

Environment and Planning Directorate (EPD),  
ACT Government,  
CANBERRA

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## **BELCONNEN – STRATHNAIRN**

**Development Application:** 201834846

**Address:** 279 PARKWOOD ROAD

**Block:** 1633 **Section:** 0

**Proposal:** ESTATE DEVELOPMENT PLAN for Ginninderry Estate (Stage 2) - the proposal is for the creation of 457 single dwelling blocks and 45 multi unit blocks for a total of 814 residential dwellings, and associated earthworks, roads, utility services, footpaths, landscaping, urban open space and offsite works. The proposal also includes the removal of trees and ongoing provisions to be included in the Strathnairn Precinct Map & Code.

**Period for representations closes:** 09/01/2019

1. The Ginninderra Falls Association (GFA) is grateful for the extension of time granted for lodgement of representations following our request of December 14<sup>th</sup>. Whilst there is an understandable desire by organisations to finalise matters before the end of the year, it is generally acknowledged that the year's end is very busy for most people with various end-of-year activities plus Christmas and holiday preparations. The vast number of documents associated with this Development Application (DA) require considerable time and effort, such that review is compromised by the short consultation period at this time.

### **Overview**

2. GFA's objects are to protect the natural landscape and biodiversity along the Murrumbidgee River and Ginninderra Creek by ensuring sensitive areas are protected in a national park structure. The subject area of DA 201834846 is part of the broader Ginninderry project which occupies high ground along these two waterways in the headwaters of the Murray-Darling Basin. Accordingly, permanent protective measures are required that will, of necessity, impose an economic burden on future generations associated with, for example, water sensitive urban design (WSUD) infrastructure that will need continual maintenance into the future to protect water quality in the Murrumbidgee, as well as catastrophic fire protection measures due to landscape features facilitating dynamic fire behaviour, and protection of wildlife from residential proximity.

### **Suitability of the land**

3. This area was originally used for grazing sheep following the arrival of Europeans in the 1820s. Historically, it has been and still is important for aboriginal activities and traditions associated with the waterways. More recently, it has been used for grazing

cattle and for a series of urban uses best segregated from residential zones, including transmission of high voltage electricity, intensive egg farming and disposal of waste, including loose asbestos. Whilst the egg farm will cease operating and the waste disposal areas will be permanently closed and rehabilitated, ground pollution problems from these will persist for a long time.

4. Ginninderry Stage 2 is located roughly 140 metres above the Murrumbidgee in an area draining into the river via a gully system with relatively steep slopes. Whilst this stage will be surrounded by Stage 1 on the east and Stage 3 on the west, it will still be exposed to bushfire on its southern edge. It will be separated from Stage 3 by a corridor running NE-SW which contains a high voltage 132 kV power line connected to a TransGrid electricity substation on the northern edge.<sup>1</sup> This substation also accommodates four very high voltage 333 kV power lines passing just north of Stage 2. The future ActewAGL 330/132kV Stockdill substation has been approved for the north-eastern corner of Stage 2, just below the major TransGrid substation. The area around these facilities is mainly zoned RZ3 – Urban Residential, with a small Urban Open Space immediately abutting the proposed ActewAGL substation site, and an area of RZ5 – High Density Residential alongside the western edge of the TransGrid substation. The area closest to the open river corridor will be RZ1 - Residential.<sup>2</sup>
5. Under subsection 129 of the *Planning and Development Act 2007*, the decision-maker is required to consider, in particular:
  - (c) the suitability of the land where the development is proposed to take place for a development of the kind proposed;  
AND
  - (g) the probable impact of the proposed development, including the nature, extent and significance of probable environmental impacts;

Whilst the overall Ginninderry proposal has been approved in principle by the ACT Government, there are still concerns relative to particular parts of the proposal that must be considered. GFA's concerns relate to the following issues in Stage 2:

