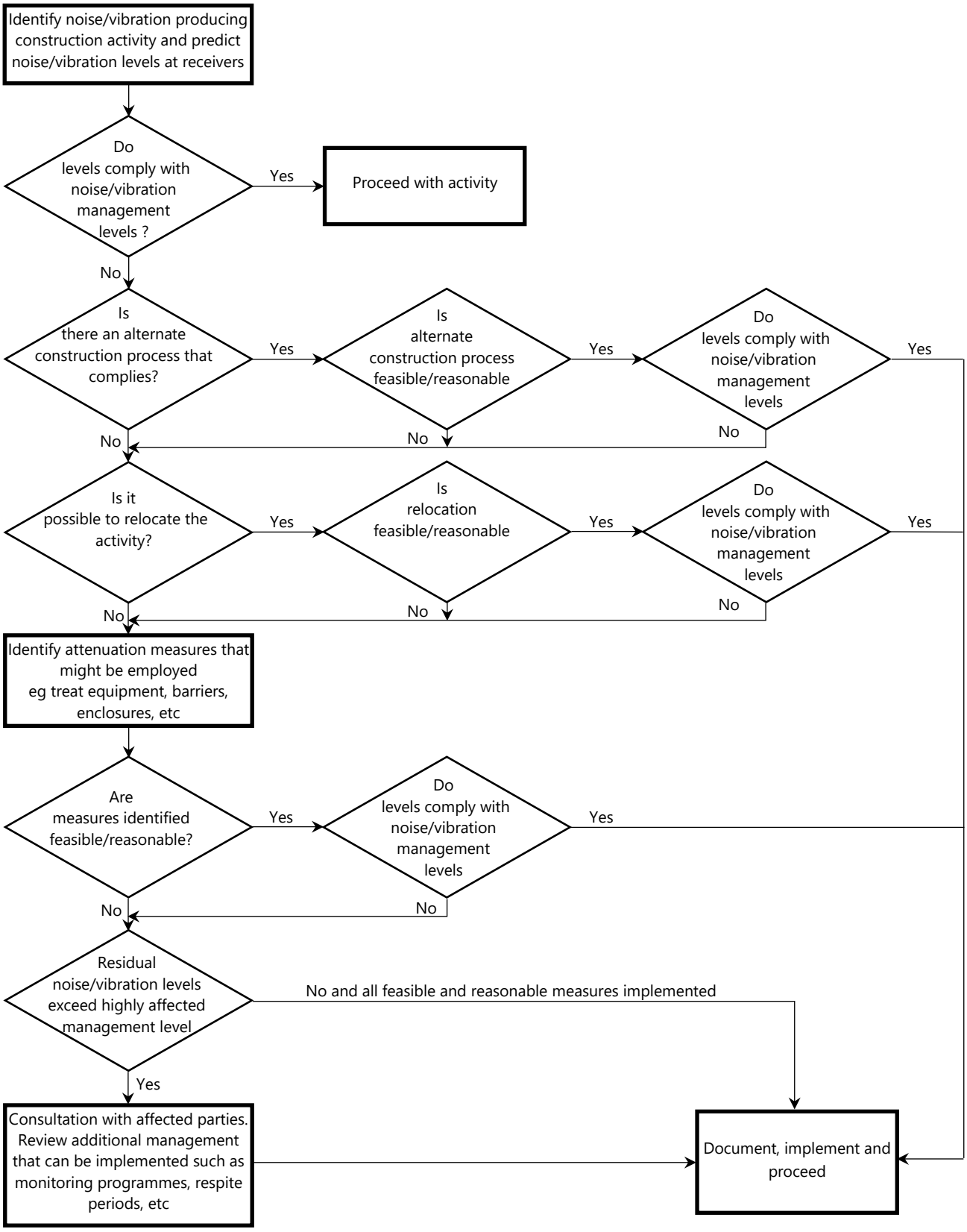
11 CONTROL OF CONSTRUCTION NOISE AND VIBRATION – PROCEDURAL STEPS

The flow chart presented below illustrates the process that will be followed in assessing construction activities.



12 ADDITIONAL NOISE AND VIBRATION CONTROL METHODS

In the event of complaints, there are a number of noise mitigation strategies available which can be considered. The determination of appropriate noise control measures will be dependent on the particular activities and construction appliances. This section provides an outline of available methods.

12.1 SELECTION OF ALTERNATE APPLIANCE OR PROCESS

Where a particular activity or construction appliance is found to generate excessive noise levels, it may be possible to select an alternative approach or appliance. For example, the use of a hydraulic hammer on certain areas of the site may potentially generate high levels of noise. Undertaking this activity using bulldozers, ripping and/or milling machines will result in lower noise levels. Noting this, the Builder has already taken steps in the design process to redesign the structure to reduce the number of bored piers within the RHI building and install pad footings rather than drilling piers, mitigating vibration impacts through the design process. In tandem with concrete saw cutting to allow for cut and lift operation, further process optimisation can be considered through consultation with the Builder and the subcontractors.

12.2 ACOUSTIC BARRIER

Given the position of adjacent development, it is unlikely that noise screens will provide significant acoustic benefit for residential receivers but will provide noticeable improvement for local commercial receivers at ground level.

The placement of barriers at the source is generally only effective for static plant. Equipment which is on the move or working in rough or undulating terrain cannot be effectively attenuated by placing barriers at the source. Barriers can also be placed between the source and the receiver. A portable barrier system can be setup when saw cutting is conducted externally.

The degree of noise reduction provided by barriers is dependent on the amount by which line of sight can be blocked by the barrier. If the receiver is totally shielded from the noise source reductions of up to 15dB(A) can be affected. Where only partial obstruction of line of sight occurs, noise reductions of 5 to 8dB(A) may be achieved. Where no line of sight is obstructed by the barrier, generally no noise reduction will occur.

As barriers are used to provide shielding and do not act as an enclosure, the material they are constructed from should have a noise reduction performance that is approximately 10dB(A) greater than the maximum reduction provided by the barrier. In this case the use of a material such as 10mm or 15mm thick plywood (radiata plywood) would be acceptable for the barriers. It is also noted that the current wall to Errol Flynn Boulevard is to be demolished and replaced with a 2.4m high class A hoarding. This will maximise the amenity of the local receivers close to the development site.

12.3 MATERIAL HANDLING

The installation of rubber matting over material handling areas can reduce the sound of impacts due to material being dropped by up to 20dB(A). Noting that the proposed material handling areas are mostly shielded by hoarding or the existing structures of the site, therefore rubber matting shall only be considered if complaint is raised by local receivers.

12.4 ESTABLISHMENT OF SITE PRACTICES

This involves the formulation of work practices to reduce noise generation. A more detailed management plan will be developed for this project in accordance with the construction methodology outlining work procedures and methods for minimising noise.

12.5 COMBINATION OF METHODS

In some cases, it may be necessary that two or more control measures be implemented to minimise noise.

13 COMMUNITY INTERACTION AND COMPLAINTS HANDLING

13.1 ESTABLISHMENT OF DIRECT COMMUNICATION WITH AFFECTED PARTIES

In order for any construction noise management programme to work effectively, continuous communication is required between all parties, which may be potentially impacted upon, the builder and the regulatory authority. This establishes a dynamic response process which allows for the adjustment of control methods and criteria for the benefit of all parties.

The objective in undertaking a consultation process is to:

- Inform and educate the groups about the project and the noise controls being implemented
- Increase understanding of all acoustic issues related to the project and options available
- Identify group concerns generated by the project, so that they can be addressed, and
- Ensure that concerned individuals or groups are aware of and have access to a Constructions Complaints Register which will be used to address any construction noise related problems should they arise.

Community consultation is required prior to any works commencing on site, with letterbox notifications to all identified surrounding sensitive receivers (refer Section 2). This will include high level detail of the construction plan detailing the proposed works on site and duration of each stage.

13.2 DEALING WITH COMPLAINTS

Should ongoing complaints of excessive noise or vibration criteria occur immediate measures shall be undertaken to investigate the complaint, the cause of the exceedances and identify the required changes to work practices. In the case of exceedances of the vibration limits all work potentially producing vibration shall cease until the exceedance is investigated.

The effectiveness of any changes shall be verified before continuing. Documentation and training of site staff shall occur to ensure the practices that produced the exceedances are not repeated.

If a noise complaint is received the complaint should be recorded on a Noise Complaint Form. The complaint form should list:

- The name and address of the complainant (if provided)
- The time and date the complaint was received
- The nature of the complaint and the time and date the noise was heard
- The name of the employee who received the complaint
- Actions taken to investigate the complaint, and a summary of the results of the investigation
- Required remedial action, if required
- Validation of the remedial action, and
- Summary of feedback to the complainant.

A permanent register of complaints should be held. All complaints received should be fully investigated and reported to management. The complainant should also be notified of the results and actions arising from the investigation.

The investigation of a complaint shall involve where applicable:

- Noise measurements at the affected receiver
- An investigation of the activities occurring at the time of the incident
- Inspection of the activity to determine whether any undue noise is being emitted by equipment, and
- Whether work practices were being carried out either within established guidelines or outside these guidelines.

Where an item of plant is found to be emitting excessive noise, the cause is to be rectified as soon as possible. Where work practices within established guidelines are found to result in excessive noise being generated then the guidelines should be modified so as to reduce noise emissions to acceptable levels. Where guidelines are not being followed, the additional training and counselling of employees should be carried out.

Measurement or other methods shall validate the results of any corrective actions arising from a complaint where applicable.

13.3 REPORTING REQUIREMENTS

The following shall be kept on site:

1. A register of complaints received/communication with the local community shall be maintained and kept on site with information as detailed in this report.
2. Where noise/vibration complaints require noise/vibration monitoring, results from monitoring shall be retained on site at all times.
3. Any noise exceedances occurring including the actions taken and results of follow up monitoring.
4. A report detailing complaints received and actions taken shall be presented to the construction liaison committee.

13.4 CONTINGENCY PLANS

Where non-compliances or noise complaints are raised the following methodology will be implemented.

1. Determine the offending plant/equipment/process.
2. Locate the plant/equipment/process further away from the affected receiver(s) if possible.
3. Implement additional acoustic treatment in the form of localised barriers, silencers etc where practical.
4. Selecting alternative equipment/processes where practical.

14 CONCLUSION

A construction noise and vibration management sub-plan has been undertaken of the proposed construction works to be undertaken for New Jerrabomberra High School. Potential noise and vibration impacts on nearby developments have been assessed.

Provided that the mitigation techniques and vibration monitoring recommended in Sections 11, 12, 12 & 13 of this report are adopted, noise and vibration impacts on the adjacent buildings are expected to be acceptable.

We trust this information is satisfactory. Please contact us should you have any further queries.

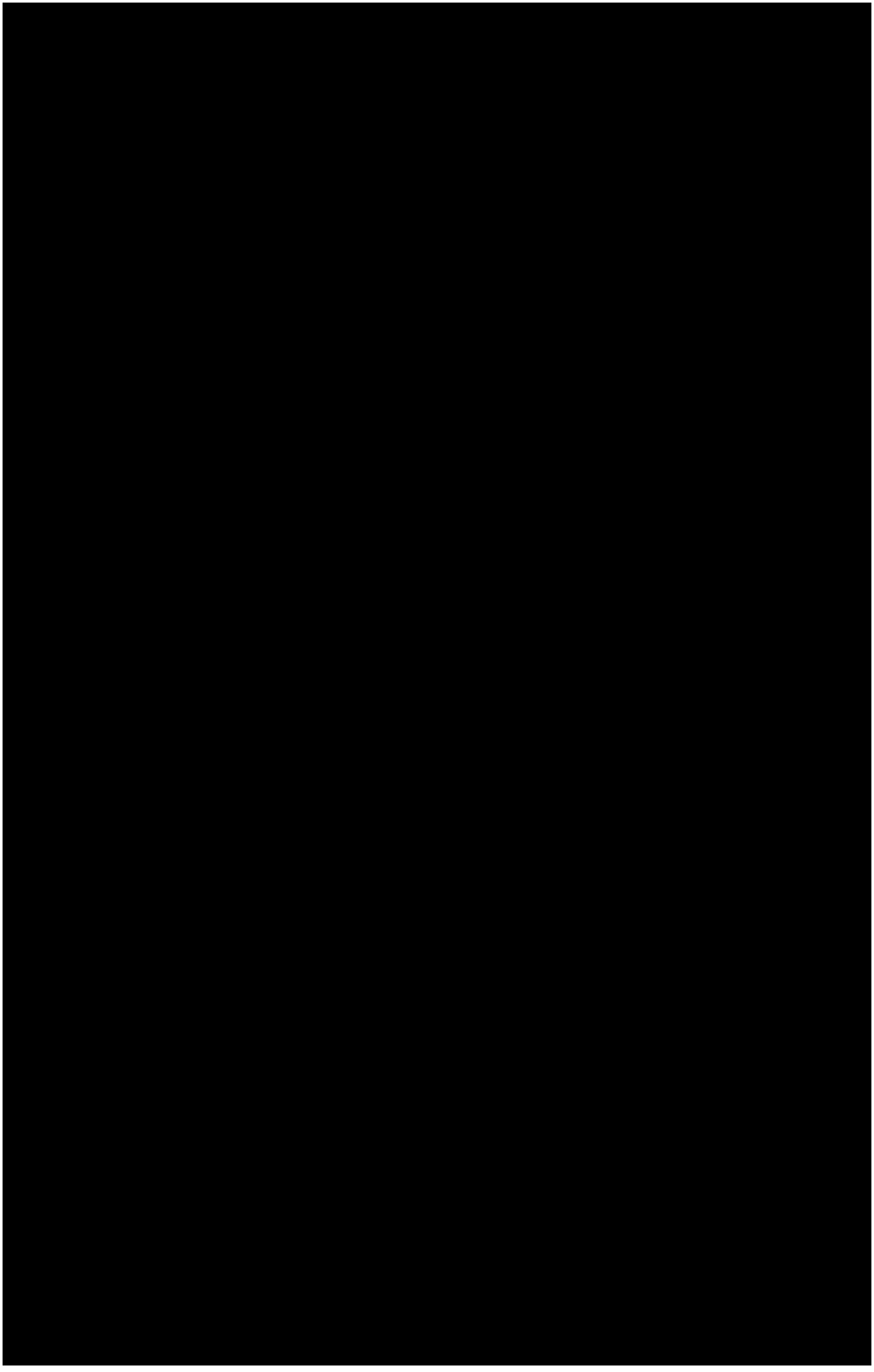
Yours faithfully,

Acoustic Logic Pty Ltd

[redacted]

APPENDIX 1

Author CV



APPENDIX I – EMP Preparation checklist

Attached document - Checklist from EMP Guideline - NV - 07.07.22

Appendix A. EMP preparation checklist

Use the checklist below to help develop an EMP that contains all the required information. The checklist should be completed and supplied to the Department with the EMP. One checklist should be submitted for each EMP.

