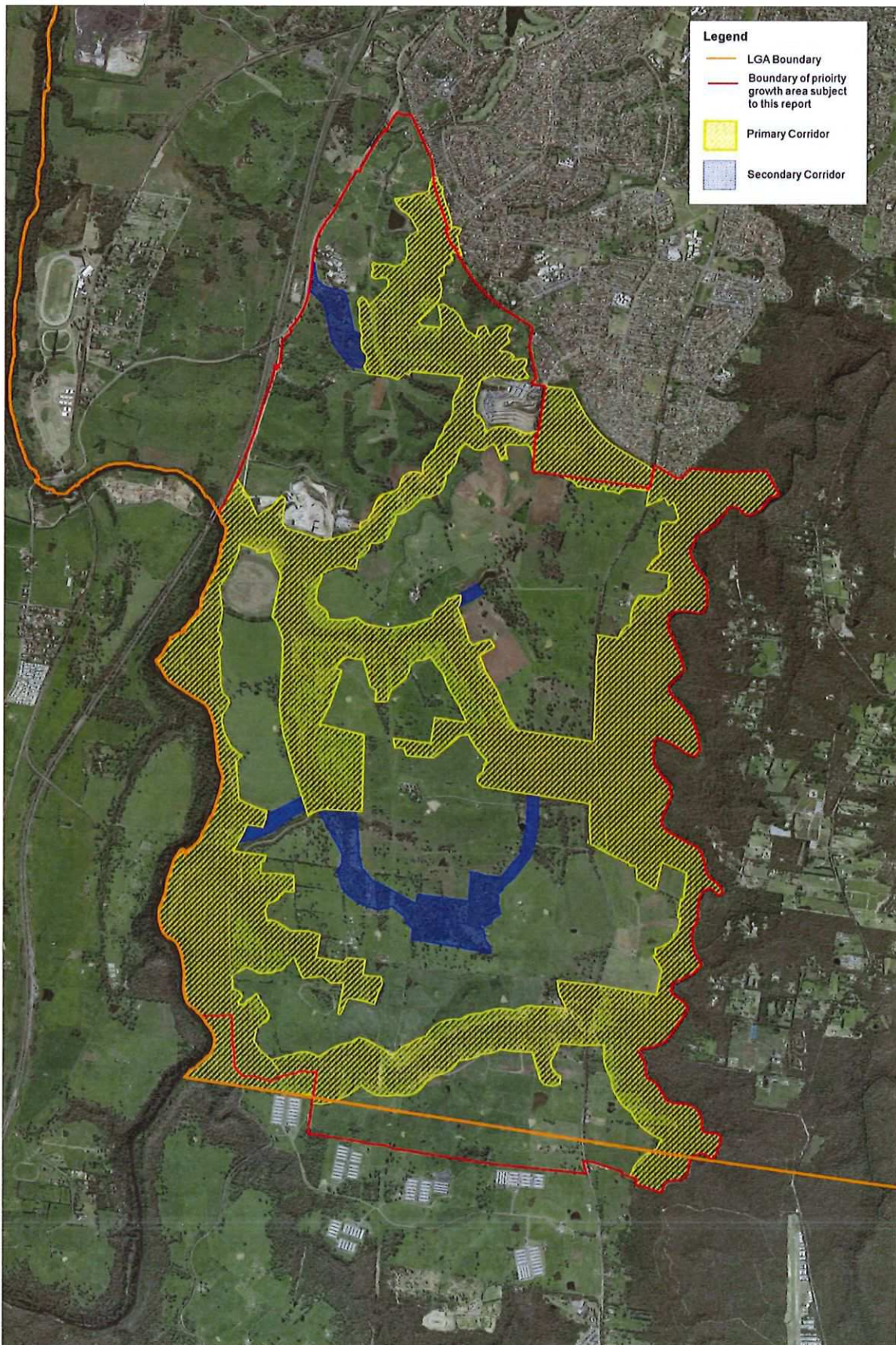
The proposed corridors appear to be economically achievable.

Further, they are considered to be consistent with projected new dwelling yields, be it at slightly increased densities.

Therefore, it is recommended that Council endorse the draft natural asset corridor maps and principles provided in attachments 1 and 2 for the purpose of engaging with the key agencies and landholders to inform the NSW Government's strategic biocertification process, planning for South Campbelltown and finalisation of a draft Campbelltown Biodiversity Conservation Plan.

## Attachments

1. Corridor Map (contained within this report)
2. Natural Asset corridor Principles (contained within this report)



**NATURAL ASSET CORRIDOR PRINCIPLES**

*Principle 1 – Existing native vegetation along identified corridors should be retained*

*Principle 2 – The design of the corridor network should be consistent with corridor design principles (i.e. to meet the ecological and spatial requirements of priority endemic species).*

*Principle 3 – Infrastructure and Asset Protection Zones should be located outside of identified primary habitat corridors and largely restricted within secondary corridors within the development footprint.*

*Principle 4 – A sensitive urban interface should be provided in areas adjacent to primary habitat corridors and other areas being managed for conservation purposes*

*Principle 5 - Permissible activities within primary and secondary corridors should not have an adverse impact on the biodiversity and cultural heritage values of habitat corridors and where possible should be complementary to biodiversity conservation*

*Principle 6 – Rezoning proposals and associated future development should be consistent with relevant threatened species Management Plans and Guidelines*

*Principle 7 – Existing and any future barriers to fauna movement within identified corridors should be appropriately addressed to facilitate the safe movement of fauna*

*Principle 8 – The ongoing management of natural corridors should be appropriately funded*

*Principle 9 - Conservation areas that will generate conservation stewardship credits (biodiversity) credits should be zoned E2 - environmental conservation*

*Principle 10 – Any conservation lands proposed for dedication to Council should be consistent with any Council Land Dedication Policy*

*Principle 11 – Ongoing monitoring of threatened biodiversity should be undertaken prior to, during and after development.*