**a) Reduction in green cover and resultant heat bank effect**

6. The smallness of the blocks in RZ1 and RZ3 and the density of RZ5, combined with the generousness of the rules and criteria in newly-developed areas, will result in minimal setbacks, maximum building coverage of blocks and fragmented open spaces on blocks with a consequent lack of onsite tree/shrub/grass plantings. Small setbacks along the sides and rear of blocks tend to result in open areas being paved or covered in gravel as maintenance of lawn in such cramped conditions is inconvenient. The requirement for certain plantings to be made is not monitored in the long-term, thus rendering such provisions approved in DAs meaningless.
7. The intention for street trees to be large enough for the canopies to join over the road is admirable but survival of these trees will depend on many factors including whether there

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<sup>1</sup> CONCEPTMASTER-201834846-01

<sup>2</sup> LANDUSE-201834846-01

is enough on-site parking to accommodate all vehicles. Existing suburbs are notable for the erosion of verge grass due to parking of vehicles despite its being illegal. Use of Stratavault cells to direct tree roots away from the surface might improve outcomes for the trees. Whilst the street trees will be some compensation if successful, the remainder of excessive hard surfaces will increase the heat island effect relative to the current situation and result in high electricity usage for air conditioners in summer.

8. We note the proposed retention of existing trees in green strips is an experiment that might prove positive for wildlife but will not compensate for loss of greenery on blocks as far as the heat island effect is concerned. GFA notes the rather surprising and uninformative response to Stage 1 submissions regarding the heat bank effect, given the ACT Government's long-stated environmental intentions<sup>3</sup>:

(m) Heat bank impacts the proposal may have on all native species leading to potential decline and loss of species.

This has not been raised as an issue during the assessment of the application and referral of the proposal to relevant Government entities. It is noted that the West Belconnen Stage 1 EDP is lodged in the Merit Track as outlined above.

#### **b) Water sensitive urban design**

9. The building density of this proposal and the resultant high percentage of hard surfaces will, in addition to the heat bank effect, result in less absorption of rainwater into the ground and increased runoff with the risk of greater erosion of the slopes running down to the river and through the conservation zone. Additionally, the runoff will be across dirty urban surfaces, especially roads with their inevitable coating of oils and similar pollutants deposited by vehicles, such as rubber particles containing lead, cadmium and zinc from tyres. These pollutants have been studied and documented:

The pollutants present on road surfaces come from atmospheric deposits during dry weather (of natural or anthropogenic origin), from vehicular traffic (combustion of fuels, tyre wear, vehicle mechanical parts and braking system, vehicle bodywork corrosion, etc.), from mainly organic waste, from vegetation, from erosion of the road surface caused by vehicular traffic and from barrier corrosion.

AND

It is important to note that it is generally not possible to find road runoff devoid of pollutants. Consequently, it is very important that road runoff water and sediment, especially along busy roads or adjacent to environmentally sensitive areas, is properly treated before being released into the environment.<sup>4</sup>

10. This increased surface drainage necessitates construction of barriers/ponds to capture such water for treatment to prevent it from entering the river system especially if rainwater is to be reused for irrigation<sup>5</sup>. Surface water that enters the groundwater ultimately drains into the river system, along with contaminants. Two ponds are already required for Stage 1 and a further three will be required for Stage 2 along with accompanying swales. The weakness of this arrangement is that this infrastructure

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<sup>3</sup> Reasons for Decision DA 201731203 (Notice of Decision – Stage 1), p.11.

<sup>4</sup> <http://www.eniscuola.net/en/2017/03/22/road-runoff-environmental-pollution/>

<sup>5</sup> <http://203.9.249.10/e-registerfiles/pubnote/pdf/WATERURBANDESIGN-201834846-01.pdf> p.5.

requires continual maintenance into the future to ensure the waters supporting the Murrumbidgee Irrigation Area are not compromised. Whilst there is a proposal to make this maintenance the responsibility of the Conservation Trust, there is always a possibility of the Trust not being able to fulfil this commitment. Essentially, the responsibility for protecting Murrumbidgee water quality lies with the ACT Government, funded by ratepayers across the city. This project is creating a rod for the back of all future ACT Governments and residents. As more river valley lands are urbanised, the burden becomes greater.

