**ATTACHMENT B: CUMBERLAND ECOLOGY BIODIVERSITY RESPONSE**

13 April 2021

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**St Marys Regional Detention Basin I – Addendum to a SIS in Relation to DA19/0811**

Dear Dael

The purpose of this letter is to respond to Penrith City Council's (Council's) Request for Information (RFI) in relation to a development application (DA) for vegetation removal and construction of Regional Detention Basin I (DA19/0811) on the St Marys Development Site (SMDS). The RFI letter provided by Council (dated 20 April 2020) has followed the review of the DA submitted for Basin I in 2019.

Lendlease is currently finalising a detailed formal response to Council's latest RFI's, including further details in relation to the use of existing access roads as haul roads during construction.

Impacts to threatened species, populations and ecological communities, as listed under the NSW *Threatened Species Conservation Act 1995*, as result of the proposed development, have been assessed under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) through the preparation of a Species Impact Statement (SIS)prepared by Cumberland Ecology (Cumberland Ecology 2019). This SIS has been reviewed by Council, who have sought further information as detailed in the RFIs.

Cumberland Ecology provided a preliminary response to Council's RFI (17209 Let10, dated 12 June 2020) in relation to biodiversity, and recommended that an addendum to the SIS be prepared. Council provided an informal response to the preliminary response to the RFI (emails dated 6 November 2020 and 14 December 2020), requesting further flora and fauna surveys, and details in relation to the haul road use.

In order to respond to Council's RFI and additional comments, Cumberland Ecology has conducted supplementary flora and fauna surveys, as requested by Council. An Addendum to the SIS report has been prepared, as included in **Appendix A** to this letter.

This addendum incorporates the latest engineering plans and identifies all activities required from an ecological standpoint. This was compiled to ensure all biodiversity

impacts with DA19/0811 are properly considered. This includes impacts arising from the construction of the haul road as well as those tied to Council's requirements to have ongoing access to Basin I for maintenance purposes.

No additional threatened species or endangered ecological communities were recorded during the supplementary surveys. The findings of the Addendum to the SIS indicate that impacts to biodiversity are of the same scale as identified in the SIS. No significant impacts in terms of the EP&A Act are expected to occur, and no further amendments to the SIS are required.

If you have any questions in relation to this Addendum to the SIS, please don't hesitate to contact me by email.

Yours sincerely,

Vanessa Orsborn
Senior Project Manager/Ecologist
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# APPENDIX A :
## Addendum to SIS

# A.1. Introduction

Cumberland Ecology was requested by Lendlease to provide an addendum to a Species Impact Statement (SIS) to respond to Penrith City Council's (Council's) Request for Information (RFI) in relation to a development application (DA) for vegetation removal and construction of Regional Detention Basin I (DA19/0811) on the St Marys Development Site (SMDS). The RFI letter provided by Council (dated 20 April 2020) has followed the review of the DA submitted for Regional Detention Basin I in 2019 (see ***Section A.1.1***).

## A.1.1. Background

Development of the SMDS has progressed over the past 20 years in accordance with St Marys Regional Environmental Plan – 30 (SREP 30). As detailed in Section 1.4 of the SIS (Cumberland Ecology 2019) this planning framework has resulted in the delineation of development 'Precincts' and a large Regional Park (now the Wianamatta Regional Park), which is being progressively transferred to the National Parks and Wildlife Service (NPWS) division of the Department of Planning, Industry and Environment (DPIE). The development of the SMDS has involved the preparation of 'Precinct Plans', including a suite of management plan for each Precinct, and also for the Regional Park. The Precinct Plans and each management plan has been prepared in consultation with key stakeholders, including NPWS and Council, and therefore, the SIS refers to these such plans for the implementation of appropriate mitigation measures. That notwithstanding, Council have suggested additional measures to mitigate the impacts of the current DA. The measures suggested by Council are in-line with current accepted practices and given that the Precinct Plan for the Western Precinct was submitted in 2009, updated protocols are considered appropriate.

## A.1.2. Current DA

Impacts to threatened species, populations and ecological communities, as listed under the NSW *Threatened Species Conservation Act 1995* (repealed), as result of the proposed development, have been assessed under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) with preparation of a SIS (Cumberland Ecology 2019) assessing biodiversity impacts as a result of development of Basin I. The SIS prepared by Cumberland Ecology (2019) assessed impacts to biodiversity from the construction of Basin I, with a disturbance footprint defined by the 'Drainage' zone, as per the St Marys Regional Environment Plan No. 30 (SREP 30) boundary, and existing access tracks, to be utilised during construction.

