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## 3 Likely Approvals Pathway

### 3.1 Commonwealth Legislation

#### 3.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

The *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places (Department of the Environment, 2013).

Part 3 of the Act lists nine matters of National Environmental Significance (NES) that may require approval from the Commonwealth Minister for the Environment.

Matters of NES relative to the proposal include Box-Gum Woodland CEEC and Hoary Sunray. EPBC Act significant impact assessments conducted as part of the SIS concluded that the Proposal is likely to have a significant impact on the Box-Gum Woodland CEEC and as such as referral to the Commonwealth Minister for the Environment is required.

An action taken by any person on Commonwealth land that is likely to have a significant impact on the environment (Section 26(1)) or an action taken by any person outside of Commonwealth land that is likely to have a significant impact on Commonwealth land (Section 26(2)) may require approval from the Commonwealth Minister for the Environment. A detailed environmental assessment of the preferred option would determine the need for Commonwealth approval and consultation with the Commonwealth Department of the Environment is required.

### 3.2 NSW Legislation

#### 3.2.1 *Environmental Planning Assessment Act 1979*

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the principal legislation guiding land use development in NSW. Key parts of the Act include:

- Section 5A provides a seven part test in deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats;
- Section 111 outlines duty of a determining authority to consider to the fullest extent possible all matters affecting or likely to affect the environment by reason of an activity;
- Section 112 outlines an Environmental Impact Statement is required when an activity is prescribed or may have a significant impact on the environment; and
- Clause 228 of the *Environmental Planning and Assessment Regulation 2000* identifies factors to be taken into account concerning impact of an activity on the environment.

The proposal requires approval under Part 5 or 5.1 of the EP&A Act. Council and OEH are the joint approval authorities and consultation with other concurrence or approval agencies is required.

An Environmental Assessment (EA) under the EP&A Act is required for the proposal.

### 3.2.2 Queanbeyan Local Environmental Plan

Queanbeyan Local Environmental Plan 2012 (LEP) applies to the study area. The impact area is predominantly located within land zoned E4 Environmental Living, E2 Environmental Conservation and SP2 Infrastructure (Roads). Small sections of the impact area are located in land zoned R2 Low Density Residential, W1 Natural Waterways and RE1 Public Recreation. The development of roads is permitted with consent within zones E2 and E4.

Clause 5.12 states:

*(1) This Plan does not restrict or prohibit, or enable the restriction or prohibition of, the carrying out of any development, by or on behalf of a public authority, that is permitted to be carried out with or without development consent, or that is exempt development, under State Environmental Planning Policy (Infrastructure) 2007.*

### 3.2.3 State Environmental Planning Policies

State Environmental Planning Policy (Infrastructure) 2007 (SEPP (Infrastructure)) facilitates infrastructure in NSW by identifying environmental assessment categories for different types of infrastructure. Clause 94(1) of SEPP (Infrastructure) identifies development permitted without consent and states:

*“Development for the purpose of a road or road infrastructure facilities may be carried out by or on behalf of a public authority without consent on any land. However, such development may be carried out without consent on land reserved under the National Parks and Wildlife Act 1974 only if the development:*

*(a) is authorised by or under the National Parks and Wildlife Act 1974, or*

*(b) is, or is the subject of, an existing interest within the meaning of section 39 of that Act, or*

*(c) is on land to which that Act applies over which an easement has been granted and is not contrary to the terms or nature of the easement.”*

The proposed road is not likely to impact land reserved under the *National Parks and Wildlife Act 1974*.

A public road is defined in Clause 94(a) as any road that is opened or dedicated as a public road, whether under the *Roads Act 1993* or any other Act or law. Pursuant to Clause 94(1) the proposal is considered a public road and would be permitted without consent.

### 3.2.4 Additional State Legislative Requirements

Table 3.1 details some of the legislation that applies to the study area, the purpose of the legislation and its relevance to the Proposal.