### c) **Bushfire Risk**

11. GFA is concerned that potential land-package purchasers and residents might not be adequately aware that their suburbs are being built into a known bushfire-risk zone. Currently, grassland and grazing land separate the planned Stage 2 community from the Murrumbidgee's gorges and the designated Conservation Corridor. The lighter fuels in the river corridor adjacent to Stage 2 and the fact that the slopes are less critically aligned with the prevailing wind direction means that this area is not as prone to dynamic fire propagation as the NSW portion at Parkwood. Stage 2 is five kilometres from the near-vertical slopes at the junction of the Murrumbidgee and Ginninderra Creek which can generate catastrophic firestorms. Nevertheless, in an extreme situation, it could still be possible for erratic and strong winds to send embers into the new suburbs to the south-east, including Stage 2. [See diagrams<sup>6</sup>] At this point in time, there is general acknowledgment that the climate is warming and that this will result in an increase in the frequency and dynamic behaviour of extreme bushfires in the future.<sup>7</sup> It would, therefore, be appropriate to employ the precautionary principle to provide for future needs in this particular location.

12. In this context, we note the statement in *Appendix J – Bushfire Risk Assessment* that,

Future amendments may remove the requirement for dwellings to comply with bushfire construction measures (i.e. AS 3959-2009).

AND

As the proposal includes separation of at least 100m for its entire perimeter, all dwellings in the proposed Stage 2 area are not required to meet the construction requirements detailed in AS3959-2009, as they are BAL LOW, which equates to insufficient risk (according to AS3959-2009) for requiring bushfire construction measures.

This suggests a desire not to have to ensure housing can survive any future possibility of destruction by embers from wildfire, such embers travelling vast distances much in excess of 100 metres. Whilst reflecting the reality that building suburban homes to rigorous fire resistant standards is likely to be inconsistent with affordability, this attitude conflicts with the Minister's Foreword to the *ACT Planning Strategy 2018* which refers to the vision as "being responsive to the future and resilient to change" – reflected in

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<sup>6</sup> M. E. Roberts, Jason J. Sharples, Andrew A. Rawlinson. *Incorporating ember attack in bushfire risk assessment*, p.6. <https://www.mssanz.org.au/modsim2017/H10/roberts.pdf>

<sup>7</sup> <https://www.canberratimes.com.au/national/act/from-bushfire-to-wild-firestorm-how-to-forecast-the-deadly-change-20190108-p50q4b.html>

Strategic Direction 3.2 “Reduce vulnerability to natural hazard events and adapt to climate change”.

13. This would also support the need to assess the layout of the Stage 2 streets as to whether they would prove difficult to navigate during emergency evacuation in a smoke-filled situation. In this context, GFA notes the provisions in *Table 3: Access standards for public roads for new estate development*<sup>8</sup> including: “Public road widths and design allow safe access and egress for firefighters while residents are evacuating an area”. GFA also notes the provision of edge roads to facilitate access by firefighting vehicles. It is not obvious, however, that the overall street layout will permit residents to exit the southern portion of Stage 2 rapidly in the event of an emergency if the entire suburb is being evacuated, especially if other suburbs in the area are also being evacuated at the same time. The provision of major roads and exit points to facilitate such evacuation appears to be limited over the whole proposed development area, presenting an additional risk for emergency egress in the long term.

#### **d) Support of native species**

14. Urbanisation inevitably changes the natural environment with a resultant loss in species and numbers, especially for ground-dwellers. Birds are the greater survivors as they mostly depend on trees and bushes rather than ground-level activities except those who forage for ground species such as rabbits. It has been observed that,

For every five additional mature trees retained in urban greenspace there is an increase in bird richness by 157% and an increase in woodland bird richness by >300%.

AND

Mature trees are keystone structures in urban environments. That is, they are disproportionately large providers of ecological features within an ecosystem.<sup>9</sup>

15. The Fenner School research is a welcome initiative that has resulted in retention of most existing trees in Stage 2, in contrast to Stage 1. There are still concerns relative to particularly sensitive species. For example, the Stage 1 Notice of Decision included “advice to the proponent to include the use of suitable endemic species within these areas to promote the movement and foraging of the Scarlet Robin”. This is unlikely to be effective without significant ongoing education of residents and monitoring of the long-term outcome. Presumably this also applies to Stage 2. Likewise, the 200 metre exclusion zone around the Little Eagle nest in Stage 1 was used to dismiss concerns of negative impacts from construction without explanation as to the rationale for the size of the exclusion zone<sup>10</sup>:

The proposal has demonstrated that no development including infrastructure and construction related activities will occur within exclusion zone specified under Rule R44 of the West Belconnen Concept Plan. As such the proposal did not need to address Criterion 44 of the concept plan. After further discussion with the Conservator of Flora and Fauna it was explained that the exclusion zone was established to mitigate impacts on the Little Eagle nesting site from construction. As such no special considerations or conditions were required in relation to the Little Eagle for this development proposal.