Cumberland Ecology provided a preliminary response to Councils RFI (17209 Let9, dated 12 June 2020) in relation to biodiversity, and recommended that an addendum to the SIS be prepared. Council provided an informal response to the preliminary response to the RFI (emails dated 6 November 2020 and 14 December 2020), requesting further details in relation to the haul road use.

### A.1.2.1. Council RFI

The DA for Regional Detention Basin I (DA19/0811) has been reviewed by Council, who have sought further information regarding the following:

> ***Biodiversity***
>
> *The accompanying Species Impact Statement (SIS) was finalised in July 2018, and is noted that the final survey was undertaken on one-day in May 2018. Given this timeframe, the temporal component of the survey*

*effort is inadequate, and the assessment of significance is considered unreliable, particularly given the assessment was based on predominantly historical data. The spatial component of targeted survey effort is also inadequate. For example, neither bird transects nor anabat surveys were undertaken in the subject site. More comprehensive surveys of the subject area are required.*

*Further, the SIS does not make reference to incorporating future management actions in response to the Cumberland Plain Conservation Plan, in development.*

*The proposed measures to mitigate impacts during construction are limited in detail, and require further attention. The following matters shall be addressed:*

- *Pre-clearing mitigation measures. For example, measures to check for threated flora and fauna species on site immediately before clearing begins and measures to relocate any identified species (with appropriate permits). This includes location and relocation of the Cumberland Plain Land Snail. This aspect is particularly relevant given a significant reliance on historical data for the SIS. Survey methodology used may not be adequate for the detection of fauna species that have recently moved into the area, especially in response to development pressures in adjacent areas;*
- *The establishment of exclusion zones to prevent damage to native vegetation and fauna habitats adjacent to the area to be cleared and to prevent the distribution of pests, weeds and disease;*
- *Specific detail relating to the re-use of woody debris and any bush rock;*
- *Mitigation measures relating to the removal of hollow-bearing trees, including mitigating the impact of hollow loss by providing supplementary fauna habitat in the form of nest boxes;*
- *Further, mitigation measures post construction should reference the application of the draft national light pollution guidelines for wildlife, where lighting is installed around the basins or in access routes; and*
- *Chapter 7 of the SIS also refers to a Vegetation Management Plan. The VMP should be reviewed by Council prior to implementation.*

Additional comments in relation to biodiversity from Council (emails dated 6 November 2020 and 14 December 2020) have been provided to Lendlease, as follows:

- *Scope of works needs to be clearly stated in the SIS. Also, noting that the civil plans for 'Basin I' have been amended based on comments from Council's engineer and waterways officer, the SIS shall accurately reflect the proposal as amended.*
- *The SIS assessment was finalised in July 2018 and the last survey, which was undertaken on one day, was in May 2018. Therefore, the temporal component of the survey effort is inadequate, and the assessment of significance may be unreliable, particularly given the assessment was based on predominantly historical data. The spatial component of targeted survey effort is also inadequate. For example, neither bird transects nor anabat surveys were undertaken in the subject site. More comprehensive, in situ, surveys of the subject area are warranted.*

- *Council's vehicles (heavy rigid 25t GVM truck 11-12m in length) will need to have ongoing access to Basin I for maintenance purposes, meaning access route(s) may not be temporary, and the biodiversity assessment should reflect this.*

#### A.1.2.2. Consultation with NPWS

In order to respond to the Council RFI, Lendlease consulted with NPWS in relation to the use of existing access tracks as haul roads for the construction and maintenance of the Regional Detention Basin I. This included a site inspection on 10 March 2021 and subsequent letter confirming the approval requirements, as attached in **Appendix B** to this letter.

## A.2. Amendments to the SIS

This section provides additional details to address the issues raised in the RFI from Council. The existing SIS (Cumberland Ecology, 2019) provides a comprehensive assessment of the impacts on biodiversity as a result of the proposed development of the subject site and should be referred to in conjunction with the additional details presented below in relation to the assessment of the development.

### A.2.1. Description of Works

This section provides an updated description of works.

The development of Regional Detention Basin I involves the following:

- Clearing of vegetation within the subject site;
- Trimming of overhanging vegetation and understorey vegetation at the edges of the existing access tracks;
- Grading of existing access tracks, for use as haul roads (gravel, not sealed) (with a total width of 10m);
- Excavation for the construction of the basins;
- Battering and fill works;
- Lining of the basins, as outlined in the Stormwater Management Plan; and
- Landscaping of the basin edges and batters, in accordance with the Landscape Management Plan

Further details in relation to track use is provided in the Civil Plans and Lendlease's response package to Council's RFI.

