

Our Ref: 80220021:JO'G Contact: John O'Grady

8 October 2020

Department of Planning, Industry & Environment, Green and Resilient Places Division Locked Bag 5022

PARRAMATTA NSW 2124

VIA DPIE Submissions Portal

SUBMISSION TO THE EXHIBITION OF THE DRAFT CUMBERLAND PLAIN CONSERVATION PLAN

We act on behalf of Langway Pty Ltd, owners of land at in Deposited Plan Badgerys Creek (the Subject Land).

Our submission to the draft Cumberland Plain Conservation Plan maintains that categorisation of the Subject Land in its entirety as *Non-Certified – Avoided for Biodiversity* is inconsistent with its true biodiversity values and that the categorisation should be reviewed in order to reflect the actual biodiversity values of the land as described herein. The appropriate categorisation of the land is *Certified*. A second potentially appropriate categorisation would be *Exempt*.

We further contend that the recent zoning of the land as Environment and Recreation under *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020* (SEPP (Western Sydney Aerotropolis) is inappropriate having regard to the location, the condition of the land and the existing active development approvals that apply.

1.1 The Subject Land

The Subject Land covers a total area of 101,000m² (10.1 hectares) (Table 1-1) and is regular in shape with a boundary width of approximately 180 metres and depth of 550 metres (Figures 1-1 & 1-2). It has a street boundary to to its south and addresses an unmade road to its east.



Table 1-1 Subject Land

Cardno (NSW/ACT) Pty Ltd ABN 95 001 145 035

Level 9 - The Forum 203 Pacific Highway St Leonards NSW 2065 Australia

Phone +61 2 9496 7700 Fax +61 2 9439 5170

www.cardno.com







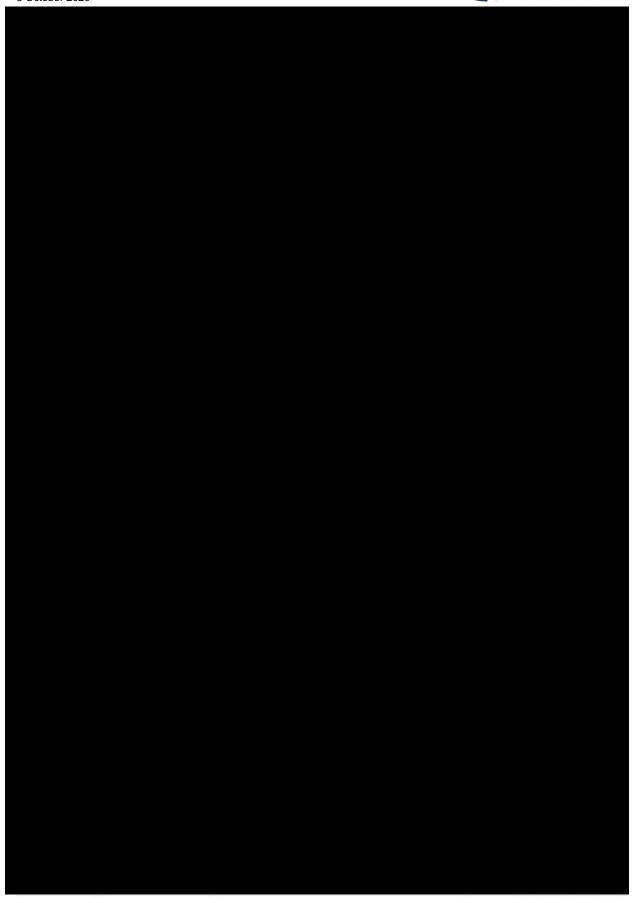


Figure 1-1 Site location (edged red). Source: Nearmap



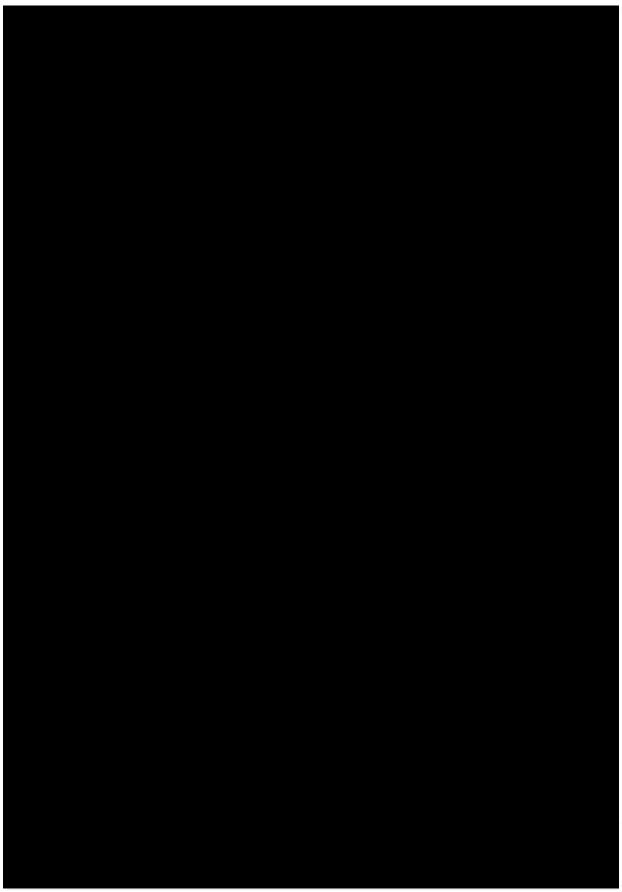


Figure 1-2 Local aerial – Subject Land edged red. Source: Nearmap



1.2 Previous submissions

In February and March 2020, two separate submissions were made on behalf of the landowner to the exhibition of the Stage 2 Western Sydney Aerotropolis Planning Package. In summary, the submissions made the following conclusion:

- That the Subject Land is not suitable for the purpose of a regional park or for biodiversity conservation and does not have the ecological values needed to justify applying the aims of the Environmental and Recreation zone.
- That the Subject Land is suitable for Enterprise purposes in that it is not constrained by flood or steep gradient, does not have heritage significance and is sized, configured and located to accommodate the industrial and commercial land uses envisaged by the Enterprise zone.
- That the proposed zoning of the Subject Land as indicated in the draft mapping appended to the Western Sydney Aerotropolis SEPP Discussion Paper should be amended from Environment and Recreation to Enterprise.

1.3 The gazetted State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

The submissions made to the exhibition of the Stage 2 Planning Package with respect to the Subject Land were not taken up and the land is zoned *Environment and Recreation* under the SEPP (Western Sydney Aerotropolis) (Figures 1-3 & 1-4).



Figure 1-3 Land zoning in the SEPP (Westerns Sydney Aerotropolis) 2020 (Land Zoning Map, Sheet LZN_001)



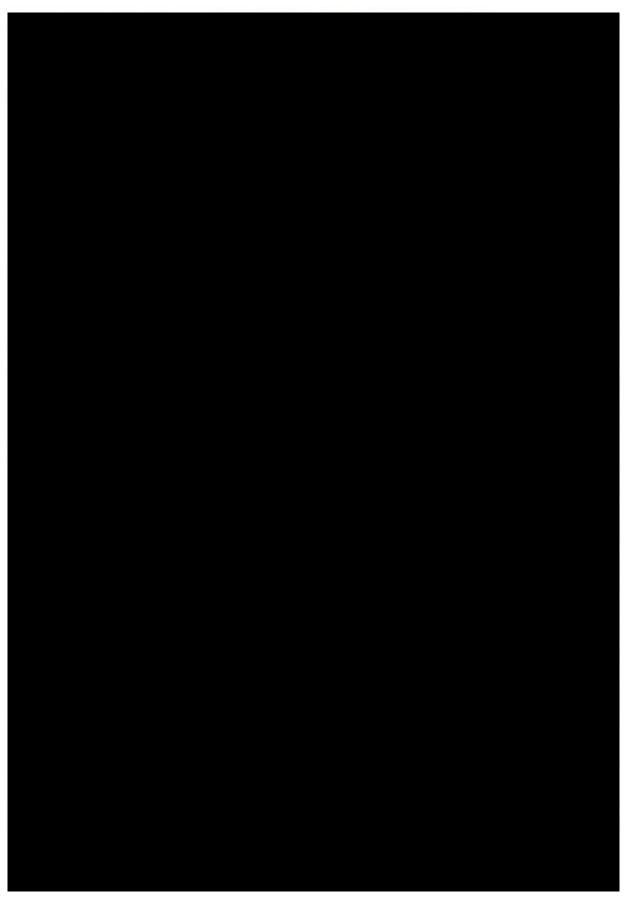


Figure 1-4 Land zoning in the SEPP (Westerns Sydney Aerotropolis) 2020 (detail extracted from Land Zoning Map, Sheet LZN_001)



1.4 This submission

This submission supports the arguments and conclusions in the previous submissions with respect to the zoning of the Subject Land and develops commentary and recommendations on the draft Cumberland Plain Conservation Plan with respect to its proposal to categorise the Subject Land as *Non-Certified – Avoided for Biodiversity*.