**Table 3.1 – State Government Legislative Requirements and Approvals**

<b>Legislation (Responsible Agency)</b>	<b>Purposes of Legislation</b>	<b>Relevance to the Proposal and Approval Requirements</b>
<i>Contaminated Land Management Act, 2008</i> (EPA)	<p>The Act establishes a process for investigating and (where appropriate) remediating land that the Environment Protection Authority (EPA) considers to be contaminated significantly enough to require regulation under Division 2 of Part 3.</p> <p>Furthermore, under Section 60 a person whose activities have contaminated land or a landowner whose land has been contaminated is required to notify the EPA when they become aware of the contamination.</p>	Geotechnical investigations should confirm presence or absence of contaminated soils through past land uses, including application of agricultural chemicals.
<i>Crown Lands Act 1989</i> (DPI – Catchments and Lands)	The Act provides for management of Crown land including occupation, use, sale, lease, license, dedication or reservation.	If it is determined that Crown Land is present in the impact area, consultation should occur with Department of Trade and Investment and an easement or approval may be required prior to working on the land.
<i>Dangerous Good (Road and Rail Transport Act) 2008</i> (EPA and WorkCover NSW)	The EPA regulates on-road transport of dangerous goods while WorkCover regulates activities prior to transport, including correct classification, packaging and labelling.	If dangerous goods are used during construction then a license may be required.
<i>Environmentally Hazardous Chemicals Act 1985</i> (EPA)	<p>The Act regulates the use and storage of environmentally hazardous chemicals or declared chemical waste.</p> <p>It provides the OEHL with assessment and control mechanisms for chemicals and chemical wastes.</p>	This Act will only apply if environmentally hazardous chemicals are used during construction of the Proposal and there is potential for a significant impact on the environment.

Legislation (Responsible Agency)	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
<p><i>Fisheries Management Act 1994</i> DPI (Fishing and Aquaculture)</p>	<p>The FM Act applies to all waters within the limits of NSW, except where Commonwealth legislation applies. Relevant sections are discussed:</p> <ul style="list-style-type: none"> <li>- Section 200 requires a permit from the Minister for Primary Industries for Council to carry out dredging or reclamation work</li> <li>- Section 219 requires a permit from the Minister for Primary Industries or approval under this or another Act to create an obstruction that would block passage of fish</li> </ul> <p>Section 220ZZ the Determining Authority must consider whether the Proposal will result in a significant impact on threatened species, population or ecological communities, or their habitats.</p>	<p>DPI (Fishing and Aquaculture) should be consulted with and may require:</p> <ul style="list-style-type: none"> <li>- approval for dredging and reclamation under the <i>Fisheries Management Act 1994</i></li> <li>- approval for temporarily blocking fish passage during construction under the <i>Fisheries Management Act 1994</i></li> <li>- road / bridge to be designed in accordance with “Fish passage requirements for waterway crossings” (2003) and “Policy and Guidelines for Fish Friendly Waterway Crossings” (NSW Department of Primary Industries)</li> <li>- no net deterioration of water quality.</li> </ul>
<p><i>Heritage Act 1977</i> (OEH)</p>	<p>The Heritage Act is administered by the Heritage Office within the Office of Environment &amp; Heritage and concerns protection and restoration and enhancement of State heritage items. The relevant provisions of the Act are:</p> <ul style="list-style-type: none"> <li>- Section 139 prohibits disturbance of a relic unless an excavation permit is obtained from the Heritage Office</li> <li>- Section 146 requires notification to the Heritage Office of any discovery of relics.</li> </ul>	<p>Specialist heritage assessment (Cultural Heritage Management Australia, 2012) did not identify any items of non-indigenous heritage value in the study area.</p>
<p><i>National Parks and Wildlife Act 1974</i> (OEH)</p>	<p>The Act aims to conserve nature and objects, places or features of cultural value.</p> <ul style="list-style-type: none"> <li>- An Aboriginal Heritage Impact Permit (AHIP) is required under Section 90 to harm or desecrate Aboriginal objects or places.</li> </ul>	<p>Specialist indigenous heritage assessment (Cultural Heritage Management Australia, 2012) identified several heritage items in the study area.</p> <p>An AHIP is required to be obtained over the entire impact area (in consultation with registered Aboriginal parties).</p>

Legislation (Responsible Agency)	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
<i>Native Vegetation Act 2003</i> (OEH)	The Act aims to prevent broad scale clearing, protect native vegetation of high conservation value and improve conditions of existing native vegetation.	Tree clearing will be required for future road works.  Under Clause 25 (h) of the Act, any clearing carried out as part of an activity assessed under Part 5 of the EP&A Act is excluded from the application of the Act, if the Determining Authority has complied with that Part. The Proposal is likely to be considered under Part 5 or Part 5.1 of the EP&A Act.
<i>Noxious Weeds Act 1993</i> (DPI)	Objects of the Act include reducing negative impact of weeds on the economy, community and environment of NSW.	Section 13 and 14 require public authorities' to control noxious weeds on their own land.
<i>Protection of the Environment Operations Act 1997</i> (OEH)	The POEO Act primarily regulates pollution control and waste disposal in NSW and is administered by the OEH.	Reasonable and feasible environmental measures must be implemented to minimise pollution as a result of the Proposal.
<i>Rural Fires Act 1997</i> (NSW RFS)	Under Section 63 public authorities must take all practicable steps to prevent the occurrence and spread of bushfires on or from land vested in or under its control or management.	Consultation should occur with NSW Rural Fire Service.
<i>Soil Conservation Act 1938</i> (OEH)	The Act allows for conservation of soil resources and erosion mitigation.	Notices can be issued under Section 15A to control erosion or degradation.
<i>Threatened Species Conservation Act 1995</i> (OEH)	The TSC Act identifies threatened species, populations, endangered ecological communities, critical habitats and key threatening processes.  Section 94A requires the proponent to consider potential impact on threatened species, population or ecological communities, or their habitats.	Following preparation of the SIS, concurrence of the Director-General of the Department of Premier and Cabinet (which includes the OEH) needs to be sought by Council prior to determination (nghenvironmental, 2013).