### A.2.2. Amendments to the Subject Site

In response to Councils RFI, the clarification of haul road locations has been provided by Lendlease, in consultation with NPWS (see **Appendix B**). It is understood that the route off The Northern Road and along the back of Werrington will be the primary heavy vehicle haul route. The footprint of the haul roads are depicted in **Figure 1**, and is included in the subject site. It is not anticipated that tree removal is required for upgrade of any of the existing tracks for use as haul roads, as confirmed with NPWS during the site inspection on 10 March 2021.

## A.2.3. Supplementary Flora and Fauna Surveys

Supplementary flora and fauna surveys were conducted within the subject site, in response to the RFI. The methods and results are described below:

### A.2.3.1. Methods

Supplementary flora and fauna surveys were conducted within the subject site between 9 – 15 March 2021. The methods of each survey are described below:

#### A.i. Threatened Flora Surveys

To guide the threatened species searches, a list of candidate species was determined through analysis of database records and consideration of available habitat. The candidate species are equivalent to the subject species identified within Section 3.1.2 of the SIS and include *Acacia pubescens*, *Marsdenia viridiflora subsp. viridiflora*, *Grevillea juniperina subsp. juniperina* and *Pimelea spicata*.

Surveys for these species were undertaken on 11 March 2021. As identified by the Threatened Species Data Collection (EES, 2021), all these species can be surveyed for throughout the year. Therefore, the surveys undertaken in March are considered be appropriately timed.

Areas of potential habitat for these species were identified as occurring within woody vegetation in the subject site. This habitat and additional areas, including exotic grassland, were surveyed via a random meander transect. These surveys included traverses by personnel along a random meander transect. The random meander transect consisted of the entire length of the proposed haul road options (approximately 3km in length) (see **Figure 2**) and was conducted over a period of approximately 2 person hours.

#### A.ii. Threatened Fauna Surveys

Cumberland Ecology conducted targeted threatened fauna surveys in the subject site between 8 March and 15 March 2021. The threatened fauna surveys were conducted, where appropriate, in accordance with the survey guidelines provided in the *Threatened Biodiversity Survey and Assessment Guidelines for Development and Activities (Working Draft)* (DEC (NSW) 2004) and Threatened NSW Survey Guide for Threatened Frogs (DPIE 2020) and included the following surveys:

- Microbat surveys;
- Amphibian Surveys;
- Nocturnal Surveys; and
- Diurnal bird census.

The fauna survey methods are described in detail in the following sections. The locations of supplementary fauna surveys sites within the subject site are shown in **Figure 2**.

#### a. Microbat Surveys

Two ultrasonic bat detectors (SM2 units) were set to record for seven evenings at a suitable locations within the subject site, within the riparian corridor, as shown in **Figure 2**. The SM2 units were set to activate before

dusk each evening and switch off after dawn. All ultrasonic calls collected from the SM2 units were analysed and identified by Specialist Dr Anna McConville of Echo Ecology and Surveying.

Note that only one of the two SM2 units recorded data, as Unit#1 fell out of the tree it was secured to, and the microphone became water damaged.

Scientific naming of microchiropteran bats within this assessment follows Churchill (2009).

**b. Amphibian Surveys**

Amphibian surveys were conducted over four evenings in the subject site using call playback and diurnal searches.

Call playback was undertaken using a recording of the Green and Golden Bell Frog (*Litoria aurea*) calls and involved playing the call for five minutes, listening for five minutes, and then searching the surrounding habitat for five minutes. This was conducted within the riparian corridor within the subject site concurrently with spotlighting (see **Figure 2**). These surveys took place over three consecutive nights on the 9th, 10th and 11th of March, and on a single night on the 15th of March. The region had recently experienced heavy rainfall in the previous weeks and conditions were ideal for amphibian survey.

Diurnal searches for basking frogs were conducted within all areas of suitable habitat identified during the threatened flora surveys and were conducted on a single morning on 11 March 2021. Surveys were conducted in areas of suitable habitat that included treed vegetation, decorticating bark and fallen timber. Surveys included gently looking under loose bark on trees, under rock, through timber pile or fallen logs, and checking other areas where fauna are likely to be located. This method was employed carefully to ensure no detrimental impacts occurred to any fauna or their habitat.

**c. Nocturnal Surveys**

Nocturnal spotlighting was undertaken via area searches along pre-determined transects throughout the subject site using high power hand-held torches, focussing on treed areas and areas associated with habitat features, and the riparian corridor (targeting Green and Golden Bell Frog). Two transects were surveyed for between 40 person minutes and 60 person minutes each. The location of the transects is shown on **Figure 2**. These surveys took place over three consecutive nights on the 9th, 10th and 11th of March, and on a single night on the 15th of March. During the nocturnal surveys, observations of all nocturnal birds, mammals, amphibians and reptiles were recorded.