Requirement	Plan reference	Yes/No/Not applicable
Document preparation and endorsement		
Has the EMP been prepared in consultation with all relevant stakeholders as per the requirements of the conditions of consent? (Section 4.1)	10.3	Yes
Have the views of the relevant stakeholders been taken into consideration? Have appropriate amendments been made to the EMP and does the EMP clearly identify the location of any changes? (Section 4.1)	10.5	Yes
Has the EMP been internally approved by an authorised representative of the proponent or contractor? (Section 4.2)	1.1	Yes
Version and content		
Does the EMP describe the proponent's Environmental Management System (EMS) (if any), and identify how the EMP relates to other documents required by the conditions of consent? (Section 3.5.1)	2.2	Yes
Does the EMP include the required general content and version control information? (Section 3.1)	1.1	Yes
Does the EMP have an introduction that describes the project, scope of works, site location and any staging or timing considerations? (Section 3.2)	3.1	Yes
Does the EMP reference the project description? (Section 3.3)	3.1	Yes
Does the EMP reference a Community and Stakeholder Engagement Plan (or similar) or include community and stakeholder engagement actions (if required)? (Section 3.4)	10.3	SINSW to provide
Have all other relevant approvals been identified? Has appropriate information been provided regarding how each approval is relevant? (Section 4)		SSD conditions
Has the environmental management structure and responsibilities been included? (Section 3.5.2)	5.1	Yes
Does the EMP include processes for training of project personnel and identify how training and awareness needs will be identified? (Section 3.5.3)	5.1	Yes
Does the EMP clearly identify the relevant legal and compliance requirements that relate to the EMP? (Section 3.5.3)	6	Yes
Does the EMP include all the conditions of consent to be addressed by the EMP and identify where in the EMP each requirement has been addressed? (Section 3.5.13)	1.2	Yes
Have all relevant guidelines, policies and standards been identified, including details of how they are relevant? (Section 3.5)	4	Yes
Is the process that will be adopted to identify and analyse the environmental risks included? (Section 3.5.5)	7.3	Yes
Have all the environmental management measures in the EIA been directly reproduced into the EMP? (Section 3.5.7)	ALL	Yes, Refer EIS recommendations
Have any additional environmental management measures been included in the EMP? (Section 3.5.7)		No

Requirement	Plan reference	Yes/No/Not applicable
Have environmental management measures been written in committed language? (Section 3.5.7)	Refer CEMP	Yes
Have project environmental management measures, including hold points, been identified and included? (Section 3.5.6)	7.3	Yes
Are relevant details of environmental monitoring that will be carried out included? (Section 3.5.8)	7.2	Yes
Have the components of any environmental monitoring programs been incorporated? (Section 3.5.8)	12	Yes
Are environmental inspections included? (Section 3.5.9)	12.4	Yes
Does the EMP document all relevant compliance monitoring and reporting requirements for the project? (Section 3.5.12 and 3.5.13)	13	Yes
Does the EMP describe the types of plans or maps (such as environmental control maps) that will be used to assist with the management of environmental matters on site? (Section 3.5.10)	2	Yes
Does the EMP list environmental management documents? (Section 3.5.11)	7.3	Yes
Is an auditing program referenced? (Section 3.5.13)	12.3	Yes
Does the EMP include the incident notification and reporting protocols that comply with the relevant conditions of consent? (Section 3.5.15)	9.1	Yes
Does the EMP identify the project role/position that is responsible for deciding whether an occurrence is an incident? (Section 3.5.15)	14	Yes
Does the EMP describe a corrective and preventative action process that addresses the requirements? (Section 3.5.16)	12.2	Yes
Does the EMP include details of a review and revision process that complies with the requirements? (Section 3.6)	13	Yes

APPENDIX J – Poplars EPBC Management Plan

Attached document - Appendix J - JHS - Poplars EPBC ACT- Construction Environmental Management Plan V2.2

APPENDIX K – Aviation Wildlife Assessment

Appendix K – JHS Aviation wildlife hazard assessment

POPLARS EPBC ACT
CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

EPBC No.: 2020/8801

Project Name: The Poplars, Jerrabomberra, NSW

Proponent/Approval Holder: Poplars Developments Pty Ltd

ACN 128 465 887

Approved Action: Mixed-use commercial development

OCTOBER 2021

PROJECT TITLE: *POPLARS EPBC ACT CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN*

PROJECT NUMBER: *7486*

Prepared by:	D. Rae	Date:	23/09/2021
Reviewed by:	N. Turnbull	Date:	24/09/2021
Approved by:	N. Turnbull	Date:	24/09/2021

Base Template:	Version B June 2020

External Issue

Revision Control Register			
Version No:	**Issue Date:**	**Issued To:**	**Name:**
1.0	25/08/2021	BMCA	C. Daly
2.1	28/09/2021	BMCA	C. Daly
2.2	17/10/2021	BMCA	C. Daly

TABLE OF CONTENTS

1. PURPOSE & SCOPE

Indesco Pty Ltd has developed this Construction Environmental Management Plan (CEMP) in conjunction with the Project Managers (Black Mountain Construction Assurance) and Ecologists (Capital Ecology). The plan provides a framework for managing potential environmental impacts associated with the construction of the remaining stages of the Poplars development on adjacent land that is known to support significant ecological values.

The primary purpose of this CEMP is to describe the potential risks and proposed controls that will be implemented to protect the adjacent ecological values. This CEMP is the overarching project document for environmental management throughout the Poplars development's construction phase(s). It will be included as an attachment to each stage-specific CEMP.

2. PROJECT OVERVIEW

The remaining stages of the Poplars development, defined in Figure A by the 'Proposed Action Area – Development Footprint', are located in Lot 1 DP1243031 and portions of Lot 6 DP1246134 and Lot 1 DP1263364, Jerrabomberra, NSW.

As part of the environmental approvals processes, the Poplars development was referred (Referral No. 2020/8801) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to the Commonwealth Department of Agriculture, Water and the Environment (DAWE). The Poplars development was determined to be a controlled action to be assessed by preliminary documentation. On 13 September 2021, the Poplars development received EPBC Act approval to implement the staged development of the project (included here as Appendix A). Attached to the EPBC Act approval are 27 conditions, including the following three conditions of specific relevance to this CEMP (refer to Part C of Appendix A for text definitions in **bold**).

To assist the reader the relevant section of the CEMP which addresses the condition of approval are also listed below.

4. *For the protection of the **protected matters** in areas adjacent to the **development footprint**, the approval holder must submit, before the **commencement of the action**, a Construction Environmental Management Plan (CEMP) for the **Minister's** written approval. The approval holder must not **commence the action** unless the CEMP has been approved in writing by the **Minister**. (Refer Section 4.1.1 Approval Holder)*
5. *The approval holder must implement the CEMP approved by the **Minister** within the **development footprint**. (Refer Section 4.1.1 Approval Holder)*
6. *For the protection of the **protected matters** in areas adjacent to the **development footprint**, the CEMP must prevent **impacts** of the action on adjacent areas and be consistent with the **Department's** Environmental Management Plan Guidelines 2014, and must specify full details of:*
    a. *Signage, consistent with signage for the **North Poplars BioBanking Agreement**, including to be placed in or adjacent to the **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area** to prohibit public access and inform the public of the presence of the **protected matters** (Refer Section 4.8 Signage);*
    b. *Methods, effort, timing and reporting of pre-clearance surveys (Refer Section 4.9 Pre-Clearance Surveys);*
    c. *Procedures to report and address unexpected finds of **protected matters** including a procedure to determine if **credits** should be **retired** in respect of the **protected matter(s)**, if so how many **credits**, and how the **Department** will be assured that this has happened (Refer Section 4.12 Unexpected Protected Matters Finds);*
    d. *Proposed management methods, effort and timing to exclude, control or eliminate **weeds** and pathogens (Refer Section 4.11 Weed and Pathogen Management);*
    e. *Proposed management methods, effort and timing to prevent and address existing erosion and prevent sediments entering watercourses (Refer Section 4.5 Sediment and Erosion Control Plan);*

f. *Proposed management methods, effort and timing to prevent surface water flows enabling the spread of harmful pollutants, and excessive ponding of water in the **White Box-Yellow Box- Blakely's Red Gum Woodland and Derived Native Grassland retained area** (Refer Section 4.4 Waterway Works (Surrounding Catchment Area);*

g. *The site induction program ensures that all persons implementing the action or on the site of the action are aware of the need and how to avoid and protect the **protected matters** (Refer Section 4.3 Site Induction).*

3. SITE OVERVIEW

The adjacent land that supports significant ecological values is defined in Figure A by the 'Poplars North BioBanking Site', 'Poplars South BioBanking Site', and 'Open Space Area'. The primary purpose of this CEMP is to protect those areas from impacts associated with the Poplars development.

3.1 POPLARS NORTH AND POPLARS SOUTH BIOBANKING SITES

The Poplars North and Poplars South BioBanking Sites have been established under BioBanking Agreements (Figure A). These agreements provide a formal, legally binding, and audited conservation-focused management regime for the portions of "The Poplars" property recognised as supporting significant biodiversity values. The Poplars North and Poplars South BioBanking Sites protect approximately 50% of "The Poplars" property, including the vast majority of the identified significant biodiversity values. Protected values include:

- 87.42 ha of grassland vegetation, 57.35 ha of which meets the listing criteria for EPBC Act listed *Natural Temperate Grassland of the South Eastern Highlands* (EPBC Act critically endangered);
- 10.65 ha of woodland vegetation, 8.48 ha of which meets the listing criteria for EPBC Act listed *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (EPBC Act critically endangered);
- 83.48 ha of Golden Sun Moth *Synemon plana* (EPBC Act critically endangered) habitat;
- 61.86 ha of Grassland Earless Dragon *Tympanocryptis pinguicolla* (EPBC Act endangered) habitat;
- 18.63 ha of Pink-tailed Worm-lizard *Aprasia parapulchella* (EPBC Act vulnerable) habitat;
- approximately 4,000 Button Wrinklewort *Rutidosis leptorrhynchoides* (EPBC Act endangered) plants; and
- approximately 3,500 Hoary Sunray *Leucochrysum albicans* var. *tricolor* (EPBC Act endangered) plants.

In addition, the BioBanking Sites protect habitat for NSW *Biodiversity Conservation Act 2016* (BC Act) listed threatened birds (i.e. Dusky Woodswallow *Artamus cyanopterus*, Gang-gang Cockatoo *Callocephalon fimbriatum*, Varied Sitella *Daphoenositta chrysoptera*, Little Eagle *Hieraaetus morphnoides*, Scarlet Robin *Petroica boodang*, Flame Robin *Petroica phoenicea*, Speckled Warbler *Pyrrholaemus sagittatus*, Diamond Firetail *Stagonopleura guttata*, and the migratory White-throated Needletail *Hirundapus caudacutus* and Rainbow Bee-eater *Merops ornatus*), ACT listed species (i.e. Perunga Grasshopper *Perunga ochracea*), and species considered 'rare and uncommon in the region, (i.e. Canberra Raspy Cricket *Cooraboorama canberrae* and Key's Matchstick Grasshopper *Keyacris scurra*).

3.2 OPEN SPACE AREA

The Poplars development includes a 0.52 ha Open Space Area (Figure A). This Open Space Area, which supports 0.18 ha of EPBC Act Box-Gum Woodland, 0.18 of Golden Sun Moth habitat, and approximately 130 Hoary Sunray plants, will be protected and managed in a manner consistent with the Poplars North BioBanking Agreement.