The submission maintains:

- That the categorisation of the land as Non-Certified Avoided for Biodiversity is inconsistent with its biodiversity values.
- That the land is subject to an operative development consent that allows removal of vegetation within the footprint of approved future buildings on the site.
- That the assessment process leading to draft categorisation of the land as Non-Certified requires review as it has resulted in inaccurate conclusions with respect to biodiversity values across the Subject Land.
- That the land should be categorised as either Certified or Exempt in the adopted Cumberland Plain Conservation Plan.

Each of these contentions is explained below.

1.5 Draft Cumberland Plain Conservation Plan (draft CPCP)

1.5.1 Purpose and structure

The NSW DPIE describes the draft Cumberland Plain Conservation Plan (DPIE 2020a) as 'a plan to support growth and biodiversity conservation in the Western Parkland City'. The draft CPCP has identified areas for growth and land for conservation. Once approved, the CPCP will be implemented by DPIE through a number of mechanisms.

The overarching purpose of the Plan is to support biodiversity and growth in the Western Sydney Parkland City by protecting the regions important conservation values. It will do this through the creation of new reserves, conservation areas and green spaces.

In essence the plan involves delivery of a conservation program to offset impacts of new development within the Western Parkland City on local and regional biodiversity.

The structure of the draft Plan is summarised in the diagram at Figure 1-3.

Cardno (NSW/ACT) Pty Ltd



Draft Cumberland Plain Conservation Plan This is the overarching plan that sets out how strategic conservation planning in Western Sydney will be delivered until 2056 and beyond Sub-Plan A: Sub-Plan B: **Conservation program** Koalas and implementation This sub-plan outlines how This sub-plan outlines how the conservation program the conservation program will support the local koala will be implemented and evaluated over the life of population and how it will be the plan implemented over the life of the plan

Figure 1: Draft Cumberland Plain Conservation Plan and Sub-plans

Figure 1-5 Structure of the draft Cumberland Plan Conservation Plan (Source: DPIE 2020)

The Subject Land does not include Koala Habitat so Sub-Plan B is not relevant to this submission.

1.5.2 Proposal for the Subject Land

The draft CPCP proposes to categorise the Subject Land in its entirety as *Non-Certified – Avoided for Biodiversity* (Figure 1-6). This categorisation is in response to the zoning of the entire land parcel as *Environment and Recreation* in the SEPP (Western Sydney Aerotropolis). The land surrounding the Subject Land is categorised as either *Certified* (to its north and west) or *Exempt* (to its East).



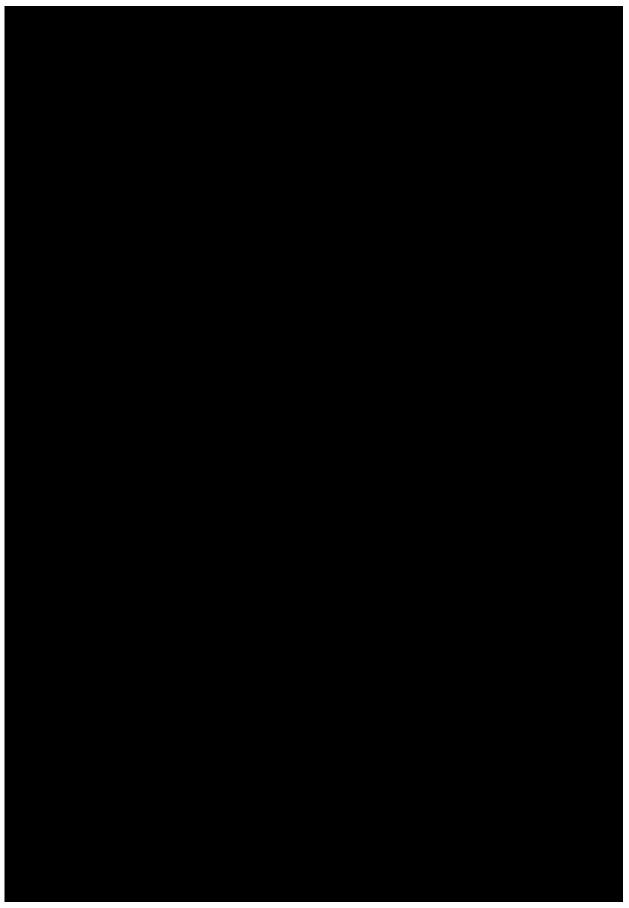


Figure 1-6 Western Sydney Aerotropolis Land Categories – subject land edged red (Excerpt draft Cumberland Plain Conservation Plan – Sub plan A)



1.6 Commentary on the proposed categorisation of the land.

1.6.1 Biodiversity value of the Subject Land

In August 2020, Ecological Consultants Australia Pty Ltd prepared a report on an Ecological Investigation into the Subject Land. The report (a copy of which is attached to this submission) was essentially commissioned to provide an opinion on the impacts on biodiversity values of the removal of vegetation that had occurred on the land. The report included commentary on the biodiversity values of the Subject Land and concluded that the site was highly disturbed due to works associated with the development approval for a chicken abattoir and processing plant along with other works.

The report also included a diagram that overlaid the approved plan for the chicken abattoir and processing plant onto a recent aerial photo of the site. This diagram, copied into this submission at Figure 1-7, identified 8.59 ha of the site as Disturbed Area, subject to the development approval. The remaining 1.51 ha was identified as retained vegetation.

Of relevance to this submission, the upshot of the Ecological Investigation is that the Subject Land in its current state exhibits minimal biodiversity value.



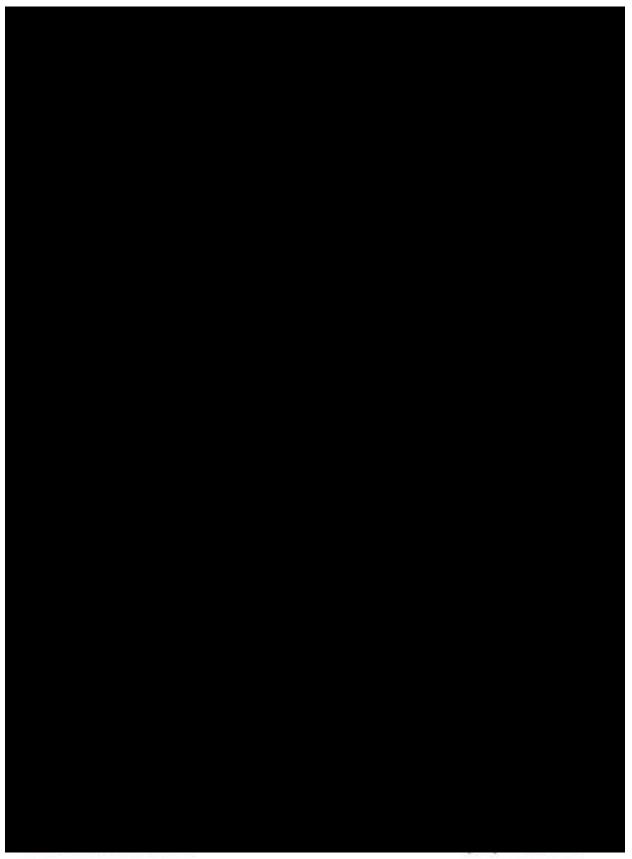


Figure 1-7 Overlay of approved onto the Subject Land (Source: Ecological Consultants, Australia, August 2020)



1.6.2 Existing operative development consent

The Subject Land benefits from an existing operative development consent.

On 28 August 1996, Penrith City Council granted Deferred Commencement consent to erection and operation of a Poultry Processing Facility on the Subject Land.

The Deferred Commencement conditions were satisfied and the DA was substantially commenced within the two year timeframe required by the Consent.

On 26 January 2008, Council confirmed on its letterhead that the approved development had been substantially commenced and that the development had been "secured".

Our opinion with respect to this development approval is that it remains valid in accordance with Division 13 of the *Environmental Planning and Assessment Regulation*, 2000.