**d. Diurnal Birds Surveys**

Visual observation and call identification of diurnal birds was carried out throughout the subject site during the targeted fauna surveys. Diurnal birds were identified and recorded as they were encountered throughout the subject site during the survey period. Diurnal birds were also recorded from 2 census points within the subject site (see **Figure 2**) that were surveyed for a period of approximately 20 minutes each over two mornings.

### A.2.3.2. Fauna Survey Effort

All surveys are undertaken during periods specified in the Threatened Biodiversity Data Collection (OEH 2018) for each species and according to appropriate survey guidelines. **Table 1** below shows the fauna survey effort, including dates, staff members and **Figure 2** shows the fauna survey locations. Weather conditions during surveys are shown in **Table 2**.

**Table 1 Fauna Survey Effort During Supplementary Surveys of the Subject Site**

| Survey Type | Dates | Personnel | Effort |
|---|---|---|---|
| General habitat assessment | 11/03/2021 | Sally Dupont and John Foster | 11.5 |
| Microchiropteran Bat - Echolocation call detection surveys | 09/03/2021 - 15/03/2021 | Sally Dupont and John Foster | 56 hrs recording |
| Diurnal bird census | 9/03/2021, 11/03/2021 | Sally Dupont | 1.5 person hours |
| Nocturnal Spotlight survey (including GGBF Call Play-back) | 09/03/2021, 10/03/2021, 11/03/2021, 15/03/2021 | Sally Dupont and John Foster | 8 person hours |
| Threatened flora searches | 11/03/2021 | John Foster | 2 person hours |

**Table 2 Weather Conditions During Surveys (Sourced from Australian Bureau of Meteorology, Penrith Station)**

| Date | Temperature Minimum (°C) | Temperature Maximum (°C) | Rainfall (mm) |
|---|---|---|---|
| 9/03/2021 | 16.7 | 33.2 | 23 |
| 10/03/2021 | 19.4 | 26.9 | 0 |
| 11/03/2021 | 19.3 | 27.8 | 0 |
| 15/03/2021 | 12.5 | 25.1 | 8 |

### A.2.3.3. Results

### A.i. Vegetation Mapping

No amendments to the existing vegetation mapping were identified as being required as a result of the additional surveys. As amendments to the subject site include only the addition of another haul road option, which is located on an existing track, no additional clearing of native vegetation is required, beyond what is outlined in the SIS.

### A.ii. Threatened Flora Survey

The supplementary threatened flora survey did not record any threatened flora species known or with potential to occur within the study area. These findings are consistent with those reported in the SIS (Cumberland Ecology, 2019).

### A.iii. Threatened Fauna Surveys

No threatened fauna species were recorded during targeted threatened fauna surveys. A total of three (3) amphibians, 27 birds, four (4) mammals, one reptile and one ray finned fish were recorded. Two of these species are exotic, and the remainder are common native species, all previously recorded on the SMDS. Species recorded during the supplementary surveys are listed in **Table 3** in **Appendix C**.

This data supplements the existing records of fauna within the subject site, and the study area, as outlined in the SIS (Cumberland Ecology, 2019).

## A.2.4. Mitigation Measures

Mitigation measures have been detailed in the SIS (Cumberland Ecology 2019), and include the Precinct-wide measures agreed as part of the SREP 30, and also the Wianamatta Regional Park Plan of Management. As requested in the RFI, additional mitigation measures are proposed and detailed below.

### A.2.4.1. Pre-clearing Surveys

Pre-clearance surveys will be conducted by an appropriately qualified ecologist within seven days prior to the commencement of construction works. The pre-clearance survey will involve the identification of potential habitat features such as trees with hollows, nests or decorticating bark, as well as bush rock and log piles. The pre-clearance survey will also include Cumberland Plain Land Snail searches. Any fauna encountered will be captured if possible and relocated to suitable habitat outside of the subject site or within the SMP/Regional Park.

Additionally, the pre-clearance surveys will also include searches for threatened flora species listed under the BC Act and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Furthermore, weeds listed under the *NSW Biosecurity Act 2015* which require control will be identified.

### A.2.4.2. Demarcating the Area of Clearing

Prior to any clearing being undertaken within the subject site, the edge of the vegetation to be cleared needs to be clearly delineated. Clearing of vegetation will be limited to these areas and must not exceed beyond the demarcated clearing boundary. Clearing limits can be marked with high visibility tape, temporary fencing, or other appropriate boundary markers. To avoid unnecessary damage to adjacent vegetation or inadvertent habitat removal, disturbance is to be restricted to the delineated area. No stockpiling of equipment, soils, or machinery will occur beyond the boundary. Stockpiling of materials must be done so in allocated areas within the clearing boundary and must not be placed within environmentally sensitive areas.