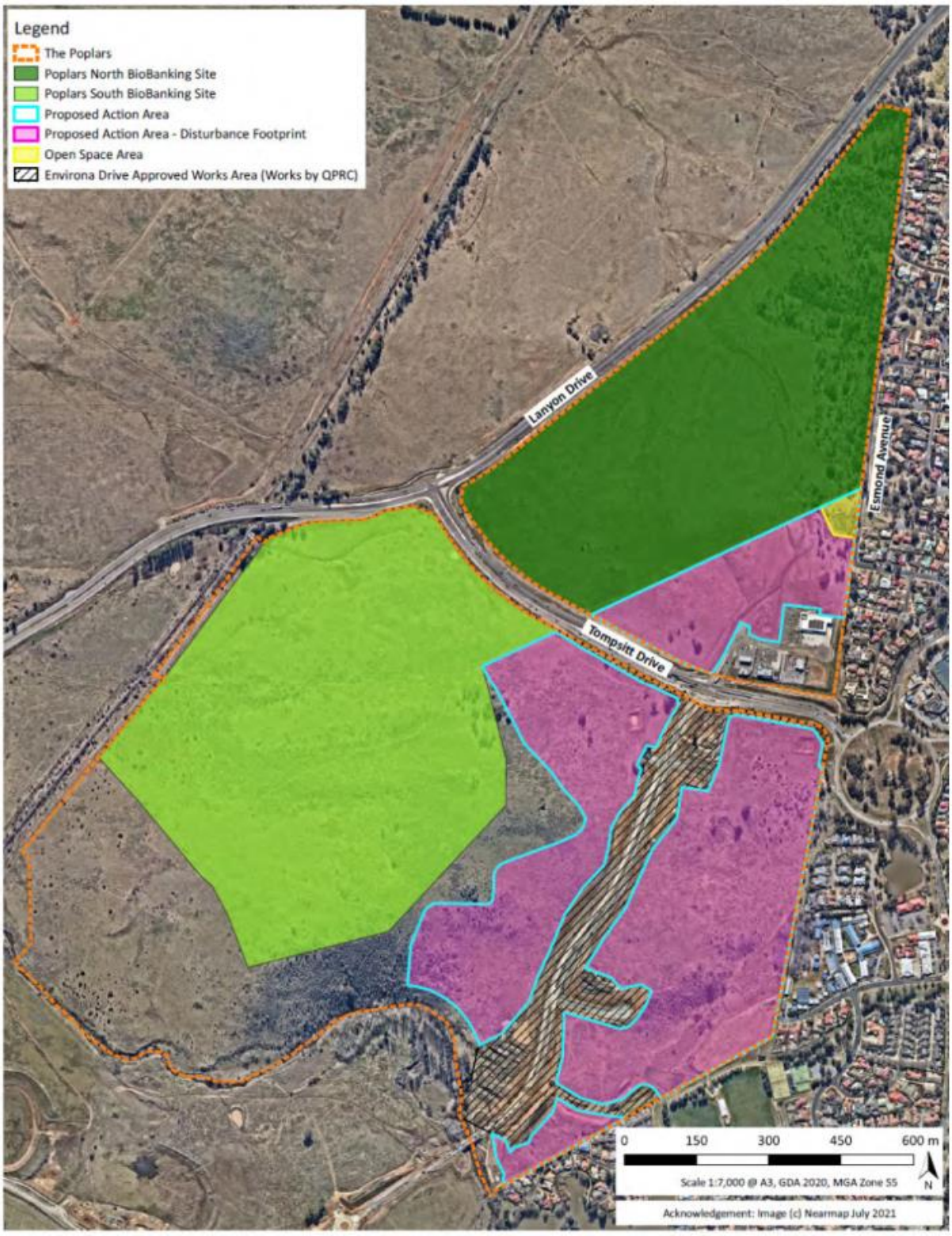


Figure A - Location Map

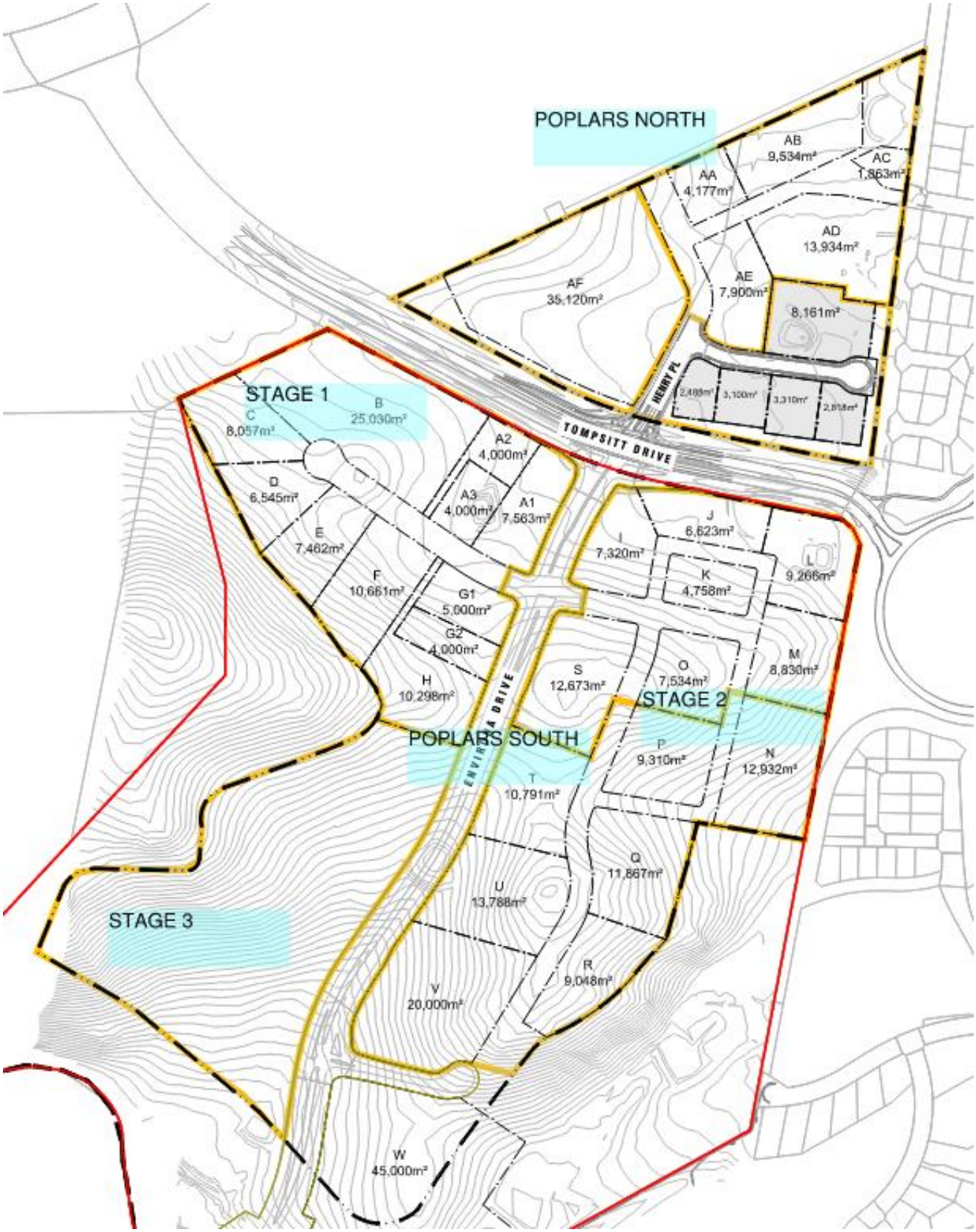


Figure B - Proposed Lot Plan

4. ENVIRONMENTAL IMPACTS AND CONTROL MEASURES

4.1 ROLES AND RESPONSIBILITIES

Unless noted otherwise in the sections below, the following roles and responsibilities apply:

4.1.1 Approval Holder

The Approval Holder is Poplars Developments Pty Ltd (ACN 128 465 887).

The Approval Holder is responsible for:

- the preparation of this CEMP and obtaining approval in writing of the plan by the Minister prior to commencing the action.
- implementing the CEMP approved by the Minister within the development footprint.
- notify DAWE in writing of any incident or non-compliance with this plan.
- advising DAWE of any unexpected finds of protected matters and arranging a suitable number of credits to be retired to offset impacts.

4.1.2 Site Developer

The Site Developer is to engage the following parties to deliver the development and monitor compliance of this CEMP:

- Project Manager;
- Superintendent;
- Principal Contractor; and
- Ecologist

Only suitably experienced parties are to be selected to undertake these roles. It is acknowledged that the development will be delivered in stages with different entities engaged to manage and deliver the works. Regardless of the contracted entities, the roles and responsibilities for the various parties remain as detailed below.

The Site Developer is also responsible for informing the Approval Holder of any non-conformances or Unexpected Protected Matters Finds associated with this plan.

4.1.3 Project Manager

The Project Manager is to attend construction site meetings, review monthly reports and advise the Developer of any non-conformances or unexpected protected matters associated with this CEMP. The Project Manager shall also coordinate the required inputs from the Ecologist to address unexpected protected matters.

4.1.4 Superintendent

The Superintendent shall undertake the following:

- Monitoring on-site construction activities by way of regular inspections by a surveillance officer and report any CEMP non-conformances.
- Meet fortnightly with the Principal Contractor during construction (or at other times as agreed) and review compliance with the CEMP
- The Superintendent shall provide a monthly report to the Developer, which reports on this CEMP and highlights any non-compliances.
- Notify the Project Manager of any non-conformance or the discovery of an unexpected protected matter

4.1.5 Principal Contractor

The Principal Contractor is responsible for the following:

- All site inductions for the Principal contractor site staff and subcontractors;
- Implementation and monitoring of controls listed in this CEMP; and
- Notifying the Superintendent of any non-conformances to this plan.

4.1.6 Ecologist

The Ecologist shall attend the site and provide advice to the Project Manager for the following events:

- Pre-clearance Surveys
- Weed inspections, and
- In the event of finding an unexpected protected matter

4.2 PRINCIPAL CONTRACTOR'S CEMP

Before commencing on-site work, the Principal Contractor shall prepare a site-specific CEMP that details environmental management plans for the particular stage being developed.

The plan shall incorporate all controls detailed in this document. The Superintendent shall review the Contractor's CEMP and confirm that it addresses all controls before granting possession of the site.

A copy of the Contractor's CEMP and this document shall be available on-site at all times during construction.

4.3 SITE INDUCTION

The Principal Contractor is to explain the adjacent ecological values and requirements for protection and exclusion during the construction period as part of the standard site induction.

All on-site staff are to be briefed on the contents of this CEMP.

All on-site staff must be provided with copies of site plans identifying environmentally sensitive areas, approved development areas, and access routes.

Written records are to be kept documenting that site workers have been advised of these requirements.

4.4 WATERWAY WORKS (SURROUNDING CATCHMENT AREA)

Run-off from some of the development areas will continue to discharge into the existing bio-banked areas. To avoid impacts from harmful pollutants on these environmentally sensitive areas, the following measures shall be implemented:

- The Project Manager shall ensure that the Principal Certifying Authority (Queanbeyan Palerang Regional Council) approves permanent stormwater management measures for each stage before commencing work on a stage.
- The Principal Contractor shall install cut-off drains/clearwater diversions before general stripping of topsoil.
- At North Poplars, the existing pond will be retained and upgraded to treat run-off from the developed areas.
- The Principal Contractor shall manage discharges from ponds during construction per the NSW Landcom publication Managing Urban Stormwater - Soils and Construction (4th Edition 2004- "Blue Book"). Where necessary, this shall include dosing the ponds before discharging water.

Stormwater management measures shall be designed and constructed to ensure that excessive ponding of water in the White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area does not occur.

During the development of a stage, the Principal Contractor shall check controls immediately following a significant rainfall event.

4.5 SEDIMENT AND EROSION CONTROL PLAN

The Principal Contractor shall prepare a Sediment and Erosion Control Plan (S&ECP) for all site works associated with each stage of development, including road works and access. The plan is to be submitted to the Superintendent for endorsement before lodging with the Principal Certifying Authority (Queanbeyan Palerang Regional Council) for approval. No works shall commence until the Principal Certifying Authority approves the plan.

The plan covers all measures to control erosion and sediment transport per the NSW Landcom publication Managing Urban Stormwater - Soils and Construction (4th Edition 2004- "Blue Book").

Erosion and sediment controls are to be installed by the Principal Contractor before the disturbance of any soils on the site and are to be maintained during the works and for as long as necessary after the completion to prevent sediment and dirty water leaving the site and entering the surface water system outside of the site. Controls shall address the following:

- Identify any existing causes of erosion and stabilise those areas;
- Divert uncontaminated run-off around cleared or disturbed areas;
- Erect a silt fence to prevent debris escaping into drainage systems or waterways;
- Prevent tracking of sediment by vehicles on roads; and
- Stockpile topsoil, excavated material, construction and landscaping supplies and debris within site.

Where appropriate the following controls shall be implemented:

- Clean water diversion drains – These shall be installed upstream of areas to be disturbed to channel clean water around or through a site
- Silt fences – To be installed downstream of disturbed areas and stockpiles
- Check dams – Check dams shall be installed at uintervals within drainage lines to reduce the erosive energy of the flow.
- Sediment ponds – Ponds are to be used where large areas are disturbed and the flow is concentrated to a single location. Prior to discharging from ponds the turbidity should be checked and where required pond dosed to settle sediments.
- Re-vegetation – As the work proceeds, areas should be re-vegetated as soon as practical thereby minimising the potential for wind or water erosion

The S&ECP shall nominate the location(s) for stabilised entries to construction sites. These entrances can either be established with crushed concrete or shaker/cattle grids.

All controls are to be regularly checked and maintained/repaired as appropriate by the Principal Contractor. Controls will be checked immediately following a significant rainfall event. Records of inspections shall be kept on-site.

4.6 DUST MANAGEMENT

The Principal Contractor shall detail measures to control dust within the works area and obtain an endorsement of these measures from the Superintendent.

The plan shall specify measures to monitor and manage dust emissions, including dust from stockpiles, blasting, traffic on-site and materials tracking from construction sites onto a public road. Measures shall include:

- All major access tracks to the corridor would be topped with aggregate to minimise erosion and dust potential;
- Water captured in sediment basins and other areas will be reused for dust suppression, compaction, etc. in preference to potable water;
- Controlling dust through progressive revegetation techniques;
- Water truck on-site for dust suppression as required; and
- During periods of high wind, activities that have the potential to cause shall cease.