To support this opinion, copies of the following documents are attached to this submission:

- The stamped approved plans;
- Letter confirming that the Conditions of Deferred Commencement have been satisfied and the development consent is operational 3 October 1997; and
- Letter advising that substantial commencement has occurred and the development has been secured 22 January 2008.

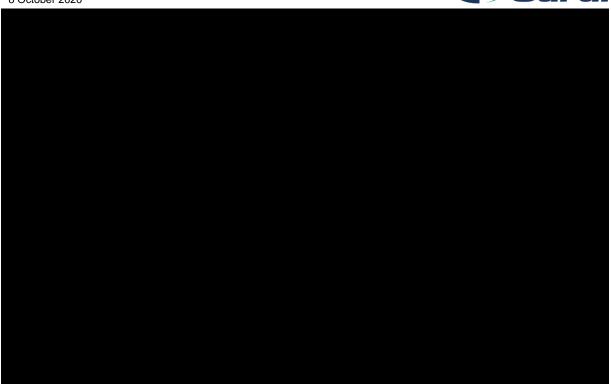
Substantial work has been carried out under the operative consent, including land clearing and construction of footings for some of the proposed buildings. Other vegetation remaining on the site and within the footprint of the approved development is also subject to the approval and can be lawfully cleared.

1.6.3 Vegetation cover

It is unclear what processes were followed by DPIE to inform the decision to zone the entire landholding as *Environment and Recreation* and to consequently categorise the land as *Non-Certified – Avoided for Biodiversity* in the draft CPCP.

To clarify the level of vegetation cover on the land in the past and currently, Cardno has carried out a review of historical aerial photography of the site (Figure 1-8). The aerials indicate that the land was substantially vegetated until late 2015. After that time, progressive land clearing was carried out. The August 2020 aerial illustrates that the land is now almost completely cleared.





December 2009 – land substantially vegetated December 2015 - land remains substantially

Source: Nearmap

December 2015 - land remains substantially vegetated. Source: Nearmap



February 2017 – northern portion of land cleared

August 2020 – current condition – land almost completely cleared.

Source: Nearmap Source: Nearmap

Figure 1-8 Historical aerial photography of Subject Land.



1.6.4 Criteria for categorisation of land

The draft CPCP and the accompanying State Environmental Planning Policy for Strategic Conservation Planning – Explanation of Intended Effect provide the following criteria for categorising land

1.6.4.1 Certified land

Land that has been found to be capable of urban development and can be developed for urban purposes without the need for further site by site assessment or offsetting. Areas can only be biodiversity certified if measures under that certification adequately avoid, minimise and offset the development's impact on biodiversity values. (State Environmental Planning Policy for Strategic Conservation Planning – Explanation of Intended Effect, DPIE, 2020, p.2).

1.6.4.2 Excluded land

Excluded land is excluded from NSW strategic biodiversity certification and strategic assessment under the EPBC Act. These areas will not receive any biodiversity approvals under the Plan due to any of the following factors:

- o the land is already developed for urban use
- o development is already underway on this land under a separate process
- o the land is environmentally protected, including reserves and offset sites
- Commonwealth land sites (such as the Defence Establishment Orchard Hills)
- there are roads or easements on this land
- o it has specific urban zoning such as business, industrial, residential or special purpose (either already developed or to be developed)

(Draft CPCP, p.22)

1.6.4.3 Non-Certified land:

"Areas outside the certified-urban capable land but within the nominated areas will be 'non-certified' land and will not have biodiversity approval under the BC Act. There are two types of non-certified land: avoided land for biodiversity or other environmental purposes (riparian corridors or steep slopes) and non-certified land—Western Sydney Aerotropolis.

Avoided land is avoided from development due to identified biodiversity values on the site, or because the land cannot legally or feasibly be developed due to its topography or due to an environmental feature such as a riparian corridor."

Draft CPCP, 2020, P.20

Our opinion is that the Subject Land is not consistent with the criteria for Non-Certified Land because it is generally cleared of vegetation and does not does not exhibit sufficient biodiversity value to warrant exclusion from urban development.

Being subject to an existing and active development approval, the land should, in our opinion, be treated as capable of urban development. In this regard it is consistent with the criteria for certified land and should be categorised as *Certified*.

Alternatively, the land should be categorised as Excluded as it is clearly consistent with the following factor:

"development is already underway on this land under a separate process."

1.7 Conclusions and recommendation

This is the third submission that has been prepared with regard to State Government planning for the land at Badgerys Creek. This submission reiterates the conclusions of the earlier submissions and makes the following conclusions with regard to the proposed categorisation of the entire landholding as *Non-Certified - Avoided for Biodiversity*.

 The zoning of the land as Environment and Recreation under State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 is inappropriate as the land would not be capable of fulfilling the Objectives of the Zone. Yours sincerely



- The appropriate zoning of the Subject Land under State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 is Enterprise.
- The land in its current state, and subject to further approved removal of vegetation, has insufficient biodiversity value to warrant categorisation consequent to its zoning as *Non-Certified Avoided for Biodiversity* in the Cumberland Plain Conservation Plan.
- The appropriate categorisation of the land in the *Cumberland Plain Conservation Plan* is either *Certified* or *Excluded*.

In this regard, we contend that the proposed categorisation of the land as *Non-Certified – Avoided for Biodiversity* in the draft *Cumberland Plain Conservation Plan* should be reviewed in accordance with thee conclusions.

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Direct Email:	Line:
2	
Enc:	Letter of Determination of Pt 2 – 28 August 1996 plus the stamped approved plans; Letter confirming that the Conditions of Deferred Commencement have been satisfied and the development consent is operational – 3 October 1997; and Letter advising that substantial commencement has occurred and the development has been secured – 22 January 2008.
	Report Badgerys Creek - Ecological Investigation (Ecological Consultants Australia Pty Ltd, August 2020).



Penrith City Council

Our Ref:

DA960082 Pt2 ALC:JH

Contact:

Liza Cordoba

Telephone:

Direct (047) 32 7702

28 August 1996

Hondesse Pty Limited 186-192 Hume Highway LANSVALE NSW 2166

Dear Sir.

Erection and Operation of a Poultry Abattoir and Processing Facility Badgerys Creek

Enclosed is Council's formal Notice of Consent in connection with the abovementioned proposal.

This Development Notice is a "deferred commencement" consent issued under Section 91AA of the Environmental Planning and Assessment Act, 1979. The information detailed in Schedule 1 of this Notice will need to be submitted to Council for approval. In this regard, a letter will be provided which formally confirms that the information has been approved by Council and enables the commencement of the development consent.

Conditions to the development consent are referred to in Schedule 2 of this Notice.

You are advised that the "deferred commencement" consent is unable to be commenced until after 28 days from the date of this notice in accordance with Section 93 of the Environmental Planning and Assessment Act 1979.

Prior to the preparation and submission of the Building Application to Council, you are advised to liaise with Council's Building Approvals and Environmental Protection Department with respect to essential services and the requirements of the Building Code of Australia.

Yours faithfully,

Liza Cordoba for the Environmental Planning Manager

enc.

Civic Centre 601 High Street , Penrith DX 8017, Penrith PO Box 60, Penrith NSW 2751 Tel: (047) 32 7777 Fax: (047) 32 7958



Penrith City Council

Our Ref:

DA960082 Pt2 ALC:JH

Contact:

Liza Cordoba Direct (047) 32 7702

Telephone:

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

NOTICE TO APPLICANT OF DETERMINATION

OF A DEVELOPMENT APPLICATION

Pursuant to Section 92 of the Act, notice is hereby given of the determination by the consent authority of the Development Application.

D.A. No.

Date of "deferred

commencement" Consent: 28 August 1996

Issued to:

Hondesse Pty Limited

Address:

LANSVALE NSW 2166 (Sydney)

Land to be Developed:

Badgery's Creek

Proposed Development:

Erection and Operation of a Poultry Abattoir and Processing Facility. Plans Numbered DA-01'C', DA-02'C', DA-03'C', DA-04'C' received by Council on 31 July 1996.

Date of Determination:

19 August 1996

Tel: (047) 32 7777 Fax: (047) 32 7958

The Development Application has been determined by:

The Development Application has been determined by the granting of a "deferred commencement" consent under Section 91AA of the Environmental Planning and Assessment Act, 1979. Upon compliance with all conditions appearing in Schedule 1, and with the issue of confirmation to that effect in writing from Council, this "deferred commencement" consent shall commence to operate as a development consent, inclusive of all conditions appearing in Schedule 2, pursuant to Section 91 of the Act.