All no-go/exclusion zones such as the surrounding conservation areas are to be made known to all contractors working on the project. These no-go zones are to remain untouched and not impacted for the duration of construction. Highly visible temporary fencing is to be erected to fully delineate these zones. Furthermore, all

workers within the project are to be made aware that no clearing or parking of plant machinery during periods of no work is permitted beyond the subject site.

#### A.2.4.3. Tree Protection Fencing

Any trees that are to be retained within the subject site (as identified by an Arborist) are to have protective barrier fencing placed around trunks and critical root zones to protect from any underground works. Any underground works are not to sever tree roots unless approved by an Arborist. All protection measures are to be implemented prior to construction and are to be in accordance with Australian Standards 4970-2009.

Any trees that require directional felling are to be demarcated to avoid damage to protected areas and surrounding habitat. No access tracks and haul roads are to be prepared under or within the extent of the canopy of trees identified as a habitat item or a threatened species, except under the supervision of an ecologist or beneath trees thar are to be retained (under direction of an arborist). The parking of cars or plant machinery is also prohibited, unless under direction of arborist/ecologist, within areas of protected trees or threatened species. Additionally, the excavation or placement of fill under such trees is also prohibited unless advised by an ecologist.

#### A.2.4.4. Hygiene Protocols

To avoid the spread of Chytrid fungus, *Phytophthora cinnamomi* and other soil borne pathogens appropriate hygiene procedures and guidelines described in Best Practice Management Guidelines for *Phytophthora cinnamomi* within the Sydney Metropolitan Catchment Management Authority Area (Botanic Gardens Trust 2008) will be followed.

All machinery, clothing (such as boots and gloves), and tools, which will have contact with soil will be disinfected with a spray prior to entering and leaving the site.

Recommended disinfectant products include:

- Non-corrosive disinfectants including Coolacide®, Phytoclean®, or Biogram® which can be for cleaning footwear, tools, tyres, machinery and other items in contact with soil; and
- 70% Methylated spirits solution in a spray bottle which is suitable for personal use (clothing).

#### A.2.4.5. Bush rock, Log and Felled Tree Reuse

Suitable habitat items such as bush rock, logs and other woody material such felled trees can be salvaged and re-used as part of the landscaping plan or translocated to surrounding vegetation within the Regional Park to further improve available habitat.

Suitable salvage items will be clearly marked with an 'S' painted with pink spray paint by an ecologist once trees have been felled. Trees will not be marked prior as the salvage suitability of each tree depends on its condition once it is felled (e.g. some trees shatter when hitting the ground and become unsuitable). Suitable logs and bush-rock will be relocated in the Regional Park.

### A.2.4.6. Clearing Supervision

The clearing of all vegetation, including both habitat and non-habitat items, will be undertaken under supervision from a suitably qualified ecologist. A two stage clearing procedure will be adhered to, whereby the area around each habitat item is cleared initially, leaving the habitat feature isolated. The isolated habitat items should then be left overnight prior to felling. Upon felling, the operator is required to agitate any trees containing hollows to allow resident fauna to vacate and the use of a grabbing mechanism may be applied to the lowering of trees. Once felled, the acting ecologist will thoroughly inspect each habitat item. The acting ecologist will be present for the duration of clearing to rescue and relocate resident fauna.

### A.2.4.7. Stop Works Procedures

Prior to works being undertaken, all personnel working on the project will need to be inducted in regard to the potential threatened species occurring on the subject site. If any unexpected threatened species are encountered, the following procedures need to occur:

- Stop any work in the immediate area of the threatened species, habitat or population;
- Notify the Environmental/Site Manager, who will subsequently organise an ecologist to undertake a site inspection (if required) and provide advise of further actions;
- If no significant impact is likely, recommence project works;
- If significant impact is likely then obtain approvals, licences or permits as required;
- Once approval is obtained works can recommence; and
- Ensure all personnel are informed of the additional encountered species.

In the event of unexpected fauna encounters when an ecologist is not present on site, fauna encountered should not be handled but encouraged to self-relocate where possible. In the event of unexpected fauna injury or trapping, advice should be sought from an ecologist on appropriate follow up procedures for the situation.

### A.2.4.8. Artificial Lighting

Artificial light may have a negative affect on fauna and their habitat, as it can alter behaviour as well as availability of habitat and foraging resources. In consideration of the National Light Pollution Guidelines for Wildlife (Commonwealth of Australia 2020), the project will implement the following best practice lighting design for the installation of lighting around the basin and/or access routes:

- Start with natural darkness and only add light for specific purposes;
- Use adaptive light controls to manage light timing, intensity and colour;
- Only illuminate the area intended – keep light close to the ground, directed and shielded to avoid light spill;
- Use lowest intensity lighting appropriate for the task;
- Use non-reflective, dark coloured surfaces, where appropriate; and

- Use lights with reduced or filtered blue, violet and ultra-violet wavelengths.