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<sup>8</sup> <http://203.9.249.10/e-registerfiles/pubnote/pdf/BUSHFIREMANAGE-201834846-01.pdf>

<sup>9</sup> Tree Simulation Paper (LaRoux et al)

<sup>10</sup> Reasons for Decision DA 201731203 (Notice of Decision – Stage 1), p.10.

16. Now, at Stage 2, it appears that the required breeding and foraging territory around each nest has not yet been adequately determined, since most movement studies have been of non-breeding birds. In a 2017 radio-tracking study of a newly-fledged juvenile by Olsen, J.<sup>11</sup>, the bird ranged over a gradually increasing area near the nest, reaching about 1km wide after the first two months [see diagram on next page]. Part of Stage 2 is within 1km of the Little Eagle nesting tree below the Strathnairn Arts Centre. The tracking study showed that the juvenile used roost trees throughout Stage 2 as it became stronger. This clearly suggests that the 200m diameter exclusion zone around the Strathnairn nesting tree is inadequate and inconsistent with the available evidence. This example of planning without consideration of adequate biodiversity data is not encouraging for retention of this and other species.

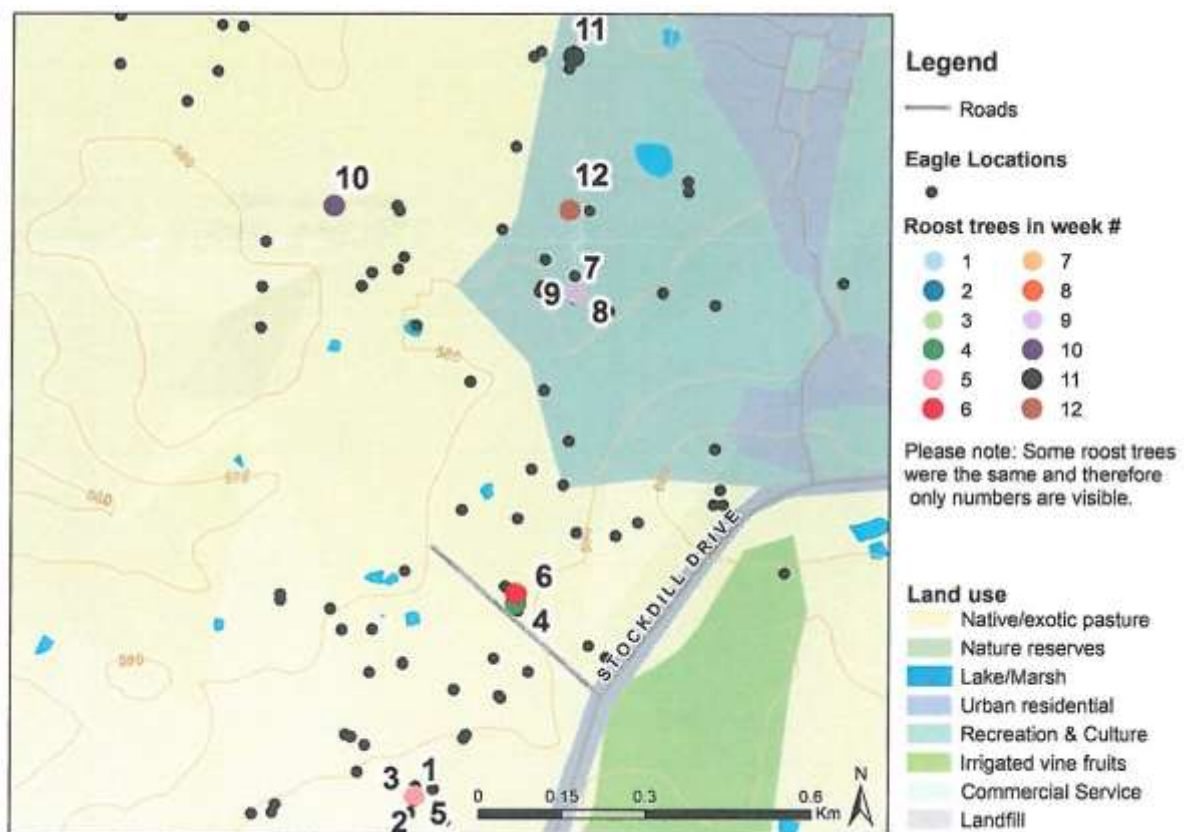


Figure 5. Roost trees used by the fledged juvenile Little Eagle in Weeks 1-12.

The above diagram from Olsen [10] covers the areas of Ginninderry Stages 1, 2 and 8 and the Ginninderra Estate on the golf course.

### e) Little Eagle research needs

17. GFA is aware of the Little Eagle Research Group in the ACT Environment Directorate's Wildlife Research section and has sought an explanation of the following matters from the Conservator<sup>12</sup>:

<sup>11</sup> Home-range and behaviour of a fledgling Little Eagle *Hieraaetus morphnoides* in the Australian Capital Territory, Olsen, Corella, 2017, 41: 88-98.

<sup>12</sup> Ginninderra Falls Association Little Eagle 20181130, correspondence to Executive Director, Environment (Conservator), emailed 30 Nov 2018.

- how close Little Eagles will tolerate such disruptive work before they abandon the nest;
  - whether they are likely to return to that nest once construction works have ceased and suburbia has settled down;
  - how open the access from the nest to appropriate foraging areas will need to be to encourage use of a suitable mature tree;
  - how many suitable nesting trees are needed in an area to cater for the Little Eagle, given that each pair uses different nests in successive years (Action Plan No. 35);