This consent will lapse in two (2) years from the date on which it commences to operate, unless development has commenced within that time.

This application was determined by Council at its meeting held on 19 August 1996. Minute No. 124.

The conditions of consent are set out as follows:

Schedule 1

An Environmental Management Plan is to be prepared and submitted to Council for approval. The Plan is to incorporate management and operational procedures for the development as it relates to noise, dust, odour, soil and waste management as well as the recommendations contained in the Environmental Impact Statement. In this regard the management and operational procedures are to focus on the following matters:

a) Effluent Irrigation and Associated Odour

The applicant shall submit details indicating that the soil is efficiently disposing of the effluent produced on the subject property and in effect, how potential odour impacts associated with the on-site irrigation of effluent will be mitigated. Prior to the approval of Council, the Plan is to be referred to the Federal Department of Transport and Regional Development for their concurrence.

Details are to include the preparation and maintenance of the soil for the purposes of effluent irrigation. In this regard, a comprehensive soil testing and monitoring program is to be provided for the subject property, with particular emphasis on phosphorus and sodium levels, as well as an analysis of the waste water.

A vegetative cover is to be provided and maintained in the 3 irrigation areas. Details are to be provided on the type of vegetative cover proposed.

Details are to be provided on a wet weather storage facility with a 10 day holding capacity to be utilised in those instances when on-site irrigation is prevented by wet weather.

Details are specifically to include how odour nuisances arising from the anaerobic dams may be minimised. This may include the method of

construction and maintenance programme for the dams, as well as the monitoring and management of both odour and vermin at the subject property.

b) Solid Waste Management

Details of how solid waste arising from the development will be stored and disposed of, including waste generated from the killing, processing areas and screen areas, as well as packaging waste.

c) Dust

The ambient dust deposition rate is not to exceed 4.0gm//m²/month for the development. The applicant shall submit advice from an air quality consultant indicating that the ambient deposition rate can be achieved, particularly during construction.

Details regarding the monitoring and management of dust emissions at the subject property are to be included, as well as dust suppression measures to be provided as part of the development.

d) Noise

Details are to specifically include the management and monitoring of noise, and where necessary, additional amelioration measures to be undertaken within the property.

Negotiations are to be initiated between Hondesse Pty Limited (the applicant) and Pacific Waste Management Pty Limited with the view to an agreement being reached between those parties for the applicant to contribute towards the ongoing maintenance of the Crown Road Reserve (being the "access road" off Elizabeth Drive) for the life of the poultry abattoir development. To ensure that an equitable agreement is reached, the contribution is to be calculated on the volume of heavy vehicle (truck) traffic generated by each development in each operational year, and is limited to that section of the access road between Elizabeth Drive and the proposed northern-most access driveway onto the subject property.

Schedule 2

- This consent is limited to Stage 1 of the proposal, including a maximum of 15,000 birds to be processed per week. Stage 2 of the Poultry Abattoir and Processing Facility will require separate development approval of Council.
- The submission of building plans and specifications under cover of a formal building application to the satisfaction of the Building Approvals and Environment Protection Department. It is to be noted that the consideration of this application has been limited generally to matters relating to site treatment and that detailed consideration has not been given to the internal layout of the building or matters controlled under the provisions of the relevant building requirements. Applicants are advised that it is in their interests to consult with Council's Building Approvals and Environment Protection Department with respect to these matters prior to the preparation of working drawings.
- Submission of a schedule of proposed external finishes including samples of all external materials to be used for Council's consideration and approval concurrently with the submission of a Building Application. In this regard, it should be noted that the use of natural concrete block on external walls is not permitted.
- Erosion and sediment control measures shall be provided to the satisfaction of Council and generally in accordance with the Department of Land and Water Conservation (Soil Conservation) standards. A detailed Soil and Water Management Plan shall be submitted to Council with the Building Application for approval. Approved measures shall be maintained until all disturbed areas have been revegetated to Council's satisfaction.
- Improved architectural treatments are to be provided for the access road elevation of Stage 1 of the building. Details are to be submitted with the Building Application for approval following further discussions with Council's Environmental Planning Department.
- The development site shall be landscaped and maintained with lawns and advanced shrubs and trees to the satisfaction of Council. A detailed landscape plan is to be lodged with the Building Application for approval and include:
 - (a) location of buildings, fences, roads, parking and storage areas;
 - (b) details of earthworks including mounding, dams and retaining walls;
 - (c) location and name of plant species;
 - (d) details of planting procedure and maintenance;
 - (e) barriers between landscaped and trafficable areas; and

- (f) provision of landscaping aligning the northern, southern and western boundaries of the development area.
- The building area earmarked for Stage 2 of the development is to be suitably landscaped to minimise visual impacts resulting from the development. Details are to be included with the Landscape Plan, as required by condition 6 above.
- No trees are to be cut down, lopped, destroyed or removed without the written approval of Council. In this regard, the applicant shall liaise with Council's Environmental Planning Department to arrange a joint site inspection prior to commencing site works.
- An application for approval under Section 27 of the Noise Control Act, 1975 shall be made to the Environment Protection Authority. In this regard, evidence of such approval shall be submitted to Council prior to commencement of any work associated with the development
- Provision of noise attenuation measures as indicated in the accompanying Environmental Impact Statement. Details are to be submitted with the Building Application.
- The use and occupation of the premises including all plant and equipment installed thereon shall not give rise to any offensive noise or vibration within the meaning of the Noise Control Act.
- The operating noise level of plant and equipment shall not exceed the background level by more than 5dB(A).
- Noise from the site during construction shall be controlled to reduce any disturbance or nuisance to nearby properties. The L10 noise level measured over a period of not less than 15 minutes when construction site is operating must not exceed the background level by more than 10dB(A).
- Upon arrival into the development site, the live birds are to be stored in the enclosed holding area within the building.
- All solid wastes are to be removed from the site in sealed tanks to minimise potential bird hazards impacting on the future operations of the Sydney West Airport.
- The treatment and storage of waste liquids on the site should not encourage an increase in bird populations in the area.
- 17 Structures on the site are not to exceed the height limits imposed by the Obstacle Limitation Surface Plan for the Sydney West Airport.

- Dust shall be controlled during construction works. This could include actions such as restricting topsoil removal, watering or sealing all roads where possible and amending construction practices during periods of high wind.
- Only clean and unpolluted water shall be permitted to discharge to Council's stormwater drainage system.

To ensure this, a first flush stormwater management system shall be provided in accordance with the requirements of the Environment Protection Authority. Design details and evidence of approval by the Environment protection Authority shall be submitted with the Building Application.

- A licence shall be obtained from the Environmental Protection Authority under the provisions of the Clean Waters Act, 1970 permitting the disposal of effluent from the processing plant and aerated septic system for permission to dispose of liquid wastes from the septic tank on the site. A copy of the licence shall be submitted to Council prior to occupation of the premises.
- A 10 day wet weather storage facility is to be provided to accommodate wastes during rain periods when effluent irrigation is not possible. To determine these periods, soil moisture sensors are to be installed. Details are to be submitted with the Building Application.
- The irrigation areas are to be rotated to allow a 10 day recovery period in accordance with the agronomic requirements of NSW Agriculture.
- Any discharge to the atmosphere from the subject development shall comply with the requirements of the Clean Air Act.
- There shall be no interference with the amenity of the area by reason of the emission of any unreasonable smell, odour, smoke, vapour or fumes as a result of the development.
- A combined ingress and egress driveway measuring 8 metres wide is to be located parallel to the southern (side) boundary of the development area.
- Separated ingress and egress access points, each measuring 6 metres wide, as well as a 1 metre wide median strip, are to be located parallel to the northern (side) boundary of the development area. Appropriate signposting and directional arrows are to be provided to Council's satisfaction. In this regard, a splay corner 2 metres x 2 metres is to be provided to the kerb.
- 27 Provision of heavy duty crossings to the satisfaction of Council. Paved vehicular footway crossings are to be provided at all points of ingress and egress to the satisfaction of and under the supervision of Council.