4.7 SITE FENCING

No site access is permitted through the Poplars North BioBanking Site, Poplars South BioBanking Site, or Open Space Area.

To prevent unauthorised access to environmentally sensitive areas, the following shall apply:

- North Poplars Biobanking Site – A man-proof fence has been installed between the development area and the North Poplars Biobanking site. This fence shall be maintained and the gate between the two areas locked at all times;
- South Poplars Biobanking Site – An existing stock fence separates the development area from the adjacent South Poplars Biobanking site. As development progresses, the Principal Contractor shall replace the stockproof fence with a man-proof fence. During fence replacement, the Head Contractor shall install a temporary fence to prevent unauthorised access;
- North Poplars Retained Area (Hoary Sunray / PCT1334 Conservation Area - Refer Figure C) – To prevent impacts to this area, the Project Manager shall arrange for this area to be fenced off from the remaining lot before commencing works.

4.8 SIGNAGE

The Project Manager shall arrange signage, consistent with the North Poplars Bio-Banking Agreement, to be erected in or adjacent to the Retained Area (Refer Figure C) to prohibit public access and inform the public of the presence of the protected matters. Signage must:

- be the Bio-Banking / Biodiversity Stewardship Site signs available from the NSW Biodiversity Conservation Trust, or contain the same information.
- be installed and maintained along the boundary adjacent to Jerrabomberra suburbs.
- be replaced if the writing or the images on the sign are no longer clearly visible or are illegible.

Figure C – North Poplars: Hoary Sunray / PCT1334 Retained Area

4.9 PRE-CLEARANCE SURVEYS

4.9.1 Methods

Prior to clearance the Ecologist will survey all trees identified for removal for fauna habitat features (e.g. functional hollows, fissures, stick nests, etc.). Each tree that supports fauna habitat features will be clearly marked with fluorescent paint and recorded via hand-held GPS. The results of this survey will be recorded in a Pre-clearance Statement.

Each tree identified for removal that supports fauna habitat features will be cleared in the following manner.

- Hollow-bearing limbs will be removed and lowered to the ground. They will be inspected by the Ecologist for fauna. Any fauna present will be removed by the Ecologist and temporally cared for. The Ecologist will contact WIRES on 1300 094 737 for further instruction and assistance.
- The remainder of the tree will be felled by a chainsaw. The fallen tree will be inspected by The Ecologist for any previously undetected hollows. If present, these hollows will be inspected by the Ecologist for fauna. Any fauna present will be removed by the Ecologist and temporally cared for. The Ecologist will contact WIRES on 1300 094 737 for further instruction and assistance.
- Any other encountered wildlife in the tree will be temporally cared for by the Ecologist. The Ecologist will contact WIRES on 1300 094 737 for further instruction and assistance.

4.9.2 Timing

All practicable efforts will be made to schedule clearance of remnant trees to occur outside of the primary breeding season of most locally occurring native birds and other fauna (i.e. August to December). If a tree or trees must be removed during the primary breeding season, then each subject tree will be thoroughly inspected by the Ecologist to determine whether it is currently utilised by native fauna for nesting/breeding purposes. The Ecologist will provide the results of this inspection and the resulting determination in the Pre-clearance Statement. Based on this determination, the allowable action will be the applicable of the following three options.

1. Determination = the subject tree does not currently support native fauna nesting/breeding activity.

   ↓

   Action = proceed with removal in accordance with the methods outlined above.

2. Determination = the subject tree currently supports nesting/breeding activity limited to common native fauna species (e.g. Rosella, Magpie, Brushtail Possum).

   ↓

   Action = proceed with removal under close supervision by the Ecologist who will facilitate appropriate care for the fauna (i.e. relocation to nearby retained tree, transfer to WIRES etc.).

3. Determination = the subject tree currently supports nesting/breeding activity of species listed under the EPBC Act (i.e. MNES), BC Act, or otherwise considered regionally rare or uncommon.

   ↓

   Action = postpone tree removal and leave the tree undisturbed until the Ecologist confirms that the fauna have finished nesting/breeding activity and left under their own volition.

The results of tree removal activities will be recorded in a Post-clearance Statement.

4.9.3 Record Keeping and Reporting

In accordance with Condition 11 of the EPBC Act approval, the Pre-clearance Statements and Post-clearance Statements will be kept on file by the Approval Holder and Site Developer. In accordance with Condition 12, these statements will be provided to the Department upon request.

4.10 ENTRAPMENT OF FLORA AND FAUNA

The Principal Contractor shall mitigate any potential fauna entrapment in open trenches by adopting the following measures:

a) Open trenches will be kept to a minimum and constructed only when necessary; and
b) Open trenches will be checked and monitored, particularly after rain events and before backfilling.

In the unlikely event the Principal Contractor discovers fauna entrapped in an open trench, the Principal Contractor will immediately stop construction activities near the trench and contact WIRES on 1300 094 737 for further instruction and assistance.

4.11 WEED AND PATHOGEN MANAGEMENT

Before construction works commence within a stage of the development, a survey of existing vegetation will be undertaken by the Ecologist to identify any weed infestations. The Superintendent and Project Manager will be informed to identify if the Principal Contractor requires any controls before stripping and stockpiling topsoil.

During construction, the site perimeter will be inspected monthly to check that new weeds are not establishing in adjacent or retained areas of environmental value. The inspection will also include checking for weeds in tree protection zones or land not disturbed by earthworks and regrading.

The Principal Contractor will manage weeds in stockpiles by covering, seeding with a sterile cover crop, or undertaking weed control.

During the spreading of topsoiling and landscaping, the Principal Contractor's landscape sub-contractor must submit a consolidation program outlining weed management before completing soft landscape works and handover.

Appropriate vehicle hygiene will be maintained. Vehicles and machinery entering the proposed action area will be clean of weed seed or propagules.

Only sterile materials such as hessian/jute or rice straw will be used for soil stabilisation or similar purposes.

4.12 UNEXPECTED PROTECTED MATTERS FINDS

The following procedures will be implemented to address and report on any unexpected finds of protected matters. Protected matters include the EPBC Act listed species and ecological communities identified in Section 3.1 of this CEMP.

In the event of the unexpected find of a protected matter during a pre-clearance inspection by the Ecologist:

- The Site Supervisor shall be notified;
- Works shall cease in the affected area, and an exclusion zone will be set up;
- The Site Supervisor shall notify the Superintendent and Project Manager;
- The Ecologist shall advise the Site Supervisor, and Project Manager on the potential risk associated with the unexpected find and the need to undertake a further assessment and remedial and validation works;

- The Ecologist shall prepare a report detailing the unexpected find, which will be submitted to the Commonwealth DAWE;
- If required, the report will identify the number and class of NSW Biodiversity Offset Scheme credits that should be retired;
- Depending on the nature of the unexpected find and associated impact, approval from DAWE may be required before works can recommence;
- Works are not to recommence without the approval of the Ecologist and DAWE.

APPENDIX A. EPBC ACT APPROVAL

Australian Government
Department of Agriculture, Water and the Environment

APPROVAL

The Poplars, Jerrabomberra, NSW (EPBC 2020/8801)

This decision is made under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (the EPBC Act). Note that section 134(1A) of the EPBC Act applies to this approval, which provides in general terms that if the approval holder authorises another person to undertake any part of the action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such condition.

Details

Person to whom the approval is granted (approval holder)	Poplars Developments Pty Ltd
ACN of approval holder	128 465 887
Action	A mixed-use commercial development at The Poplars Jerrabomberra, NSW [See EPBC Act referral 2020/8801, subject to the variation request accepted on 19 November 2020]

Approval decision

My decision on whether or not to approve the taking of the action for the purposes of the controlling provision for the action is as follows.

Controlling Provisions

Listed Threatened Species and Communities	
Section 18	Approve
Section 18A	Approve

Period for which the approval has effect

This approval has effect until 31 December 2060

Decision-maker

Name and position	Kate Gowland, Acting Assistant Secretary, Environment Assessments (NSW, ACT) Branch
Signature	
Date of decision	13/9/2021

Conditions of approval

This approval is subject to the conditions under the EPBC Act as set out in ANNEXURE A.

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

1. The approval holder must not **clear** outside the **development footprint.**

2. The approval holder must not **clear** inside the **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area**.

3. Within the **development footprint**, the approval holder must not **clear** more than:

    a. 13.51 hectares of **Golden Sun Moth habitat**; and

    b. 0.42 hectares of **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland**.

Mitigation and management measures

4. For the protection of the **protected matters** in areas adjacent to the **development footprint**, the approval holder must submit, prior to the **commencement of the action**, a Construction Environmental Management Plan (CEMP) for the **Minister's** written approval. The approval holder must not **commence the action** unless the CEMP has been approved in writing by the **Minister**.

5. The approval holder must implement the CEMP approved by the **Minister** within the **development footprint**.

6. For the protection of the **protected matters** in areas adjacent to the **development footprint**, the CEMP must prevent **impacts** of the action on adjacent areas and be consistent with the **Department's** *Environmental Management Plan Guidelines 2014*, and must specify full details of:

    a. Signage, consistent with signage for the **North Poplars BioBanking Agreement**, including to be placed in or adjacent to the **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area** to prohibit public access and inform the public of the presence of the **protected matters**;

    b. Methods, effort, timing and reporting of pre-clearance surveys;

    c. Procedures to report and address unexpected finds of **protected matters** including a procedure to determine if **credits** should be **retired** in respect of the **protected matter(s)**, if so how many **credits**, and how the **Department** will be assured that this has happened;

    d. Proposed management methods, effort and timing to exclude, control or eliminate **weeds** and pathogens;

    e. Proposed management methods, effort and timing to prevent and address existing erosion and prevent sediments entering watercourses;

    f. Proposed management methods, effort and timing to prevent surface water flows enabling the spread of harmful pollutants and excessive ponding of water in the **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area**;

    g. The site induction program to ensure that all persons implementing the action or on the site of the action are aware of the need and how to avoid and protect the **protected matters**.

7. For the protection of the **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area** the approval holder must undertake on-ground management activities throughout the **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area** consistent with those specified in the **North Poplars BioBanking Agreement.**

Compensation measures

8. To compensate for the clearance of **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland** and **Golden Sun Moth habitat**, prior to the **commencement** of each **development stage** the approval holder must provide the **Department** with written **evidence** that it has **retired** the number of **credits** below in respect of that **development stage**:

    a. 34 species **credits** for **Golden Sun Moth** for **Stage 1 of the Innovation Precinct**;

    b. 9 species **credits** for **Golden Sun Moth** for the **Jerrabomberra High School**;

    c. 33 species **credits** for **Golden Sun Moth** for the **remainder of the North Poplars development footprint**;

    d. 26 species **credits** for **Golden Sun Moth** for the **remainder of the South Poplars development footprint**; and

    e. 10 ecosystem **credits** for **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland** for the **remainder of the North Poplars development footprint**.

Part B – Standard administrative conditions

Notification of date of commencement of the action

9. The approval holder must notify the **Department** in writing of the date of **commencement of the action** within 10 **business days** after the date of **commencement of the action**. The approval holder must notify the **Department** in writing of the date of **commencement** of each **development stage** within 10 **business days** after the date of **commencement** of each commenced **development stage**.

10. If the **commencement of the action** does not occur within 5 years from the date of this approval, then the approval holder must not **commence the action** without the prior written agreement of the **Minister**.

Compliance records

11. The approval holder must maintain accurate and complete **compliance records**.

12. If the **Department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **Department** within the timeframe specified in the request.

Note: **Compliance records** may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the **Department's** website or through the general media.

Submission and publication of plans

13. The approval holder must:

    a. submit **plans** electronically to the **Department** for approval by the **Minister**;

    b. publish each **plan** on the **website** within 20 **business days** of the date the **plan** is approved by the **Minister** or of the date a revised action management plan is submitted to the **Minister** or the **Department**, unless otherwise agreed to in writing by the **Minister**;

c. exclude or redact **sensitive ecological data** from **plans** published on the **website** or provided to a member of the public; and

d. keep **plans** published on the **website** until the end date of this approval.

14. The approval holder must ensure that any **monitoring data** (including **sensitive ecological data**), surveys, maps, and other spatial and metadata required under conditions of this approval, is prepared in accordance with the **Department's** *Guidelines for biological survey and mapped data* (2018) and submitted electronically to the **Department**.

Annual compliance reporting

15. The approval holder must prepare a **compliance report** for each 12 month period following the date of **commencement of the action**, or otherwise in accordance with an annual date that has been agreed to in writing by the **Minister**. The approval holder must:

    a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;

    b. notify the **Department** by email that a **compliance report** has been published on the **website** and provide the weblink for the **compliance report** within 5 **business days** of the date of publication;

    c. keep all **compliance reports** publicly available on the **website** until this approval expires;

    d. exclude or redact **sensitive ecological data** from **compliance reports** published on the **website;**

    e. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.

Note: **Compliance reports** may be published on the **Department's** website.

Reporting non-compliance

16. The approval holder must notify the **Department** in writing of any: **incident**; non-compliance with the conditions; or non-compliance with the commitments made in **plans**. The notification must be given as soon as practicable, and no later than two **business days** after becoming aware of the **incident** or non-compliance. The notification must specify:

    a. any condition which is or may be in breach;

    b. a short description of the **incident** and/or non-compliance; and

    c. the location (including co-ordinates), date, and time of the **incident** and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.

17. The approval holder must provide to the **Department** the details of any **incident** or non-compliance with the conditions or commitments made in **plans** as soon as practicable and no later than 10 **business days** after becoming aware of the **incident** or non-compliance, specifying:

    a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;

    b. the potential impacts of the **incident** or non-compliance; and

    c. the method and timing of any remedial action that will be undertaken by the approval holder.