### A.2.5. Vegetation Management Plan

A Vegetation Management Plan (VMP) will be prepared for the revegetation of areas disturbed during the construction of Regional Detention Basin I, and is to be implemented in conjunction with the Landscape Plan.

The VMP will refer to the Wianamatta Regional Park Plan of Management (DEC (NSW), 2007), but will not replace this document. The VMP will be prepared in accordance with current guidelines, including those for riparian corridors on waterfront land, as developed by DPIE. As requested by Council, the VMP will be submitted for review by Council prior to implementation and can be included as a Condition of Consent that must be approved before issue of Construction Certificate.

## A.3. Conclusion

This addendum to the SIS for Regional Detention Basin I, provides details of the supplementary flora and fauna surveys, delineation of haul roads, and additional mitigation measures, as per Council's RFI. The amendments have not resulted in an increase in the clearing of Cumberland Plain Woodland, as existing access tracks will be used for the additional haul roads. Nonetheless, the impacts on biodiversity are as predicted in the SIS, and no new TECs or threatened species will be impacted. No significant impact in terms of the EP&A Act are expected to occur.

## A.4. References

Botanic Gardens Trust. 2008. Best Practice Management Guidelines for Phytophthora cinnamomi within the Sydney Metropolitan Catchment Management Authority Area. Botanic Gardens Trust Royal Botanic Gardens Sydney, , Sydney.

Churchill, S. 2009. Australian Bats. Second edition. Allen & Unwin, Crows Nest, NSW.

Commonwealth of Australia. 2020. National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds.

Cumberland Ecology. 2019. Regional Drainage Detention Basin I - The Northern Road, Llandillo (Lot 1002 DP 1215087) - Application for Approval as Integrated and Designated Development: Species Impact Statement. Epping, NSW.

DEC (NSW). 2004. Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (Working Draft). New South Wales Department of Environment and Conservation, Hurstville, NSW.

DPIE. 2020. NSW Survey Guide for Treatened Frogs: A guide for the survey of threatened frogs and their habitats for the Biodiversity Assessment Method.

OEH. 2018. BioNet Atlas. Office of Environment and Heritage.

# APPENDIX B :
## NPWS Consultation

Dael Palte
Assistant Development Manager
Lendlease
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Dear Dael

**DA19/0811 – Drainage Basin I Haul Roads**

The purpose of this letter is to provide Maryland Development Company Pty Ltd (MDC) landowners consent to use trails within current and future regional park to facilitate the construction of Basin C & V6 (See Appendix A).

This approval is subject to the following:

- NPWS are to be consulted for any additional works to be undertaken on the haul road and appropriate revegetation is to occur if required
- Consultation with NPWS is required if trails are proposed to be widened
- Any ecological impacts associated with the use or widening of trails is to be appropriately managed under the oversight of an ecologist / arborist
- Gate management protocols are to be implemented during construction works to ensure macrofauna are unable to escape from the site
- Any damage incurred as a result of track movements must be remediated at the expense of MDC to the satisfaction of NPWS

If you need any more information, please refer to the letter from NPWS addressed 12/02/2020.

NPWS also acknowledge that ongoing access to the basins for maintenance purposes post-construction will be facilitated as required.

Should you require anything further please contact Luke Mitchell on 0429 168 068 or luke.mitchell@environment.nsw.gov.au.