- All delivery vehicles associated with the facility are to utilise the separated ingress and egress driveways. In this regard, details on the truck turning movements are to be shown on the Building Application.
- A total of 22 off-street parking spaces are to be provided with the development, including, an allo ated carparking space (measuring 5.5 metres long x 3.2 metres wide) is to be for a disabled person.
- All parking spaces are to be permanently delineated to Council's satisfaction and have minimum dimensions 5.5m x 2.6m with a 6.7m turning aisle. The internal traffic circulation within the carpark shall be linemarked with directional arrows.
- All security fencing is to be established behind the areas required to be landscaped and not on the road alignments.
- All land required for vehicular access and parking shall be sealed in accordance with Council's requirements.
- All vehicles are to enter and leave the development site in a forward direction.
- A security gate for trucks associated with the development is to be located on the northern driveway, a minimum 30 metres from the road frontage. Details are to be submitted with the Building Application.
- Exterior lighting shall be located so as to avoid any nuisance to neighbouring properties. Details on the lighting to be used as well as its location are to be submitted with the Building Application.
- Prior to the release of the Building Approval, a Fire Safety Study and Emergency Plan shall be submitted to and approved by Council. The study will be referred to the Fire Brigade for comment.

The Fire Safety Study and Emergency Plan shall include an investigation of the following matters:

- a) Details of potential hazardous incidents, including the consequences of a credible incident involving explosion/fire.
- b) An outline of all fire prevention, protection, fire fighting measures and appliances.
- c) Details of emergency plans and procedures for the subject property.

The fire safety study and emergency plan shall be submitted to Council within six (6) months of the endorsed date of this consent.

- The burning of waste of any kind is prohibited under the Clean Air Act, 1961. All waste materials shall be stored in suitable containers for disposal.
- A facility for collecting, treating and disposing of concrete wastes generated in the construction of the development is to be installed on the site. The installation of the concrete waste facility must comply with the Concrete Wastes Guide (EPA 1995). Full details are to be submitted with the Building Application.
- Submission of a letter from Integral Energy stating that all its requirements have been satisfied, prior to the release of the Building Approval.
- A Section 73 Certificate under the Water Board (Corporatisation) Act 1994 is to be submitted to Council, stating that satisfactory arrangements have been made with Sydney Water for the amplification and/or water and sewerage services to the land prior to the release of the Building Approval.
- The recommendations contained in the Environmental Impact Statement, prepared by Dick Benbow and Associates Pty Limited to contain air, noise and water pollution are to be fully implemented under the supervision of the consultant.
 - Upon the completion of all works, Dick Benbow and Associates Pty Limited shall certify in writing to Council, that all the control measures in the statement comply in all respects with the relevant Acts and his recommendations to overcome all the sources of pollution. This certificate shall be submitted to Council prior to commencement of the use.
- Trucks to and from the subject property are limited to between 6.00am and 5.00pm, each operational day.
 - The hours of operation of the plant is limited to 6.00am and 3.00pm, each operational day. No operation is to occur on Sundays.
 - Any extension to the operating hours will require the further consent of Council.
- The maximum production capacity of the development is 15,000 birds per week. Any increase to the production capacity will require the further consent of Council.
- The development is to be operated in accordance with the procedures outlined in the approved Environmental Management Plan. A review of the management and operational procedures contained in the Plan is to be undertaken on an annual basis. A report of this review is to be submitted to Council by the operator.

The continued maintenance of that section of the access road, between the site's northern-most access point and Elizabeth Drive, to Council's standard specification. The level of maintenance liability is to be apportioned on the basis of the total truck volumes associated with the proposed abattoir development, compared with those generated by the extraction industry operation conducted by Pacific Waste Management Pty Ltd located at the northern end of the access road, generated in each operational year.

Advice:

- The building is to have a Type B fire-resisting construction under the requirements of the Building Code of Australia. The applicant is to consult with Council's Building Approvals and Environment Protection Department prior to the submission of the Building Application.
- Egress from the building shall comply with Part D1 of the Building Code of Australia.
- The Fire Safety Study and Emergency Plan is to be prepared by a qualified hydraulic engineer and shall consider the requirements of the Australian Standards AS2419-1994 and the Building Code of Australia. The plan is to be submitted to Council in accordance with Condition 37 of the development consent.
- Access and facilities for persons with disabilities shall be provided to the building in accordance with the requirement of the Building Code of Australia and Council's Access policy.
- The applicant is to consult with Council's Public Health Services Unit in respect to the food premises prior to the preparation of the Building Application, to ensure compliance with the Food Act and Regulations.

These conditions have been imposed for the following reasons:

- 1. To ensure compliance with the terms of the relevant Planning Instrument.
- 2. To ensure that no injury is caused to the existing and likely future amenity of the neighbourhood.
- 3. Due to the circumstances of the case and the public interest.
- 4. To ensure that adequate road and drainage works are provided.
- 5. To ensure that satisfactory arrangements are made to satisfy the increased demand for public recreation facilities.
- 6. To ensure that requirements relating to Health and Building matters will be met.
- 7. To ensure that access, parking and loading arrangements will be made to satisfy the demands created by the development.

Notice is hereby given of the right of appeal against the decision of Council pursuant to the Environmental Planning and Assessment Act, 1979.

This is Page No. 10 of Development Notice issued on 28 August 1996

The granting of the above application does not relieve the Applicant of the obligation to obtain any other approval required under the Local Government Act, 1993, or any other Act and Ordinances under such Acts.

Liza Cordoba for the Environmental Planning Manager

Dated this Twenty third day of August 1996





BY:----

Our Ref: PP: 960082 DA Contact: Mr Pukar Pradhan Telephone: (02) 4732 7726

22 January 2008

Lino D'Onofrio Bongiorno Hawkins Frassetto & Associates P/L

FAIRFIELD NSW 2165

Dear Mr D'Onofrio,

for the Proposed Poultry Abattoir Processing Facility at Badgery Creek

I refer to the above development application and your letter dated 7 November 2006 along with the submitted documentations to indicate that certain construction works were carried out prior to the expiry of the consent notice.

You are advised that Council's Officer has now inspected the site and noted that the footing excavation and reinforced concrete pours were carried out are still in place. In view of the site inspection and documentations provided by you which included

- a letter from Peter Marcus Consulting Engineers Pty Ltd dated 16 June 1999 to demonstrate that foundation works were carried out and were structurally sound,
- a facsimile sent by Rhodes Thompson Associates dated 12/3/1999 to indicate that earth works involving clearing of the pegged development area,

Council has now concluded that substantial construction works have been carried out on site in accordance with the approved plan prior to the expiry date of the relevant consent and advise that the consent issued for the above development has now been secured. You are reminded that all conditions of the Consent Notice dated 28 August 1996 and Building Permit No.973429 dated 11/02/1998 must be complied with prior to the occupation of the building and commencement of the use/business.

If you have any queries regarding this matter, please contact me or Stimson on

or Warwick

Yours faithfully,

Pukar Pradhan Senior Environmental Planner



lat Banjierra

Liza Cordoba

3 October 1997

Hondesse Pty Limited

LANSVALE NSW 2166

Dear Mr Caruana

Development Consent-Designated Development

Exection and Operation of a Poultry Abattoir and Processing Facility

Badgerys Creek

I refer to the additional information submitted to Council in relation to the conditions detailed in Schedule 1 of the Notice of Determination.

I wish to advise that the Environmental Management Plan and Attachments, excluding the Emergency Response Manual and the Fire Safety Plan, are approved by Council. This satisfies the conditions under Schedule 1. A copy of the approved EMP is enclosed for your information.

The Emergency Response Manual and the Fire Safety Plan are to be submitted to Council with the Building Application in accordance with condition 36, Schedule 2 of the Notice of Determination. It is appropriate that the Emergency Response Manual and the Fire Safety Plan should be incorporated in the annual review of the EMP.

The development consent is operational from 3 October 1997, being the date of this letter. The conditions of the development consent are referred to in Schedule 2 of the Notice of Determination dated 28 August 1996.

However, the development consent is unable to be commenced until 28 days after 3 October 1997. This is in accordance with section 93 of the Environmental Planning and Assessment Act, 1979.

If you have any further enquiries, please contact me on

Yours faithfully

RM to note M

Liza Cordoba for the Environmental Planning Manager

encl.

(pc223:/c:/winword/letters/das/960082.doc)

Stamp-approved EMP refer Attachment File Pt3 copy of Approved Plans on Pt2 File (Folio 72)

Badgerys

Creek, NSW, 2555

Ecological Investigation

By Ecological Consultants Australia Pty Ltd TA Kingfisher Urban Ecology and Wetlands August 2020







About this document

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Statement of Authorship

This study and report was undertaken by Ecological Consultants Australia at Studio 1/33 Avalon Parade, Avalon. The author of the report is Geraldene Dalby-Ball with qualifications BSc. majoring in Ecology and Botany with over 20 years' experience in this field and Jack Hastings with qualifications B EnvSc.