Independent audit

18. The approval holder must ensure that **independent audits** of compliance with the conditions are conducted as requested in writing by the **Minister**.

19. For each **independent audit**, the approval holder must:

a. provide the name and qualifications of the independent auditor and the draft audit criteria to the **Department**;

b. only commence the **independent audit** once the audit criteria have been approved in writing by the **Department**; and

c. submit an audit report to the **Department** within the timeframe specified in the approved audit criteria.

20. The approval holder must publish the audit report on the **website** within 10 **business days** of receiving the **Department's** approval of the audit report and keep the audit report published on the **website** until the end date of this approval, or an earlier date agreed to by the **Department** in writing.

Revision of action management plans

21. The approval holder may, at any time, apply to the **Minister** for a variation to an action management plan approved by the **Minister** under condition 4, or as subsequently revised in accordance with these conditions, by submitting an application in accordance with the requirements of section 143A of the **EPBC Act**. If the **Minister** approves a revised action management plan (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of the previous action management plan.
22. The approval holder may choose to revise an action management plan approved by the **Minister** under condition 4, or as subsequently revised in accordance with these conditions, without submitting it for approval under section 143A of the **EPBC Act**, if the taking of the action in accordance with the RAMP would not be likely to have a **new or increased impact**.
23. If the approval holder makes the choice under condition 22 to revise an action management plan without submitting it for approval, the approval holder must:

    a. notify the **Department** in writing that the approved action management plan has been revised and provide the **Department** with:

        i. an electronic copy of the RAMP;

        ii. an electronic copy of the RAMP marked up with track changes to show the differences between the approved action management plan and the RAMP;

        iii. an explanation of the differences between the approved action management plan and the RAMP;

        iv. the reasons the approval holder considers that taking the action in accordance with the RAMP would not be likely to have a **new or increased impact**; and

        v. written notice of the date on which the approval holder will implement the RAMP (RAMP implementation date), being at least 20 **business days** after the date of providing notice of the revision of the action management plan, or a date agreed to in writing with the **Department**.

    b. subject to condition 25, implement the RAMP from the RAMP implementation date.

24. The approval holder may revoke their choice to implement a RAMP under condition 22 at any time by giving written notice to the **Department**. If the approval holder revokes the choice under condition 22, the approval holder must implement the action management plan in force immediately prior to the revision undertaken under condition 22.
25. If the **Minister** gives a notice to the approval holder that the **Minister** is satisfied that the taking of the action in accordance with the RAMP would be likely to have a **new or increased impact**, then:

    a. condition 22 does not apply, or ceases to apply, in relation to the RAMP; and

    b. the approval holder must implement the action management plan specified by the **Minister** in the notice.

26. At the time of giving the notice under condition 25, the **Minister** may also notify that for a specified period of time, condition 22 does not apply for one or more specified action management plans.

Note: conditions 22, 23, 24 and 25 are not intended to limit the operation of section 143A of the **EPBC Act** which allows the approval holder to submit a revised action management plan, at any time, to the **Minister** for approval.

Completion of the action

27. Within 20 **business days** after the **completion of the action**, the approval holder must notify the **Department** in writing and provide **completion data**.

Part C - Definitions

In these conditions, except where contrary intention is expressed, the following definitions are used:

Business day means a day that is not a Saturday, a Sunday or a public holiday in the state or territory of the action.

Clear/Clearing/Cleared means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of vegetation (but not including **weeds**).

Commencement in relation to commencement of a **development stage**, means the first instance of any specified activity associated with the action, and including **clearing** and **construction**, undertaken within that **development stage**. **Commencement**, in relation to commencement of a **development stage**, does not include minor physical disturbance necessary to:

i. undertake pre-clearance surveys or monitoring programs in that **development stage**;

ii. undertake geotechnical investigations or similar tests in that **development stage**;

iii. install signage and /or temporary fencing to prevent unapproved use of that **development stage**;

iv. protect environmental and property assets within that **development stage** from fire, **weeds** and feral animals, including installation of temporary fencing, and use of existing surface access tracks;

v. install temporary site facilities for persons undertaking pre-commencement activities within that **development stage** so long as these are located where they have no impact on the **protected matters**.

Commencement of the action means the first instance of any specified activity associated with the action, and including **clearing** and **construction.**

Commencement of the action does not include minor physical disturbance necessary to:

i. undertake pre-clearance surveys or monitoring programs;

ii. undertake geotechnical investigations or similar tests;

iii. install signage and /or temporary fencing to prevent unapproved use of the **development footprint**;

iv. protect environmental and property assets from fire, **weeds** and feral animals, including installation of temporary fencing, and use of existing surface access tracks;

v. install temporary site facilities for persons undertaking pre-commencement activities so long as these are located where they have no impact on the **protected matters**.

Commencement of the development stage for the remainder of the North Poplars development footprint means the first instance of any specified activity associated with the **remainder of the North Poplars development footprint**, including **clearing** and **construction**, and does not include minor physical disturbances as described in the definition for **Commencement of the action**.

Completion data means an environmental report and spatial data clearly detailing how the conditions of this approval have been met. The **Department**'s preferred spatial data format is **shapefile**.

Completion of the action means the date on which all specified activities associated with the action have permanently ceased.

Compliance records means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession or that are within the approval holder's power to obtain lawfully.

Compliance reports means written reports:

i. providing accurate and complete details of compliance, **incidents**, and non-compliance with the conditions and the **plans**;

ii. consistent with the **Department's** *Annual Compliance Report Guidelines* (2014);

iii. include a **shapefile** of any clearance of any **protected matters**, or their habitat, undertaken within the relevant 12 month period; and

iv. annexing a schedule of all **plans** prepared and in existence in relation to the conditions during the relevant 12 month period.

Credits means biodiversity credits under the *Biodiversity Conservation Act 2016 (NSW).*

Construction means the erection of a building or structure that is or is to be fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; preliminary site preparation work which involves breaking of the ground (including pile driving); the laying of pipes and other prefabricated materials in the ground, and any associated excavation work; but excluding the installation of temporary fences and signage.

Department means the Australian Government agency responsible for administering the **EPBC Act**.

Development footprint means the 52.77 hectare area represented as the solid pink area and defined as the 'Proposed Action Area - Disturbance Footprint' in the legend of Attachment 1. The **development footprint** also includes the area within the yellow boundary line and defined as the 'Open Space Area' in the legend of Attachment 3 but with the exclusion of the **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area**.

Development stage means any work associated with one of the following specified stages of the action that will be undertaken sequentially, or concurrently: **Stage 1 of the Innovation Precinct**, the **Jerrabomberra High School,** the **remainder of the North Poplars development footprint** and the **remainder of the South Poplars development footprint**.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Evidence means written certified documentation from the relevant authority.

Golden Sun Moth means the Golden Sun Moth (*Synemon plana*) listed as critically endangered under the **EPBC Act.**

Golden Sun Moth habitat means the areas represented by the shapes with yellow hatching in Attachment 4, described in the legend as 'Golden Sun Moth habitat'.

Hoary Sunray habitat means the 700m^2 area covering the area represented by star shapes and described in the legend as 'Hoary Sunray' in Attachment 3.

Impact means any measurable direct or indirect disturbance or harmful change as a result of any activity associated with the action.

Incident(s) means any event which has the potential to, or does, impact on one or more **protected matter(s)** other than as authorised under this approval.

Independent audit: means an audit conducted by an independent and **suitably qualified person** as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines* (2019).

Jerrabomberra High School means the 3.25 hectare area within the **development footprint** where the Jerrabomberra High School will be built, enclosed by the light blue line in Attachment 2, identified in the legend as 'Jerrabomberra High School'.

Monitoring data means the data required to be recorded under the conditions of this approval.

Minister means the Australian Government Minister administering the **EPBC Act** including any delegate thereof.

New or increased impact means a new or increased environmental impact or risk relating to any **protected matter**, when compared to the likely impact of implementing the action management plan that has been approved by the **Minister** under condition 4, including any subsequent revisions approved by the **Minister,** as outlined in the *Guidance on 'New or Increased Impact' relating to changes to approved management plans under EPBC Act environmental approvals (2017).*

North Poplars BioBanking Agreement means the BioBanking Agreement ID number BA 310 for Poplars North BioBanking Site, for Robin Pty Ltd, made with the NSW Office of Environment and Heritage.

North Poplars Biobanking Site means the area coloured dark green in Attachment 1 and identified in the legend as 'North Poplars BioBanking Site'.

Plan(s) means any of the documents required to be prepared, approved by the **Minister**, implemented by the approval holder and/or published on the **website** in accordance with these conditions (includes action management plans).

Protected matter(s) means a matter protected under a controlling provision in Part 3 of the **EPBC Act** for which this approval has effect. Protected matters include **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland** ecological community, Hoary Sunray (*Leucochrysum albicans* subsp. *tricolor*), and **Golden Sun Moth***.*

Remainder of the North Poplars development footprint means the 8.71 hectare area of land in North Poplars represented by the solid blue shaded area in Attachment 2 described in the legend as 'Remainder of Development Footprint - North Poplars'.

Remainder of the South Poplars development footprint means the 31.56 hectare area in South Poplars represented by the pink shaded area in Attachment 2 described in the legend as the 'Remainder of Development Footprint - South Poplars'.

Retired means retirement of biodiversity credits under the *Biodiversity Conservation Act 2016 (NSW)*.

Sensitive ecological data means data as defined in the Australian Government Department of the Environment (2016) *Sensitive Ecological Data – Access and Management Policy V1.0.*

Shapefile means location and attribute information of the action provided in an Esri shapefile format. Shapefiles must contain '.shp', '.shx', '.dbf' files and a '.prj' file that specifies the projection/geographic coordinate system used. Shapefiles must also include an '.xml' metadata file that describes the shapefile for discovery and identification purposes.

South Poplars BioBanking Agreement means the BioBanking Agreement ID number BA 309 for Poplars South BioBanking Site, for Robin Pty Ltd, made with the NSW Office of Environment and Heritage.

South Poplars BioBanking Site means the area coloured light green in Attachment 1 identified in the legend as 'Poplars South BioBanking Site'.

Stage 1 of the Innovation Precinct means the 8.91 ha area enclosed by the yellow line identified in the legend as 'Stage 1 of the Innovation Precinct' in Attachment 2.

Suitably qualified person means a person who has professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.

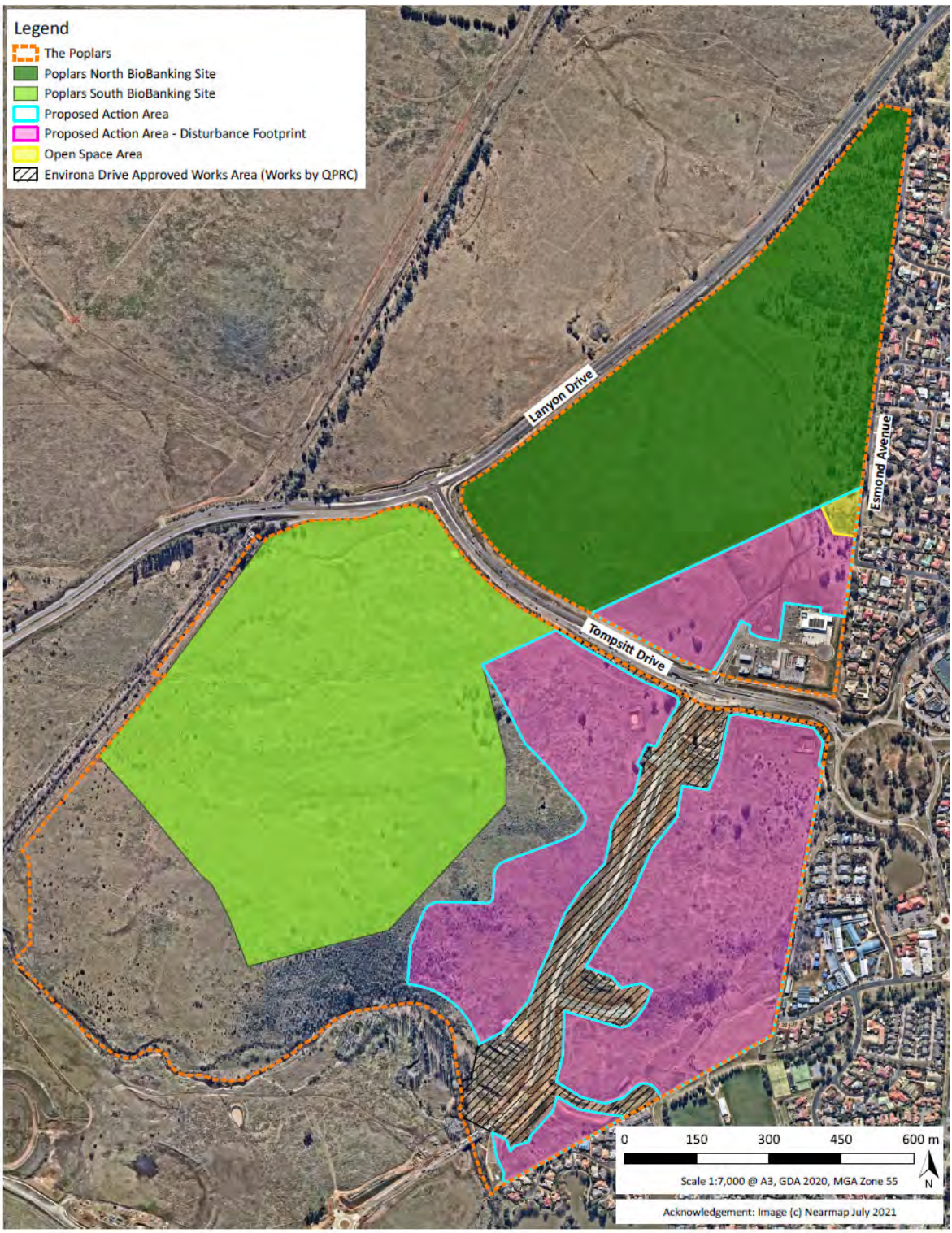
Website means a set of related web pages located under a single domain name attributed to the approval holder and available to the public.