  - whether nesting pairs are territorial and do not share their nesting trees and foraging areas with other Little Eagles.
18. In the absence of such information, it appears to be presumptive to commence urban development in such close proximity to a known nesting tree. The creation of the Little Eagle Research Group in 2017 was presumably a result of awareness that greater understanding of the Little Eagle's habits was essential. It is, therefore, puzzling that progress on the two stages most relevant to the Little Eagle has continued, unless the purpose of the research was to retrospectively justify that development in this area would not, in fact, affect the Little Eagle adversely. To date, the Research Group has shown how far a Little Eagle will travel outside breeding season and has made a concerted effort to track the occurrence and success of nesting pairs but has not yet published any meaningful analysis of their needs and behaviour in the nesting process.
19. The home range of the Little Eagle has been stated as 65 square kms or 650,000 hectares which, at \$300,000 average price for blocks, 65 sq. km. has a value of \$3 billion.<sup>13</sup> The basic issue of concern, however, should be how resilient the Little Eagle is in response to urbanisation of its breeding and foraging habitat. The Little Eagle's preferred habitat in the ACT is woodland or farmland often near rivers, where not already occupied by Wedge-tailed Eagles. The *Birds of the ACT Atlas* reported eleven known established breeding nest sites in 1990.<sup>14</sup> Rae, on the other hand, reported a minimum of nine nesting pairs in 2017-2018 but with only three breeding successfully, the latter being the most important figure for conservation.<sup>15</sup>
20. There is some confusion over use of the two terms 'nesting pair' vs 'breeding pair' in different reports. The term 'nesting pairs' is not included in the recommended terminology<sup>16</sup> but seems to be used to include pairs that do not produce an egg. If, for instance, in a breeding season, eleven nesting pairs were located and produced six fledglings, then the number of breeding pairs must be somewhere between three and six. An understanding of why some pairs at a nesting site do not breed is essential – is it due to natural factors or to the effects of urbanisation?
21. The current figures need to be compared with historical knowledge. Studies by Mallinson in 1990<sup>17</sup> and others showed that Little Eagle pairs, like most raptors, nest and breed at the same nest or a nearby one, in well-established territories over a long period of time.