Limitations Statement

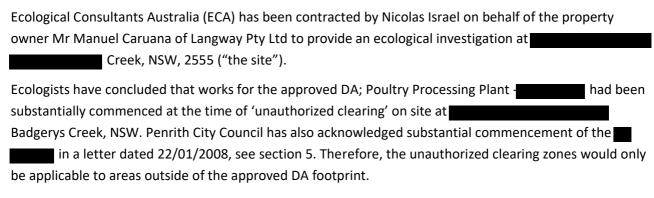
Information presented in this report is based on an objective study undertaken in response to the brief provided by the client. Any opinions expressed in this report are the professional, objective opinions of the authors and are not intended to advocate any particular proposal or pre-determined position.

Document Control Sheet		
Title:	Badgerys Creek, NSW, 2555 Ecological Investigation	
Version:	Final	
Author:	Jack Hastings and Geraldene Dalby-Ball	
Date:	August 2020	
File location:	C:\Users\Geraldene\Dropbox\ECA 4 Projects\2 Projects\2019- Badgerys Creek, NSW, 2555	
Distribution:	Mr Manuel Caruana Langway Pty Ltd Lansvale NSW 2166. ACN 001 486 924	

Signed: Geraldene Dalby-Ball – Director of Ecological Consultants Australia



Executive Summary



Ecologists have undertaken an ecological investigation to determine the impact on vegetation and possible mitigation measures which may be applicable. Field survey data was gathered as per BAM methodology and entered into the Biodiversity Assessment Method Calculator (BAM-C) to determine the cost of possible offset measures as prescribed by the Biodiversity Conservation Act 2016 (BC Act).

The investigation also concluded that it is unlikely vegetation outside of the approved DA footprint, which was removed in 2018, would have significantly contributed towards the long-term survival of Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion. As identified in historical imagery, the impacted vegetation (outside of approved DA footprint) appears to be in marginal condition due to obvious disturbances within the zone. It is recommended however, that impacts be offset, either on site and/or within adjoining lots within the vegetation corridor.

Conclusions

- The approved DA; Poultry Processing Plant had been substantially commenced at the time of 'unauthorized clearing' on site.
- It is unlikely vegetation outside of the approved DA footprint, which was removed in 2018, would have significantly contributed towards the long-term survival of the vegetation community.
- Impacted vegetation (outside of approved DA footprint) appears to be in in marginal condition identified via historical imagery.
- Vegetation now cleared (that was present at time of DA approval) but outside the DA approved footprint is approximately 1.49ha (figure 3.1).
- If the 1.49ha was quality vegetation (as per the plot taken on-site) the credit costs for off-setting this is around \$500,000. It has been concluded that this area was 30% of the value of the official plot conducted in 2020 in the quality remaining vegetation.
- Based on this finding, the off-set value for the area cleared would be calculated at 30% X \$500,000.
 Therefore, the expected off-set cost is \$150,000.

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1 Introduction

Ecological Consultants Australia (ECA) has been contracted by Nicolas Israel on behalf of the property owner Mr Manuel Caruana of Langway Pty Ltd to provide an ecological investigation at Badgerys Creek, NSW, 2555 ("the site").

The report aims to determine the impact of recent vegetation clearing on site. A site investigation was conducted in July 2020 by senior ecologist Geraldene Dalby-Ball (accredited bio-bank assessor). The field survey data was gathered as per BAM methodology.

1.1 Site information and general description

The Subject Site (the "Site") is defined as the whole of the property. The site is identified at

Badgerys Creek NSW. The site area is located within the City of Penrith

Local Government Area (LGA) and covers approximately 10.1 ha.

The site has been modified and native vegetation removed in some areas. The cleared land is used to crush and store gravel, sand and plant equipment. Site offices and sheds are also located on cleared land. Native vegetation is not mapped on the Biodiversity Values Map (BVM) (DPIE 2020), nor is it mapped on council's Terrestrial Biodiversity layer under the Penrith Local Environment Plan 2010.

1.1.1 Approved DA

The approved DA was for a Poultry Processing Plant - All information which is relevant to the approved development application (DA) has been provided by the client.

As detailed in a letter from Penrith City Council (dated 22/01/2008), the approved DA for a Poultry Processing Plant had been substantially commenced prior to the unauthorised clearing on site. Therefore, the unauthorized clearing zones would only be applicable to areas outside of the approved DA footprint.

Table 1 - Site Administrative Information

Category	Details
Title Reference (Lot/DP)	
Area (ha)	10.1Ha
Street Address	Badgerys Creek, NSW, 2555.
LGA	City of Penrith Local Government Area (LGA)
Land Zoning	RU2: Rural Landscape 'Environment and Recreation' in the Draft Western Sydney Aerotropolis Plan.

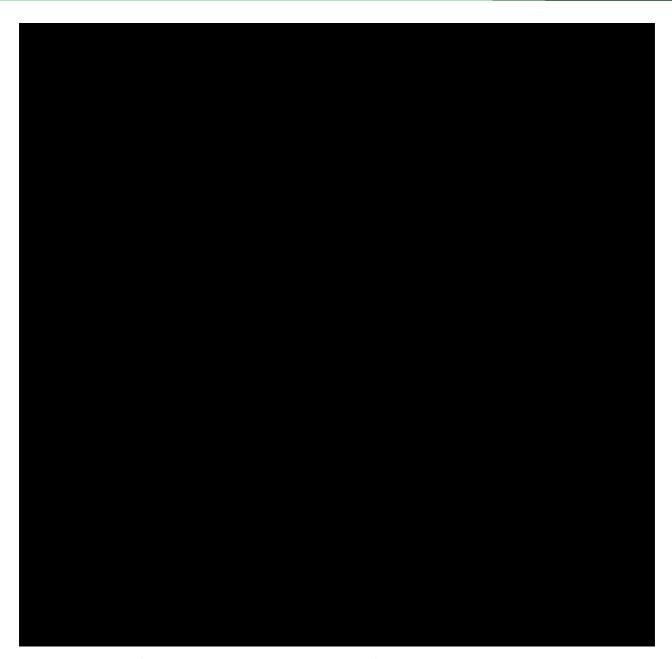


Figure 1.1. Site of the proposed development. Source of aerial SixMaps 2020

2 Landscape features

The site is located within agricultural/rural/light industrial setting. The surrounding properties are made up of agricultural (Cropping) rural (grazing and pasture paddocks) and patches of native bushland.

Desktop results – Plant Community Types (PCTs) and Vegetation Zones

A review of the most up-to-date vegetation mapping, CumberlandPlainWest_VIS__4207 OEH (2016), identified two plant community types (PCT) within site. The PCT are identified as;

Table 3 – Table of vegetation community synonyms as per NSW and Commonwealth legislation.

NSW PCT Code	NSW PCT Name	BC Act 2016	EPBC Act 1999
724	Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain, Sydney Basin Bioregion	Shale Sandstone Transition Forest in the Sydney Basin Bioregion State Conservation: Critically Endangered Ecological Community (CEEC)	Shale Sandstone Transition Forest in the Sydney Basin Bioregion Commonwealth Conservation: Critically Endangered (CE)
725	Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain, Sydney Basin Bioregion	Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion State Conservation: Endangered Ecological Community (EEC)	Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion Commonwealth Conservation: Critically Endangered (CE)

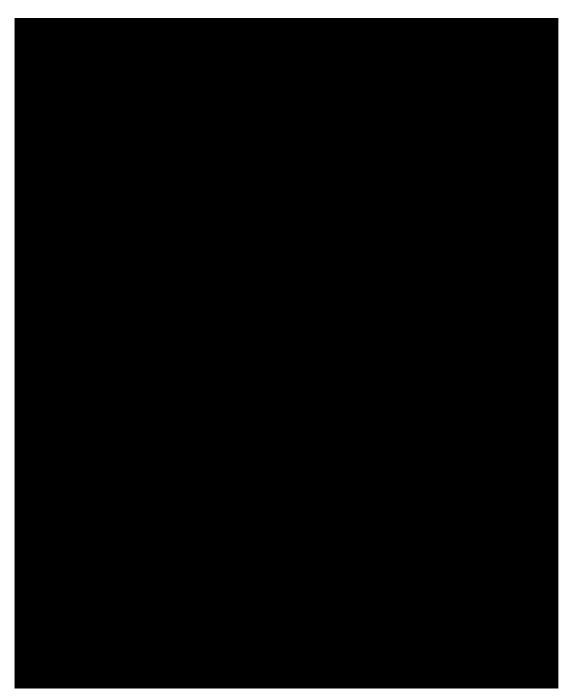


Figure 2.0. Subject site within mapped remnant vegetation surrounding the property. Source: Kingfisher 2020.