Weed(s) means weed as defined in the *Australian weeds strategy 2017 to 2027.*

White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland is the critically endangered threatened ecological community of that name listed under the **EPBC Act** as represented by the two patches of blue hatching shown in Attachment 5 and described in the legend as 'EPBC Act Box-Gum Woodland'.

White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area means the 0.18 hectares of land containing **White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland**, **Hoary Sunray habitat** and **Golden Sun Moth habitat** represented by the area north of the existing dam with blue hatching and green shading shown in Attachment 3, and described in the legend as 'PCT1334 Zone1 - Canopy - Regen - NativeDom - Mod-HighDiversity (EPBC Act BGW)', 'Golden Sun Moth Habitat' and 'Hoary Sunray'.

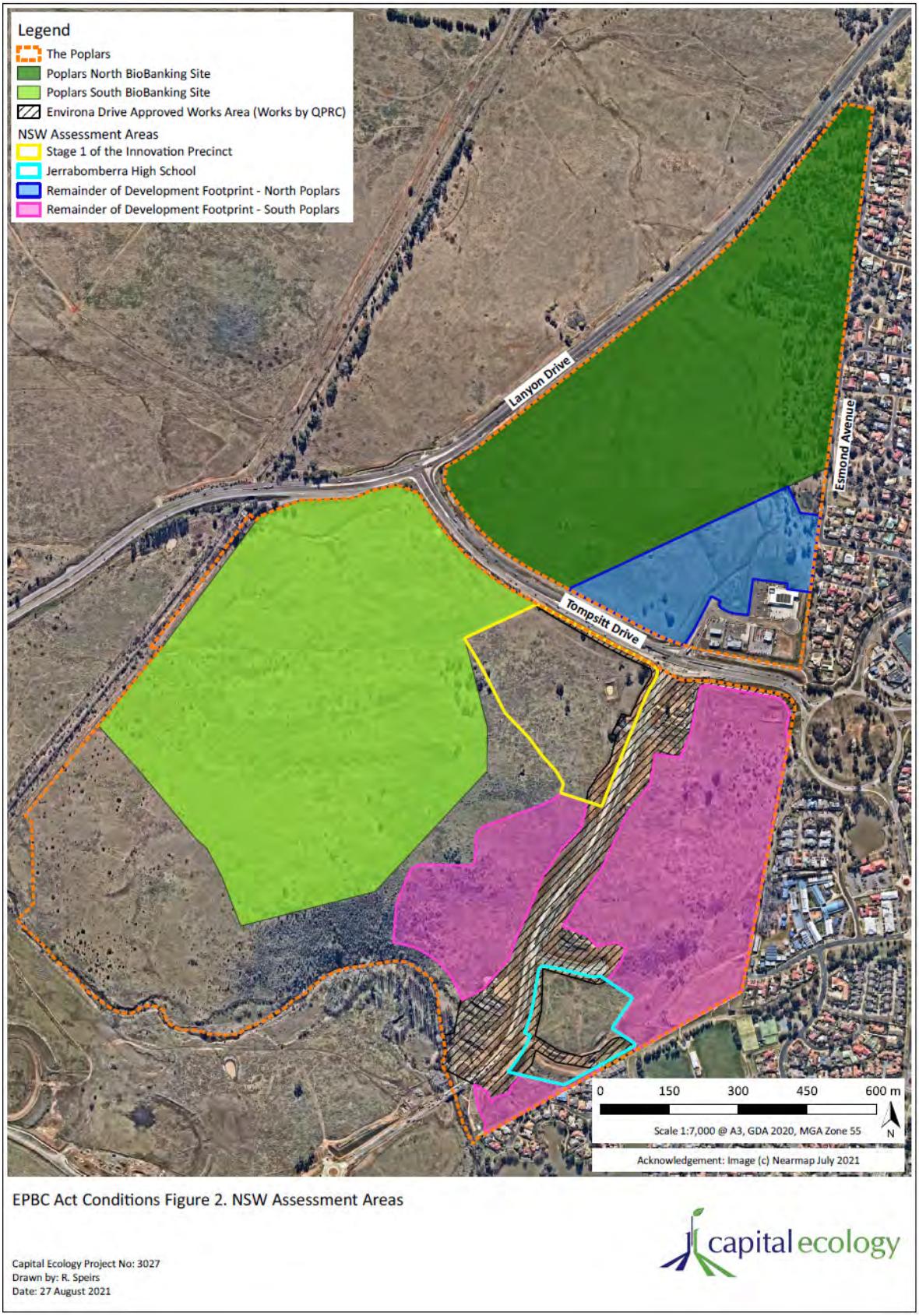
<u>Attachment 1</u>. The Poplars action area/development footprint, the White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area, biobanking sites, and surrounds.



EPBC Act Conditions Figure 1. "The Poplars", Proposed Action Area, and BioBanking Sites

Capital Ecology Project No: 3027
Drawn by: R. speirs
Date: 27 August 2021

Attachment 2. Location of the development stages; Jerrabomberra High School, Stage 1 of Innovation Precinct, the remainder of the North Poplars development footprint, the remainder of the South Poplars development footprint.



EPBC Act Conditions Figure 2. NSW Assessment Areas

Capital Ecology Project No: 3027
Drawn by: R. Speirs
Date: 27 August 2021

capital ecology

Attachment 3. Location of the White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area, Hoary Sunray, Golden Sun Moth habitat and the White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland.

Attachment 4. Golden Sun Moth Habitat in the Development Footprint, and the White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area.

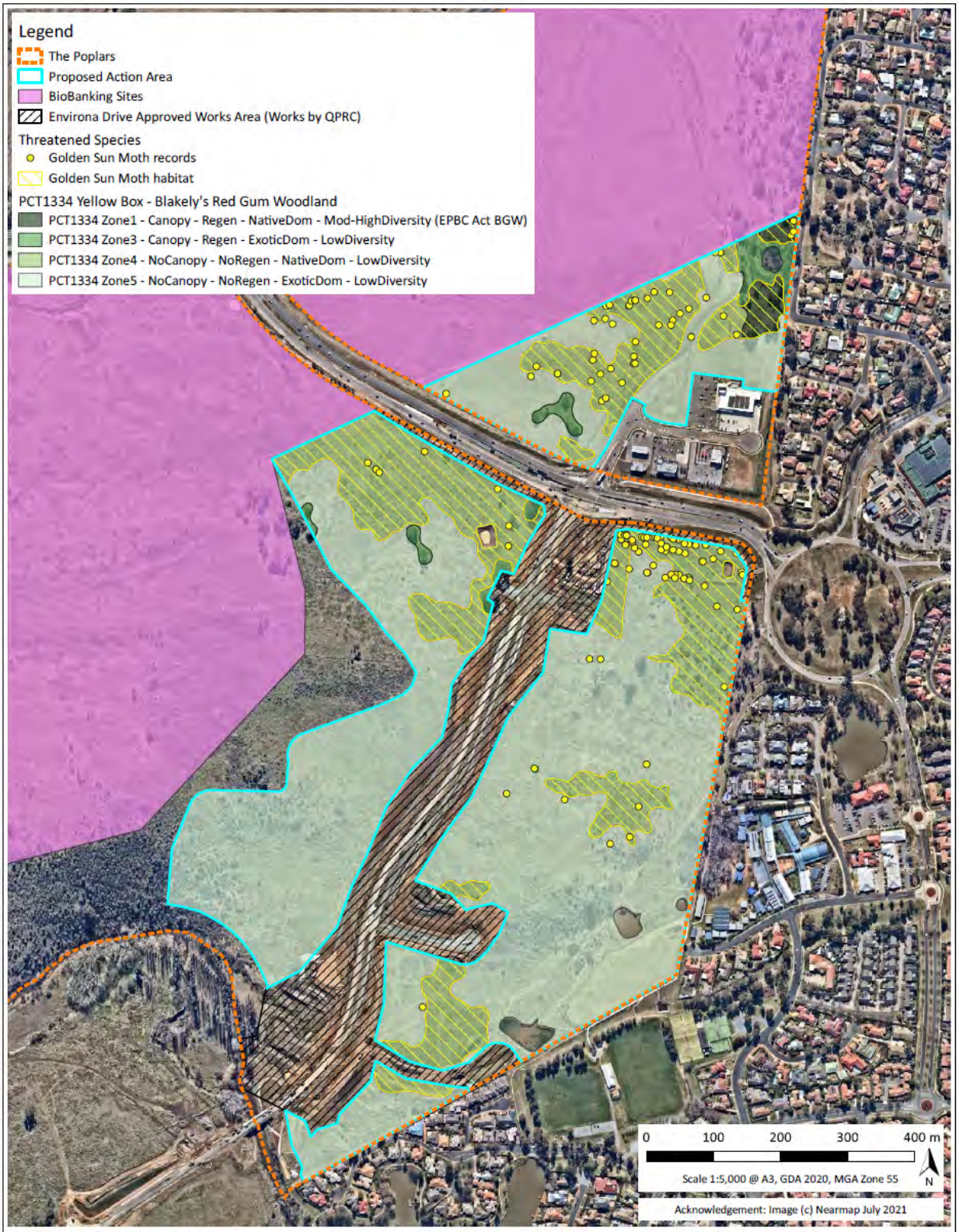


Figure 8. Golden Sun Moth Habitat in the Proposed Action Area

Capital Ecology Project No: 3027
Drawn by: R. Speirs
Date: 27 August 2021

capital ecology

<u>Attachment 5</u>. White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland in the Development Footprint, and the White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland retained area.

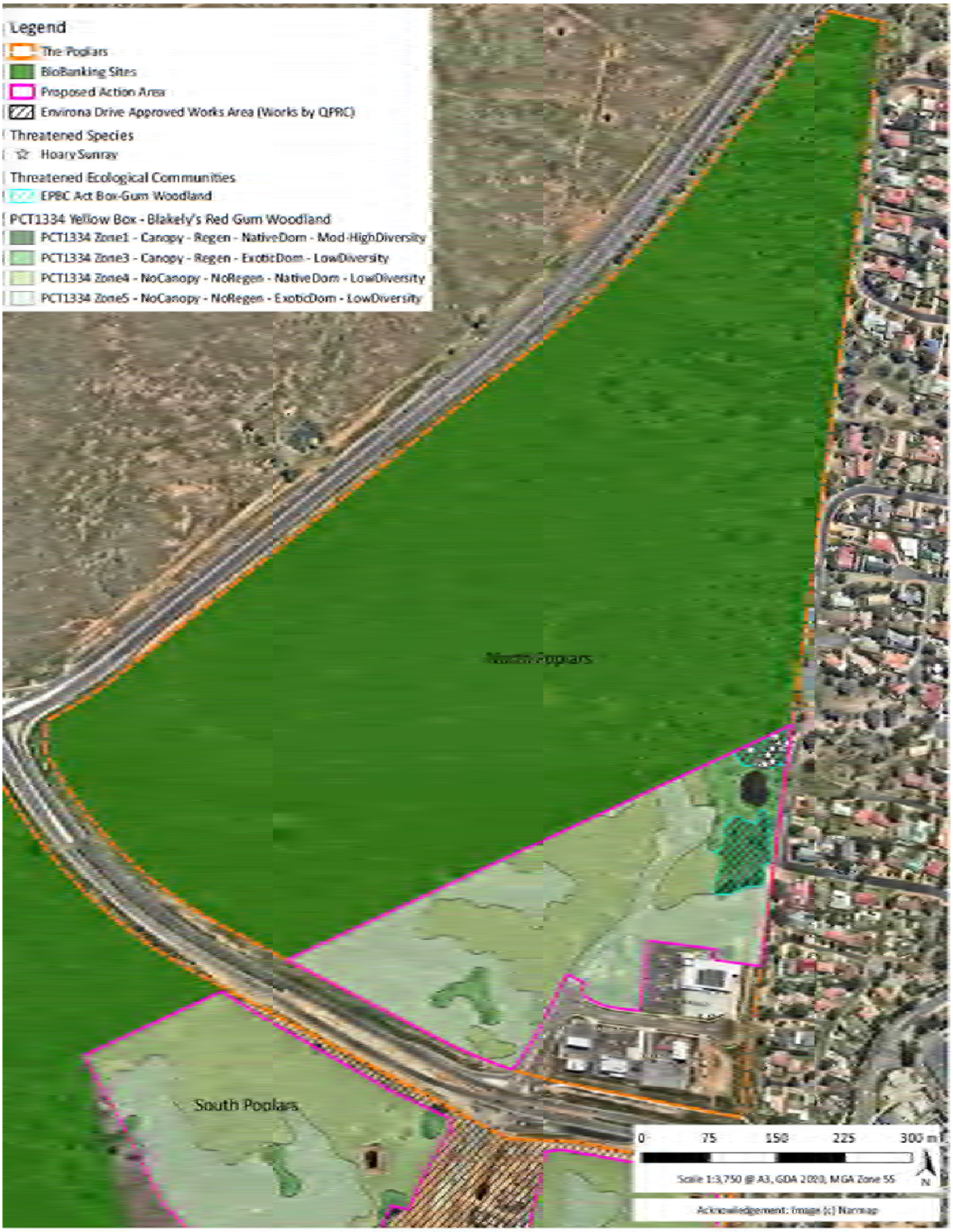


Figure 8. EPBC Act Box-Gum Woodland and Hoary Sunray Habitat in the Proposed Action Area

Capital Ecology Project No: 3027
Drawn by: S. Reid
Date: 26 March 2021

capital ecology

APPENDIX B. DECLARATION OF ACCURACY

DECLARATION OF ACCURACY

I declare that:

1. To the best of my knowledge, all the information contained in, or accompanying the *Poplars EPBC Act Construction Environmental Management Plan, V2.2, October 2021* is complete, current and correct.