01/03/2021

**KATIE LITTLEJOHN**
**Manager, Cumberland Area**
**NSW National Parks and Wildlife Service**

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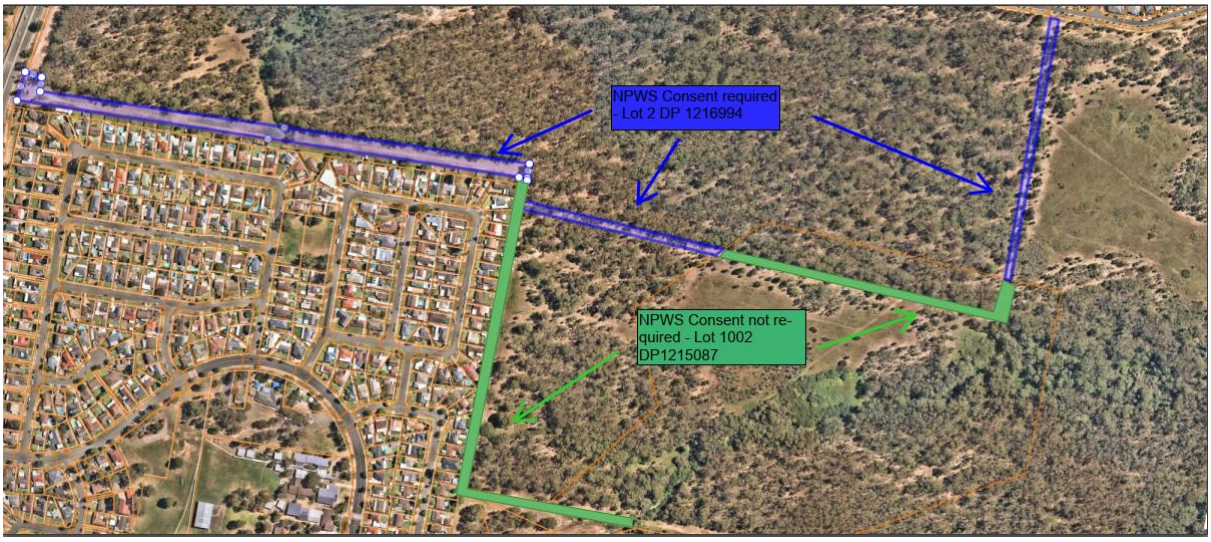
## Appendix A


NPWS Consent required - Lot 2 DP 1216994
NPWS Consent not required - Lot 1002 DP1215087

# APPENDIX C :
## Fauna Species List

**Table 3. Fauna Species Recorded on the Subject Site During Supplementary Surveys**

| Class | Common Name | Scientific Name | | BC Act Listing | EPBC Act Listing |
|---|---|---|---|---|---|
| **Amphibia** | | | | | |
| | Common Eastern Froglet | *Crinia Signifera* | | - | - |
| | Striped Marsh frog | *Limnodynastes Peronii* | | - | - |
| | Peron's Tree Frog | *Litoria peronii* | | - | - |
| **Aves** | | | | | |
| | Emu | *Acanthiza apicalis* | | - | - |
| | Common Myna | *Acridotheres tristis* | * | - | - |
| | Crested Pigeon | *Anthochaera phrygia* | | - | - |
| | White-faced Heron | *Coracina lineata* | | - | - |
| | Sulphur-crested Cockatoo | *Lichenostomus fasciogularis* | | - | - |
| | Laughing Kookaburra | *Microeca flavigaster* | | - | - |
| | Superb Fairy-wren | *Neopsephotus bourkii* | | - | - |
| | White-throated Gerygone | *Pardalotus rubricatus* | | - | - |
| | Yellow-rumped Thornbill | *Pavo cristatus* | | - | - |
| | Brown Thornbill | *Pernis ptilorynchus* | | - | - |
| | Spotted Pardalote | *Petroica multicolor* | | - | - |
| | Bell Miner | *Phylidonyris novaehollandiae* | | - | - |
| | Noisy Miner | *Phylidonyris pyrrhopterus* | | - | - |
| | Red Wattlebird | *Platalea flavipes* | | - | - |
| | New Holland Honeyeater | *Poephila personata* | | - | - |
| | White-cheeked Honeyeater | *Poliocephalus poliocephalus* | | - | - |
| | Eastern Whipbird | *Psitteuteles versicolor* | | - | - |
| | Black-faced Cuckoo-shrike | *Pterodroma cervicalis* | | - | - |
| | Grey Butcherbird | *Puffinus newelli* | | - | - |
| | Australian Magpie | *Purpureicephalus spurius* | | - | - |
| | Pied Currawong | *Pycnoptilus floccosus* | | - | - |
| | Grey Fantail | *Rallina tricolor* | | - | - |
| | Willie Wagtail | *Recurvirostra novaehollandiae* | | - | - |
| | Australian Raven | *Rhipidura leucophrys* | | - | - |
| | Magpie-Lark | *Spheniscus magellanicus* | | - | - |
| | Yellow Robin | *Strepera fuliginosa* | | - | - |
| | Double-Barred Finch | *Tringa ochropus* | | - | - |

| Class | Common Name | Scientific Name | | BC Act Listing | EPBC Act Listing |
|---|---|---|---|---|---|
| **Mammalia** | | | | | |
| | White-striped Free-tailed Bat | *Austronomus australis* | | - | - |
| | Gould's Wattled Bat | *Chalinolobus gouldii* | | - | - |
| | Eastern Grey Kangaroo | *Macropus Giganteus* | | - | - |
| | Fox | *Vulpes vulpes* | * | - | - |
| **Reptilia** | | | | | |
| | Long-necked turtle | *Chelodina longicollis* | | - | - |
| **Fish/Rays** | | | | | |
| | Long-finned Eel | *Anguilla reinhardtii* | | - | - |