2.1 Field survey – PCTs and Vegetation Zones

2.1.1 Field Survey

The field survey revealed a highly-disturbed site. Vegetation has been assessed as Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion (PCT725). This finding was concluded following desktop investigations and field assessments.

The site has been modified such that many areas do not reflect the natural attributes of the original vegetation community. The patch of retained vegetation is in marginal condition and appears to be

resilient. There is a moderate abundance of weeds within this patch and bush regeneration techniques are recommended to maintain bushland resilience.

Dillwynia tenuifolia has previously been recorded on site (Lersyk Environmental, 2017). The area of vegetation in which the species is expected to occur has been retained. Again, the area has a moderate abundance of weeds and the immediate surrounding areas are significantly modified such that the species is unlikely to occur.

Stratification and plot dimensions

During the field investigation, a vegetation survey was conducted in the patch of retained vegetation. The plot was conducted as per the BAM Method with 20x20 plots (400m²) for assessing structure and composition with a center line extending 50m to create a 20 x 50 plot (1000m²) to assess function. See Biodiversity Assessment Method Operational Manual – Stage 1 (OEH 2018) page 26-28 for methods used.

2.1.2 Surrounding land use

Land use in the surrounding area comprises of a mix of rural, waste and resource recovery activities within the RU2 land zone.

Figure 1 (below) shows the location of those waste management and resource recovery facilities within close proximity of the subject site. These include Suez Resource Recovery Park (off Elizabeth Drive), Brandown Quarries (off Elizabeth Drive), Hi Quality Group (off Elizabeth Drive), Australian Native



within close proximity of the subject site. (Subject site – yellow arrow).

2.2 Discussion

Penrith City Council is continuing to investigate the clearing of vegetation on the premises. It must be noted that Penrith City Council has acknowledged substantial commencement of the in a letter dated 22/01/2008, see section 5. Therefore, any vegetation within the impact area for the approved DA had approval to be removed. As such, unauthorised clearing allegations are only applicable to areas outside of the approved DA footprint.

Ecologists have used this determination to conduct an impact investigation for areas effected by vegetation removal and modification in 2018. Ecologists have concluded that due to the condition of vegetation on site and surrounding land uses. It unlikely that the vegetation removed would have significantly contributed to the long-term survival of Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion.

The approved plan for the Poultry Processing Plant has been overlaid (via GIS geo-referencing) to determine the expected impact area of the approved DA. The expected impact area for the Poultry Processing Plant DA included; the building footprint, evaporation ponds, proposed landscaping areas and access roads. Estimates indicate that 8.59ha is approved for disturbance/removal as part of the Therefore, 1.51ha of vegetation would have been retained, outside of the approved disturbance/removal areas, see section 8 for the estimated disturbance zones for the approved DA.

In comparison, large areas of native vegetation have been retained on site and it had been concluded that the current area of retained vegetation is 1.55ha. As such, there is no significant difference in the net area of disturbance, when comparing the current condition of the site and the approved (expected) condition.

Additionally, ecologists have predicted that the current patches of retained vegetation are of higher conservation significance than the native vegetation which would have been retained under the Poultry Processing Plant DA. Historical aerial imagery shows a vehicle track divides the southern zone and the area also appears to lack mid and upper stratum diversity. It is expected that this area (if retained) would not have significantly contributed to the long-term survival of the vegetation community on site.

Figure 3.1 outlines the approved DA footprint, current areas of retained vegetation (1.55ha) and the disturbed areas, outside of the DA footprint (1.49ha).



Figure 3.1. Approved plan for the Poultry Processing Plant, overlaid via GIS geo-referencing.



2.3 Impact Evaluation – BAM credit estimates

Field data was gathered using the BAM Method, with 20x20 plots (400m2) for assessing structure and composition with a center line extending 50m to great a 20 x 50 plot (1000m2) to assess function. See Biodiversity Assessment Method Operational Manual – Stage 1 (OEH 2018) page 26-28 for methods used.

This data enabled ecologists to determine the credit obligations which may be applicable in order to offset the unauthorised clearing, outside of the approved development footprint. Vegetation on site has been assessed as Cooks River/Castlereagh Ironbark Forest (TEC) in the Sydney Basin Bioregion (PCT725). This finding was concluded following desktop investigations and field assessments.

Vegetation now cleared (that was present at time of DA approval) but outside the DA approved footprint is approximately 1.49ha (figure 3.1). If the 1.49ha was quality vegetation (as per the plot taken on-site) the credit costs for off-setting this is around \$500,000. From plate 1, it can be seen that the vegetation in the zone is not dense vegetation (as represented by the plot data used in this study). Based on examination of nearby areas with current similar aerial imagery it is expected that this area was 30% of the value of the official plot conducted in 2020 in the quality remaining vegetation.

Based on this finding, the off-set value for the area cleared would be calculated at 30% of the \$500,000. Therefore, the expected off-set cost is \$150,000.

3 Offset and Mitigation measures

To protect and enhance the viability and integrity of the reaming bushland on site, ecologists have recommended the following mitigation measures. It is recommended that impacts be offset either on site and/or within adjoining lots within the same vegetation corridor.

3.1.1.1 Exclusion zones and delineation of works zone

The vegetation which remains on site should be enclosed by exclusion zone fencing and signage erected to ensure personnel on site do not impact on the area. The fencing should ideally be an open mesh or bar type structure to allow air flow and light through and provide continuity with adjacent vegetation so as not to impede the function of a vegetation corridor. There must be openings underneath the barrier to allow for small fauna movements.

3.1.1.2 Native landscaping and bush regeneration

Activities including weed removal, removal of foreign materials, mulching and sediment controls and tube stock planting are recommended for the site. Replacement plantings are one of several best practice measures, to retain and support the long-term survival of the vegetation on site. It is recommended that seeds are collected from the site. Seedlings can then be propagated and planted once established. Landscaping across the site should be selected from locally native ground and shrub species.

Low impact bushland regeneration methods should also be utilised to meet weed control performance targets. The bushland on site displaying signs of resilience. The area is expected to recover naturally with appropriate and continuous maintenance of the native vegetation on site. Should tube stock be required, species should be selected from the Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion species list.

4 Site Photos

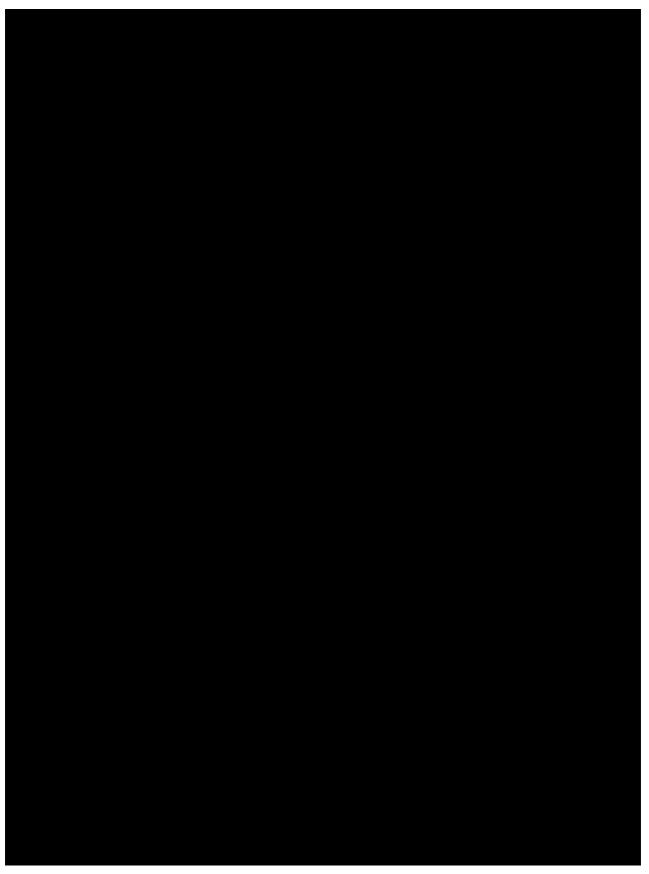


Plate 2: Native vegetation in the southern third of the site-retained.



Plate 3: Current use of the site (top) and BAM Plot (bottom)

5 Penrith Council Letter – Substantial commencement of





Our Ref: PP: 960082 DA Contact: Mr Pukar Pradhan D

22 January 2008

Lino D'Onofrio Bongiorno Hawkins Frassetto & Associates P/L L1/39-41 Harris Street P O BOX 279 FAIRFIELD NSW 2165

Telephone: (02) 4732 7726

Dear Mr D'Onofrio,

for the Proposed Poultry Abattoir Processing Facility at Badgery Creek

I refer to the above development application and your letter dated 7 November 2006 along with the submitted documentations to indicate that certain construction works were carried out prior to the expiry of the consent notice.