2. I am duly authorised to sign this declaration on behalf of the approval holder.

3. I am aware that:

   a. Section 490 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence for an approval holder to provide information in response to an approval condition where the person is reckless as to whether the information is false or misleading.

   b. Section 491 of the EPBC Act makes it an offence for a person to provide information or documents to specified persons who are known by the person to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth) where the person knows the information or document is false or misleading.

   c. The above offences are punishable on conviction by imprisonment, a fine or both.

Signed

Full name

Christopher William Daly

Organisation

Project Manager, Black Mountain Construction Assurance Pty Ltd

Date

17 October 2021

Jerrabomberra High School

Aviation wildlife hazard assessment

Alison Rowell
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FEBRUARY 2022

Contents

Jerrabomberra High School aviation wildlife hazard assessment

Summary

The area surrounding the new Jerrabomberra High School site contains wildlife species that may pose a hazard to aircraft on the flight path south of Canberra Airport.

The construction of the school could result in the temporary attraction of small numbers of hazardous species. The finished school site should provide habitat for fewer hazardous species than the original and construction phases while providing minor potential attractions for other species. Mitigation measures are suggested to manage the above risks.

1. Project background

An Environmental Impact Statement (EIS) has been prepared for the development of the new Jerrabomberra High School (JHS) in NSW (Mecone 2021). Following submissions in response to the EIS, the Department of Planning, Industry and Environment (DPIE) requested the Department of Education to address the concern raised by Canberra Airport that the Aviation Assessment needs to be updated to address *'Guideline C – Managing Wildlife Strike Risk'* of the National Airports Safeguarding Framework (NASF), either through a wildlife assessment or by engaging a qualified Ornithologist to review/monitor potential bird attracting activities/plantings.

The NASF provides guidance on planning requirements for development that affects aviation operations, including building activity around airports that might penetrate operational airspace and/or affect navigational procedures for aircraft. Guideline C allows State/Territory and local government decision makers to manage the risk of collisions between wildlife and aircraft at or near airports where that risk may be increased by the presence of wildlife-attracting land uses by providing a risk ranking and mitigation advice for land uses within specified distances from airports. Schools are not specifically covered but associated features such as sports facilities and playgrounds have a wildlife attraction risk of moderate, with a requirement for this to be mitigated when new developments are proposed.

The current report is an aviation wildlife assessment with recommendations for reducing the risk of attracting wildlife potentially hazardous to aircraft during the construction and operation of the new high school.

2. The site and the development

The site set aside for JHS is about 4.5 ha, with housing and Lake Jerrabomberra to the south, playing fields to the south-east, and woodland, grassland and pasture to the east, north and west. Jerrabomberra Creek is west of the site and there are farm dams to the east and north-east (Figure 1).

The Architectural Design Report (Appendix 3 of the EIS, Tanner Kibble Denton 2021) shows that most of the undeveloped land to the north of the site is marked for future development (Innovation Precincts) with some land further west being incorporated into a grassland reserve.

The Biodiversity Development Assessment Report (BDAR, Appendix 9 of the EIS Capital Ecology 2021) shows that the vegetation on the JHS site included the remnant ground layer of a threatened native woodland community and exotic grassland with pasture species and weeds. At the time of the current field survey (February 2022) the site had been fenced from grazing for some time, although previously grazed by cattle and sheep. Some of the vegetation had been cleared and the rest was dominated by tall dense Phalaris (a pasture grass) with scattered native grasses and broad-leaved weeds.

The steeply sloping land in the east and south of the site which will not be built on under the current plan may be regenerated and re-established with native grassland plant species (Landscape Design Report, Appendix 4 of the EIS, CONTEXT Landscape Architecture 2021). The rest of the site will be contain buildings, paved sports/play areas, artificial grass, terracing, paths and a 'productive garden'. Landscaping will include native and deciduous exotic trees.

Figure 1. Jerrabomberra High School location

Shows developed suburbs, Lake Jerrabomberra south of site, playing fields to the east, chain of ponds/wetlands to the north-east, Jerrabomberra Creek and Environa Drive to the west and pasture/grassland to the north.

3. Wildlife hazard assessment framework

The NASF Guideline C ranks the risks of particular land uses within radial distances of 3, 8 and 13 km of airport runways. Figure 2 shows these radial distances in relation to Canberra Airport, with the JHS site being 7.5 km south of the southern end of the main runway, within the 3-8 km annulus. Guideline C does not specifically cover schools but associated features such as sports facilities and playgrounds have a wildlife attraction risk of Moderate, with a requirement for the risk at existing sites to be monitored and to be mitigated when new developments are proposed.

Canberra Airport has a Bird and Wildlife Hazard Management Plan (Capital Airport Group 2021) containing a Risk Assessment Matrix that ranks local wildlife species according to the risk they pose to aircraft. Canberra Airport has provided these documents and access to their extensive birdstrike and bird count data to assist in this assessment. The Risk Assessment Matrix provides a risk rating for hazardous species by assessing the **probability** of a species being struck by aircraft and the potential **consequences** of the strike.

The **probability** of being struck depends on past strike records, the numbers and time that the animals frequent or cross the Airport and approaches, and their behaviour (e.g. soaring/hunting over the runway or feeding on the ground/staying close to cover).

The **consequence** of an aircraft striking a species depends mainly on the weight of the animal and whether it occurs in groups and includes:

- aircraft destroyed/ lives lost
- substantial damage/injuries
- minor damage/flight affected
- negligible damage/no effect on flight
- no damage/effect on flight).

Serious strikes causing aircraft damage that have occurred on the southern approach to Canberra Airport include Black Swans and a Great (Black) Cormorant ingested into aircraft engines, and several strikes involving Wedge-tailed Eagles. Wood Ducks and Masked Lapwings are also often struck when they move onto the airport at night. There is little habitat to attract flying-foxes to the airport itself but they have been seen moving east through the southern approach after sunset and are occasionally struck.

Nearby areas which may provide habitat for some hazardous wildlife include Lake Jerrabomberra, the David Madew playing fields, surrounding suburbs (with parks and ponds), nearby pastures, native grasslands and woodlands and the ACT Mugga Lane waste facility (which services Queanbeyan-Palerang). More distant waterbird habitats include the Molonglo River Corridor and associated wetlands to the north-west and Googong Reservoir to the south-east.

Any changes at the JHS site that may increase the numbers or movement of hazardous wildlife require mitigation during the construction and operation of the school.

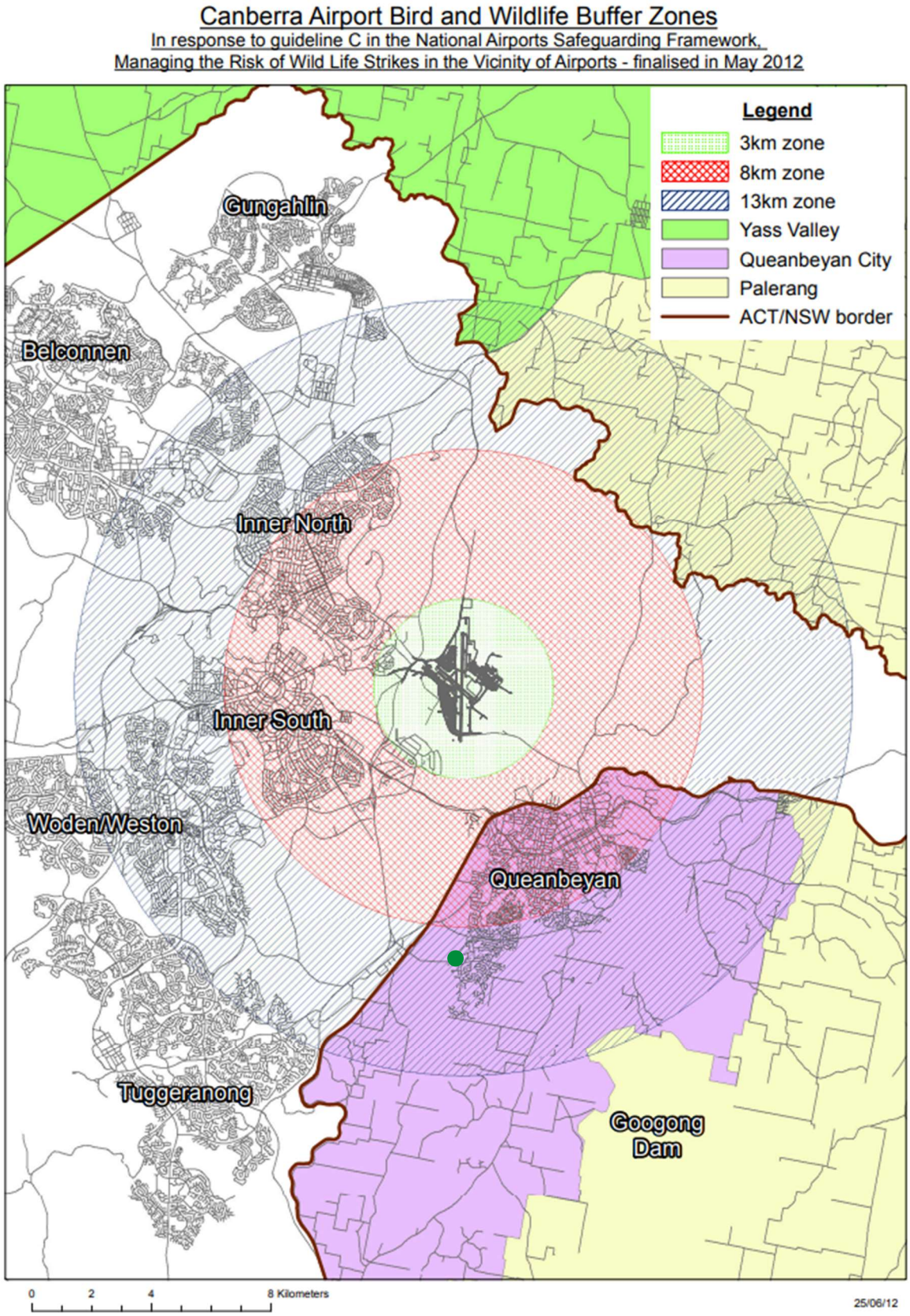

Figure 1. Wildlife risk zones near Canberra Airport.

Jerrabomberra High School site

4. Wildlife survey methods

The desktop survey included:

- eBird online data - eBird documents the presence or absence of species, as well as bird abundance through checklist data submitted by members. Data submitted in the last 10 years for species of concern in areas south of Canberra Airport and within 10 km of the JHS site were examined.
- Atlas of Living Australia (ALA) online data - ALA is a collaborative digital project that collates Australian biodiversity data from multiple sources. Occurrences of selected species within 5-10km of the JHS site were examined.
- publications of the Canberra Ornithologists Group (COG) and their chatline archive.
- data provided by Canberra Airport including wildlife hazard assessments and their wildlife strike database.
- National Capital Authority data on the Grey-headed Flying-fox camp at Commonwealth Park (Ecosure 2019).

The above sources were consulted to assess the existing wildlife hazard to aircraft in the area south of Canberra Airport, and to show the potential for any increased hazard due to wildlife in the vicinity being attracted to the JHS site and through the southern approach to Canberra Airport during and after development.

The JHS site and the surrounding area was surveyed on foot for six hours on 8 February 2022, searching for wildlife and potential habitats. Surveys carried out by this consultant in December 2021 for another project west of Environa Drive provided additional wildlife records.

5. Wildlife survey results and implications

All wildlife species for the JHS site and surrounding areas recorded in the desk and field survey were noted. The data for those species that have a Canberra Airport risk rating of Extreme, Very high, High or Moderate are collated in Appendix 1. A summary of the survey results is presented in Table 1.

Lake Jerrabomberra and the associated urban ponds to the north-east provide the most local habitat for hazardous bird species, with large numbers of waterbirds often recorded there. Nine Australasian Darters observed circling over and perching beside the water bodies in February 2022, and there was evidence of recent breeding by Black Swans, Dusky Moorhens and Eurasian Coots. A record of 150 White Ibis on jetties and the island in Lake Jerrabomberra from 2021 carried a note by the observer that the site could become a roost site given that other known roosts had been recently abandoned. In February 2022 bird droppings on jetties and a solar panel raft and scaring devices (models of owls and hawks) placed on some jetties suggested that perching by large birds remains a problem.

No other potentially hazardous species that were not already in the Risk Rating Matrix and are likely to be affected by the development were recorded. For example, three Australian Pelicans were recorded at Lake Jerrabomberra in 2018 and large numbers (500-1000) of Eurasian Coots have been recorded at Googong Reservoir and Fyshwick Sewage Ponds (ACT), but the movements and distribution of these species will not be affected by the JHS development as it contains no water bodies.

The JHS site would originally have supported only low numbers of hazardous species due to its small size and the mostly well-drained treeless habitat and densely vegetated drainage line. Most species originally present are likely to have their numbers reduced during construction and operation of JHS due to loss of habitat and increased human disturbance.