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<sup>13</sup> Presentation to Belconnen Community Council (21 Nov 2017) by Michael Mulvaney, Conservation Research, EPSDD.

<sup>14</sup> Taylor, I.M. and COG (1992) and NCPA, *Birds of the Australian Capital Territory: An Atlas*: Canberra.

<sup>15</sup> Rae, S. (2018) Little Eagles in the ACT and nearby NSW in 2017/2018. *Gang-gang* April 2018.

<sup>16</sup> Karen Steenhof, Michael N. Kochert, Carol L. McIntyre and Jessi L. Brown, "Coming to Terms About Describing Golden Eagle Reproduction", *Journal of Raptor Research*, 51(3):378-390 (2017).

<sup>17</sup> Mallinson, "A note on the breeding of the Little Eagle *Hieraaetus morphnoides* and other raptors in the Mt Mugga area, ACT", *Corella*, 1990.

The nests may be relocated from year to year up to 1.5km within the territory. There is no evidence of marked Little Eagle pairs moving long distances inside large home ranges to another nesting place.

22. In the Belconnen area, Little Eagle pairs are known to have used nests near Strathnairn Arts Centre, near Pegasus Riding School, on the Land's End property and on the CSIRO Ginninderra Field Station in the north of Belconnen. All of these sites are potentially earmarked for urban development. The Ginninderry Development is likely to add to decline in Little Eagle numbers by reducing the area of woodland between the urban fringe and the Murrumbidgee River. The river itself is likely to be occupied by the territories of the larger Wedge-tailed Eagle which tends to exclude Little Eagles. It is the immature birds that disperse widely across the country.<sup>18</sup> Loss of breeding habitat in the ACT, therefore, will affect the population of Little Eagles across Australia. Similar results can be expected with other species as urbanisation takes precedence over nature.
23. A blanket EIS exemption was granted for the entire Ginninderry project in 2018. Subsection 129(k) stipulates, however, that the decision-maker must still consider:

- (k) if an EIS exemption is granted under section 211H (EIS exemption—decision) in relation to the proposed development—
- (i) the EIS exemption; and
  - (ii) the recent study; and
  - (iii) the revised EIS exemption application under section 211G (EIS exemption application—revision).

As new information becomes available, therefore, biodiversity issues must still be reconsidered in each new DA.

24. It is noted here that the Little Eagle Action Plan has the following objective:

A better understanding of the ecology of the Little Eagle is developed and used to identify and manage causes of population decline.

The Plan then stipulates the following action:

1. Participate in and support survey, monitoring and research by tertiary institutions; support involvement by community based organisations to:
- monitor the breeding success of the Little Eagle; and
  - improve understanding of habitat use and home range of remaining breeding birds in ACT

This suggests an intent for such research to be conducted before further reduction in the availability of suitable habitat.

## Summary

25. Costs associated with this development will be much greater than those of existing suburbs due to the greater need for establishment and maintenance of WSUD infrastructure relative to the number of dwellings, as well as the requirement for the Emergency Services Agency to have adequate strategies, training and equipment to deal with the high danger of severe-extreme bushfires into the foreseeable future.

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<sup>18</sup> Taylor, I.M. and COG (1992) and NCPA, *op.cit.* p.52.



26. Current planning should be carried out such as to fulfil the ACT Planning Strategy 2018's vision to make the ACT a Sustainable and Resilient Territory, especially:

Strategic Direction 3.2 "Reduce vulnerability to natural hazard events and adapt to climate change."

AND

Direction 3.5 "Protect biodiversity and enhance habitat connectivity to improve landscape resilience."

27. At this stage of Canberra's development, with the majority of habitat having been replaced by urban development, knowledge about local species of both flora and fauna should be obtained before plans are designed, not afterwards. This needs a clear, simple bureaucratic process to ensure that potentially vulnerable species are identified in all areas of the ACT before any decisions are made about urbanisation of a greenfields site.

28. The expected infrastructure and ongoing maintenance costs associated with a particular location should be evaluated before any decisions are made about development.

29. This DA does not adequately cover these issues.



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