You are advised that Council's Officer has now inspected the site and noted that the footing excavation and reinforced concrete pours were carried out are still in place. In view of the site inspection and documentations provided by you which included

- a letter from Peter Marcus Consulting Engineers Pty Ltd dated 16 June 1999 to demonstrate that foundation works were carried out and were structurally sound,
- a facsimile sent by Rhodes Thompson Associates dated 12/3/1999 to indicate that earth works involving clearing of the pegged development area,

Council has now concluded that substantial construction works have been carried out on site in accordance with the approved plan prior to the expiry date of the relevant consent and advise that the consent issued for the above development has now been secured. You are reminded that all conditions of the Consent Notice dated 28 August 1996 and Building Permit dated 11/02/1998 must be complied with prior to the occupation of the building and commencement of the use/business.

If you have any queries regarding this matter, please contact me on Stimson on

Yours faithfully,

Pukar Pradhan

Senior Environmental Planner

Tel: (02) 4732 7777 • Fax: (02) 4732 7958 • Civic Centre, 601 High Street, Penrith NSW 2750 DX 8017, Penrith • PO Box 60, Penrith NSW 2751 • E-mail: pencit@penrithcity.nsw.gov.au

6 Poultry Processing Plant - Expected disturbance zone

Estimates indicate 8.59ha was proposed for disturbance/removal as part of the approved DA (red). Therefore, 1.51ha of vegetation would have been retained, outside of the approved disturbance/removal areas (green).

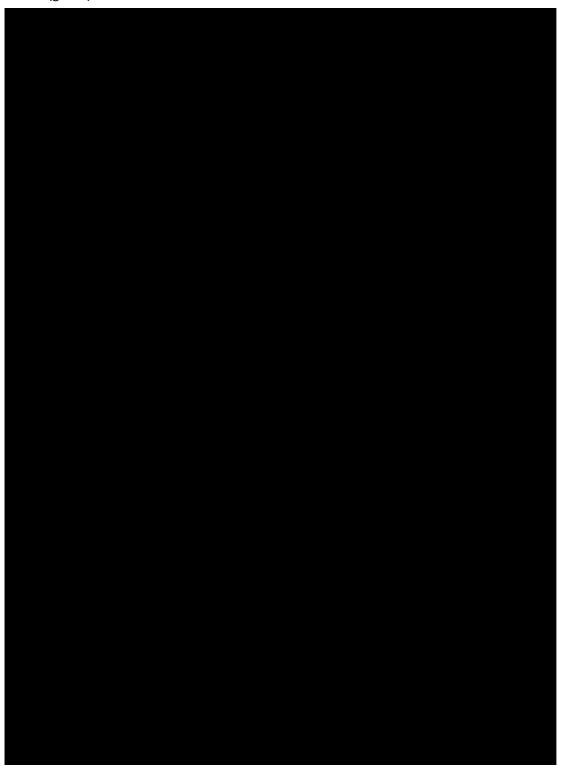


Figure 4.0. Poultry Processing Plant - DA 960082 overlay - Source: Nicolas Israel July 2020.

7 References

DPIE (2020). Atlas of NSW Wildlife (Bionet). New South Wales, Office of Environment and Heritage.

DPIE (2020). NSW Threatened Species Information.

DPIE (2020). PlantNET (The Royal Botanic Gardens and Domain Trust 2014).

(OEH, 2016) VIS_Vegetation_CumberlandPlainsWest_2013_E_4207

Ecoplanning (2020). Ecological Assessment, Badgerys Creek, NSW, 2555.

Lesryk Environmental (2017). Flora and Fauna Survey and Assessment, Badgerys Creek, NSW, September 2017. Prepared for National Integrated Creative Solutions on behalf of Crush and Haul Pty Ltd.

NSW Land and Property Information (2020). Six Maps Viewer.

Penrith City Council (8th May 2020). NOTICE TO PROVIDE INFORMATION AND RECORDS. Contact: Andrew Reece.

Penrith City Council (22/01/2008) - Attn; Lino D'Onofrio. Ref= PP: 960082 DA.

8 Expertise of authors

With over 20 years wetland and urban ecology experience, a great passion for what she does, and extensive technical and onground knowledge make Geraldene a valuable contribution to any project.

Geraldene has over 8 years local government experience as manager of environment and education for Pittwater Council. Geraldene presented papers on the topic at the NSW Coastal Conference, Sydney CMA and Hawkesbury Nepean forums. Geraldene is a Technical Advisor Sydney Olympic Park Wetland Education and Training (WET) panel.

Geraldene has up to date knowledge of environmental policies and frequently provides input to such works. Geraldene was a key contributor to the recent set of Guidelines commissioned by South East Queensland Healthy Waterways Water Sensitive Urban Design Guidelines. Geraldene's role included significant contributions and review of the Guideline for Maintaining WSUD Assets and the Guideline for Rectifying WSUD Assets.

Geraldene is a frequent contributor to many community and professional workshops on ecological matters particularly relating to environmental management. She is an excellent Project Manager.

Geraldene is a joint author on the popular book Burnum Burnum's Wildthings published by Sainty and Associates. Author of the Saltmarsh Restoration Chapter Estuary Plants of East Coast Australia published by Sainty and Associates (2013). Geraldene's early work included 5 years with Wetland Expert Geoff Sainty of Sainty and Associates. Geraldene is an expert in creating and enhancing urban biodiversity habitat and linking People with Place.

Geraldene Dalby-Ball DIRECTOR



SPECIALISATIONS

- Urban Ecology and habitat rehabilitation and re-creation.
- Urban waterway management assessing, designing and supervising rehabilitation works
- Saltmarsh and Wetland re-creation and restoration assessment, design and monitoring
- Engaging others in the area of environmental care and connection
- Technical Advisor environmental design, guidelines and policies
- Sound knowledge and practical application of experimental design and statistics
- Project management and supervision
- Grant writing and grant assessment
- Budget estimates and tender selection
- Expert witness in the Land and Environment Court

CAREER SUMMARY

- Director and Ecologist, Ecological Consultants Australia. 2014-present
- Director and Ecologist, Dragonfly Environmental. 1998-present
- Manager Natural Resources and Education, Pittwater Council 2002-2010
- Wetland Ecologist Sainty and Associates 1995-2002

QUALIFICATIONS AND MEMBERSHIPS

- Bachelor of Science with 1st Class Honors, Sydney University
- WorkCover WHS General Induction of Construction Industry NSW White Card.
- Senior First Aid Certificate.
- Practicing member and vice president Ecological Consultants Association of NSW

Jack is a passionate ecologist who has worked with various stakeholders across both the public and private sectors to deliver sustainable environmental outcomes. He has worked on projects with major construction contractors and has been able to deliver tailored environmental solutions on time and within budget.

As an undergraduate student, he published a study that examined the cost of revegetation across the Richmond River Catchment in NSW. This study provided Jack with a deep understanding of urban and landscape ecology and the environmental factors associated with habitat restoration.

He has advanced communication skills and can deliver professional ecological assessments. He has a thorough understanding of current NSW and Commonwealth environmental legislation. He is also competent in the practical application of flora and fauna surveying and monitoring techniques.

Jack would be a valuable addition to any ecology project as he is committed to achieving the best possible outcome for both the client and the environment.

Key Projects Include:

- Monitoring of Endangered Species, various locations
- Environmental consultant for many civil developments throughout the Sydney region
- Researching the On-farm costs of revegetation in the Richmond River Catchment
- Sustainable business transformation proposal for a retail store.

Jack Hastings ECOLOGIST



SPECIALISATIONS

- Urban and landscape ecology design and re-creation
- Environmental Impact Assessments (EIA)
- Review of Environmental Factors for development applications
- Flora and Fauna management plans
- Habitat tree assessment, marking and mapping
- GIS mapping
- Sound understanding and practical application of experimental design
- Grant writing and grant assessment

CAREER SUMMARY

- Ecologist, Ecological Consultants Australia. 2019-present
- Environmental Consultant, BBN Consulting. 2018-2019

QUALIFICATIONS AND MEMBERSHIPS

- Bachelor of Environmental Science, Southern Cross University.
- Certificate II Agriculture.
- WHS General Induction of Construction Industry NSW White Card.