Some birds may at times be attracted to the construction site to feed on prey items exposed by turning of soil, to temporary ponding caused by interrupted drainage and/or to waste foodstuffs (if not secured). These include Australian (White) Ibis, Australian Magpie, Masked Lapwing, Australian Wood Duck, Little Raven and Australian Raven. Feral (and native Crested) Pigeons and Wood Ducks may feed on grassed verges after seeding. Attraction of Wood Ducks, Magpies, Galahs, Feral Pigeons, Australian Ravens, Little Ravens and Magpie-larks to the JHS and nearby construction sites was observed in February 2022 (see photographs). At the JHS site is this is not expected to add significantly to aircraft hazards as birds are likely to be attracted for short periods and to be making low-level flights from local populations, and the construction site will be small compared to others nearby. An exception would be if Australian Ibis visited as they could fly higher through the flight path on their way from the Mugga Lane tip. Large birds such as these often circle on thermals to gain height before making longer movements. Mitigation measures are suggested in Section 6.

The landscape design appears to include little if any irrigated mown grass and, if implemented, this would minimise foraging habitat for a number of species of concern (Wood Ducks, Straw-necked Ibis, Australian Magpie, Masked Lapwing, Australian Raven, Magpie-lark). There are no playing fields and one small play area will use artificial grass. The use of unirrigated native grasses has been suggested for perimeter buffer plantings and to rehabilitate the unused southern and eastern slopes of the site and this should attract little wildlife of concern.

The suggested tree planting list for amenity plantings (CONTEXT Landscape Architecture 2021) includes some undesirable species such as American Black Walnut *Juglans nigra,* and Chinese Pistachio *Pistacia chinensis* and Pin-oak *Quercus palustris*. Sulphur-crested Cockatoos occur in mobile flocks and feed on the fruits of these trees, as may Little Corellas which are also common in the area. The landscape architecture report also says that 'orchards will contain endemic, native and exotic species to be used as fresh produce in the food tech classes', and it should be noted that some fruit trees may attract flying-foxes and cockatoos if not netted.

Some architectural design features can inadvertently provide increased nesting and perching sites for Feral Pigeons and could increase their numbers in a district. Features which could facilitate this are the low-pitched roofs, pierced and folded metal screens mounted out from the building or over external stairs, articulated façade which may provide extra ledges and covered walkways/spaces between buildings. Pigeons could also take advantage of discarded food from school lunches or feeding by students. In addition, minimising Feral Pigeon numbers is desirable for health and safety due to the risk of contamination with faecal material and parasites and their accumulation of dry nesting material which can pose a fire hazard or block downpipes.

Table 1. Summary of wildlife survey results and implications

(blue entries indicate potential increases in hazard, addressed in Section 6, Mitigation measures)

Species	Risk Rating (Airport)	Habitat/records in vicinity (within ca 10 km of JHS site)	Potential effect during JHS construction	Potential effect of JHS operation
Galah *Eolophus roseicapilla*	Extreme(>9 birds) Very high (<10)	Occurs at and around site, common in grassland, woodland, parks, suburbs	Fewer likely due to vegetation clearing and human disturbance	Neutral - reduced foraging areas, increase in perching sites
Australian Wood (Maned) Duck *Chenonetta jubata*	Very high	Numerous in wetlands and irrigated grasslands around site	Small numbers may be attracted to temporary ponding or to feed on seeds/shoots after seeding of verges	Numbers likely to be reduced due to lack of ponds and irrigated grassland
Straw-necked Ibis *Threskiornis spinicollis*	Very high	Occasional in small numbers around site	Fewer likely due to vegetation clearing and human disturbance	Numbers likely to be reduced due to lack of ponds and irrigated grassland
Wedge-tailed Eagle *Aquila audax*	Very high	Frequent records of 1-2 birds soaring in area	Less likely to occur due to human disturbance	Less likely to occur due to loss of foraging habitat
Little Eagle *Hieraaetus morphnoides*	Very high	Occasional records of 1-2 birds soaring in area	Less likely to occur due to human disturbance	Less likely to occur due to loss of foraging habitat
Grey-headed Flying-fox *Pteropus poliocephalus*	Very high	A few records from Queanbeyan/Jerrabomberra mainly wildlife rescues. Known large colony 12km to north-west at Commonwealth Park (ACT)	None, no habitat present	Small numbers could feed in landscaping/garden trees
Black Swan *Cygnus atratus*	High	2-6 birds occasionally recorded at Lake Jerrabomberra and local ponds	None, no habitat present	None, no habitat created or lost
Australasian Darter *Anhinga novaehollandiae*	High	Up to nine birds observed on and over Lake Jerrabomberra	None, no habitat present	None, no habitat created or lost
Eastern Grey Kangaroo *Macropus giganteus*	High	Present at JHS site, common in surrounding grassland and occasional in parkland	Numbers will be reduced by vegetation clearing	Numbers will be reduced by vegetation clearing, no effect on population near Airport
Wombat *Vombatus ursinus*	High	Present at JHS site, currently common in surrounding pasture and along Jerrabomberra Creek	Fewer likely due to vegetation clearing and human disturbance	Numbers will be reduced by vegetation clearing, no effect on population near Airport
Great Cormorant *Phalacrocorax carbo*	High	Small numbers at Lake Jerrabomberra	None, no habitat present	None, no habitat created or lost
Australian (White) Ibis *Threskiornis molucca*	High	Some at nearby wetlands, high of 150 on island/ jetties at Lake Jerrabomberra 6/2021. Many at Mugga Lane tip 4km west of JHS (e.g. 300, 1/2022)	Small numbers could be attracted to turned earth/temporary ponding or workers' food waste	Occasional birds could be attracted if food waste not correctly disposed of at school site
Australian Magpie *Gymnorhina tibicen*	High	Common species in all habitats around JHS. 31 seen feeding on freshly-graded soil onsite in Feb 2022.	Groups may be attracted to feed on invertebrates in disturbed soil. Likely to be local birds only	Neutral - small numbers could nest in landscaping trees, but most onsite foraging habitat will be lost
Masked Lapwing *Vanellus miles*	High	Small numbers present around water bodies and in irrigated grassland	Small numbers could be attracted to disturbed soil and ponding at night.	Not likely to be present due to lack of habitat

Table 1. (continued)

Species	Risk Rating (Airport)	Habitat/records in vicinity (within ca 10 km of JHS site)	Potential effect during JHS construction	Potential effect of JHS operation
Little Raven *Corvus mellori*	High	Flocks occur in area, especially in winter.	Groups may be attracted to feed on invertebrates in disturbed soil.	Not likely to be present due to lack of habitat
Australian Raven *Corvus coronoides*	High	Pairs and small family groups occur in grassland, woodland and parklands	Small numbers may be attracted to feed on invertebrates in disturbed soil or to workers' food waste	Numbers not likely to increase
Little Corella *Cacatua sanguinea*	High	Flocks occur in parklands and tree plantations	No likely effect	Small numbers may use landscaping trees
Sulphur-crested Cockatoo *Cacatua sulphurea*	High	Flocks occur in woodlands, parklands and tree plantations	No likely effect	Small numbers may use landscaping trees
Pacific Black Duck *Anas superciliosa*	High	Small numbers occur in Lake Jerrabomberra and local ponds/dams	No likely effect	Disturbance may reduce use of pond on eastern boundary
European (Red) Fox *Vulpes vulpes*	High	Scats seen on JHS site, along Jerrabomberra Ck, on Environa Dr verge	Local foxes may investigate construction site at night	Fewer likely due to vegetation clearing but no effect on population near Airport
Silver Gull *Chroicocephalus novaehollandiae*	High (>9 birds) Moderate (<10)	Occasional at Lake Jerrabomberra	No likely effect	No likely effect
Yellow-tailed Black-Cockatoo *Calyptorhynchus funereus*	High	Small groups occur in forests and tree plantations	No likely effect	No likely effect unless many pine trees planted
Little Black Cormorant *Phalacrocorax sulcirostris*	High	Occasional at Lake Jerrabomberra	None, no habitat present	None, no habitat created or lost
Whistling Kite *Haliastur sphenurus*	High	Few records nearby, more around lower Jerrabomberra Ck and Lake Burley Griffin (ACT) 8-10km to NW	No likely effect	None, no habitat created or lost
Brown (European) Hare *Lepus capensis*	High	Some may be present in denser grasslands to the west	Less likely to occur due to vegetation clearing and human disturbance	Fewer likely due to vegetation clearing but no effect on population near Airport
Rock Dove (Feral Pigeon) *Columbia livia*	High (>9 birds) Moderate (<10)	Small numbers recorded at and near site	Flocks may visit for a short time after seeding of road and path verges	May increase, design of buildings could offer nesting spaces and playground feeding could occur
Magpie-lark *Grallina cyanoleuca*	Moderate	Small numbers occur throughout woodland, grassland, parkland, suburbs and playing fields	Small numbers could be attracted to feed in disturbed or flooded soil	Neutral - some could use landscaping trees but foraging habitat will be lost
White-faced Heron *Egretta novaehollandiae*	Moderate	Occasional around wetlands	Rare bird could be attracted to feed on disturbed or flooded soil	None, no habitat created or lost
Australian Kestrel *Falco cenchroides*	Moderate	Occasional in rural grasslands/pastures and woodlands	Less likely to occur due to vegetation clearing and human disturbance	Less likely to occur due to loss of foraging habitat

6. Mitigation measures

During the construction phase risks can be reduced by:

- Minimising ponding from interruptions to drainage by appropriate shaping, using silt barriers to facilitate drainage without erosion
- Ensuring that waste foodstuffs are not accessible to birds on the construction site by signage and provision of secure bins
- Using direct seeding rather than spray-grassing for planting verges of road, bus zone, drop-off area and paths.

During the operational phase risks can be reduced by:

- Limiting the use of trees which attract hazardous bird species and flying-foxes or replacing them with other species (final list should be checked by this consultant or another qualified person)
- Netting any animal-attracting fruiting trees in the productive garden to reduce attraction of Grey-headed Flying-foxes and Cockatoos
- Using secure bins for food waste (see photographs) that cannot be accessed by birds and animals. This also increases amenity and reduces health risks from flies and rodents
- Discouraging feeding of wildlife as part of the school's operational policy
- Reassessing building features that may allow nesting/roosting of Feral Pigeons and modifying them to prevent this. This will also improve health, safety and amenity by reducing use of the buildings by other introduced species such as Common Starling, Common Myna and House Sparrow.

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Photograph 1. Part of flock of 30 Magpies feeding on recently graded soil at JHS site.

Photograph 2. Part of flock of 25 Wood Ducks at temporary pond and earth banks at construction site on Environa/Tompsitt Drive.

Photograph 3. Small group of Wood and Black Ducks in pond on eastern boundary of JHS site.

Photograph 4. Small group of Wood Ducks on David Madew playing fields adjacent to JHS site. (JHS project does not include additional playing fields)

Photograph 5. Jerrabomberra, secure bin at fast food outlet.

Photograph 6. Jerrabomberra, fast food outlet bin with contents accessible to wildlife.

Appendix 1. Risk ratings, records and potential for hazardous species at and around JHS site

Species	Risk rating (Canberra Airport)	Jerrabomberra HS site		Environa Drive		Playing fields		Lake Jerrabomberra		Jerrabomberra ponds		Surburban area		Surrounding pasture		Comments
		Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	
Galah (>9 birds)	Extreme										28	2				Development unlikely to increase risk (foraging areas removed)
Galah (<10 birds)	Very high	2					21			2						As above
Aust. Wood Duck	Very high			47		14	38	3	55	22	46			28		Development unlikely to increase risk (no ponds or irrigated grass areas added)
Straw-necked Ibis	Very high								6							Development unlikely to increase risk (no wet grassland areas added)
Wedge-tailed Eagle	Very high								2		1			1		Development will not increase risk (foraging area removed)
Little Eagle	Very high															Development will not increase risk (foraging area removed)
Grey-headed Flying-fox	Very high															Appropriate landscaping necessary to prevent increased risk.
Black Swan	High							3	6		2					Development will not increase risk (no wetlands or irrigated grasslands added)
Australasian Darter	High							9	3							Development will not increase risk (no wetlands added)
E Grey Kangaroo	High	√		√		√						√		√		Not relevant (too far from airport, and existing habitat will be removed)
Wombat	High	√		√		√						√		√		Not relevant (too far from airport, and existing habitat will be removed)
Great Cormorant	High								8							Development will not increase risk (no wetlands added)

Appendix 1 (continued)

Species	Risk rating Canberra Airport	Jerrabomberra HS site		Environa Drive		Playing fields		Lake Jerrabomberra		Jerrabomberra ponds		Surburban area		Surrounding pasture		Comments
		Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	
Aust. White Ibis	High	6 (o/h)						1	150		1					Food waste control necessary during construction. Final development unlikely to increase risk (no grasslands/wetlands added). 150 on island and jetties at Lake Jerrabomberra June 2021, could become major roost.
Australian Magpie	High	31				2	9	5	20	1	9	1		3		Development unlikely to increase risk (some potential nest trees added but foraging areas removed)
Masked Lapwing	High						3	2	4	2	2					Development unlikely to increase risk (no additional short grassland)
Little Raven	High								7					7		Potential for attraction of small numbers during construction earthworks
Australian Raven	High					1	2		7		3			2		Potential for attraction of small numbers during construction earthworks or to exposed food waste.
Little Corella	High					1	4		50	72	68					Potential for trees in landscaping to support small numbers
Sulphur-crested Cockatoo	High						4	2	40	2	32					Potential for trees in landscaping to support small numbers
Pacific Black Duck	High	4					1	10	31	5	9					Development will not increase risk (no wetlands added)
European Red Fox	High	**√**		**√**										**√**		Not relevant (too far from airport)
Silver Gull (>9 birds)	High								30							Development will not increase risk (no habitat added)
Yellow-tailed Bk-Cockatoo	High															Development unlikely to increase risk (with appropriate landscaping)