*Note: * = Exotic Species*

# FIGURES

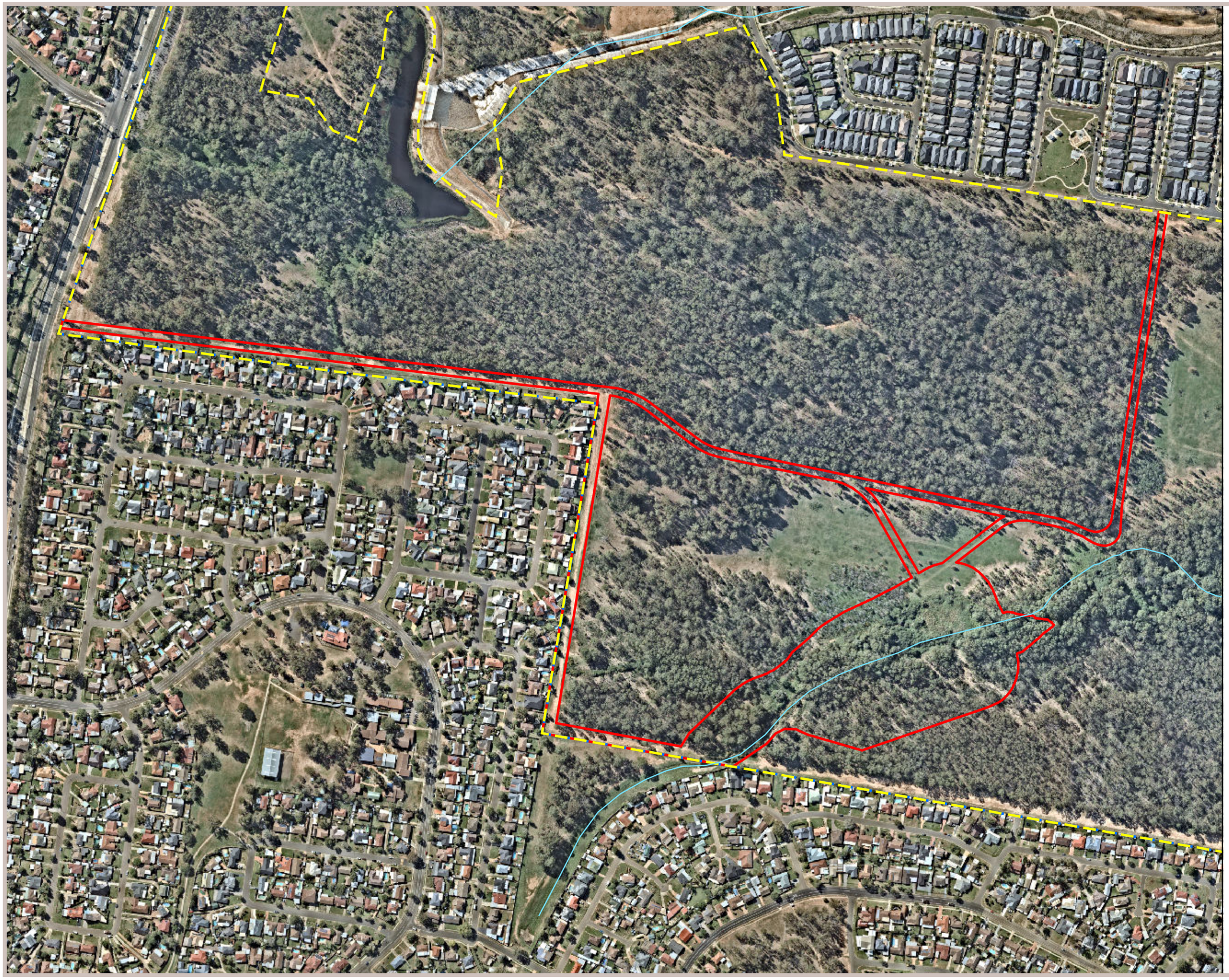



**Figure 1. Location of the subject site**


## Legend

- Subject Land - St Mary's Property Boundary
- Study Area
- Subject Site

**Fauna Survey Locations**

- Cumberland Plain Land Snail Search Centre Point
- Bird Census Point
- Nocturnal Survey/Diurnal Fauna Survey/Threatened Flora Survey

**Flora Survey Locations**

- Quadrat Locations
- Random Meander

**includes surveys of previously approved developments*

Image Source:
Image © Nearmap
(20/01/2018)

Coordinate System: MGA Zone 56 (GDA 94)

cumberland ecology

0 50 100 150 m

I:\...\17209\Figures\Letter 14\20210413\Figure 2. Survey locations

**Figure 2. Survey locations**


**Figure 3. Vegetation of the subject site**