Legislation (Responsible Agency)	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
<i>Water Management Act 2000</i> (DPI- Office of Water)	<p>A water use approval may be required to dewater footings and trenches during construction (Section 89).</p> <p>Works within 40m of a waterway generally required a Controlled Activity Approval (Section 91).</p> <p>Taking groundwater that is not managed by a water sharing plan requires a groundwater licence under Section 113 of the <i>Water Act 1912</i>.</p>	<p>Consultation would be required with the NSW Office of Water prior to construction of the road.</p> <p>Clause 38 of the Water Management (General) Regulation 2011 states public authorities are exempt from the requirement to obtain a Controlled Activity Approval.</p> <p>Guidelines issued by the (then) Department of Water and Energy are useful for applying Government objectives for watercourse protection. Relevant guidelines relate to the riparian zone, in stream works, outlet structures and vegetation management (nghenvironmental, 2013).</p>
<i>Waste Avoidance and Resource Recovery Act 2001</i> (OEH)	<p>Objects of the Act include encouraging efficient use of resources and reducing environmental harm in accordance with the principals of ecologically sustainable development. The Act establishes the waste hierarchy of avoidance, resource recovery and disposal.</p>	<p>The Director-General of the OEH may develop a waste strategy for the state (refer NSW Waste Avoidance and Resource Recovery Strategy 2007, DECCW, 2007).</p>

## 4 Key Environmental Issues

Key environmental issues to be considered in the road alignment are presented in Table 4.1.

Information in Table 4.1 is based on the assumption that impacts are confined to the 80 m corridor identified by the QCC and there have been no changes in legislation or new findings (i.e. archaeological or ecological discoveries) since specialist reports were conducted. Risk is based on current information and additional studies may be required as part of the EA. Fieldwork such as geo-technical investigations and surveying would require individual REFs.

The Proposal has been examined and ranked based on potential to cause environmental impact, need for other approvals and licences and risk of precluding the Proposal from proceeding.

**Low** – simple and easy to adopt controls are sufficient to reduce risk to the environment, few or readily achievable approvals and licences with limited consultation.

**Medium** – controls are required to reduce risk to the environment, environmental impact would be noticeable and require additional investigation, licences and approvals may be required with consultation.

**High** – specialist investigations and controls are required and would need verification that they have been implemented correctly. Approvals and licences may be required and may cause time delays. Post-construction monitoring may be required.

**Table 4.1 – Key Environmental Issues**

Environmental Issue	Risk	Comment
<b>Flora and Fauna</b>	<b>High</b>	<p>The Species Impact Statement conducted by nghenvironmental, in December 2013 determined there would be significant impact on a number of threatened fauna, flora and EEC (nghenvironmental, 2013).</p> <p>Mitigation measures that must be implemented are:</p> <ul style="list-style-type: none"> <li>▪ specific timing of works to avoid fauna breeding periods;</li> <li>▪ pre-clearance fauna surveys;</li> <li>▪ relocation of habitat features;</li> <li>▪ best practice soil and water management;</li> <li>▪ fauna fencing and underpasses;</li> <li>▪ advisory signage alerting drivers to the presence of fauna;</li> <li>▪ maintenance of an 80km speed limit;</li> <li>▪ vegetation management plan for the site, including weed management and site rehabilitation sub-plans;</li> <li>▪ long-term monitoring and adaptive management; and</li> <li>▪ offsetting of residual impacts.</li> </ul> <p>These mitigation measures are detailed in the SIS.</p> <p>Considering effective implementation of mitigation measures, the conclusion remained that impact of the proposal on the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland EEC / CEEC, Rosenberg's Goanna and Speckled Warbler would be significant (nghenvironmental, 2013).</p> <p>Therefore, under the EPBC Act, as the proposal is likely to have a significant impact on matters of NES, referral to the Environment Minister is required.</p> <p>Furthermore, under the TSC Act, following the preparation of the SIS, concurrence of the Director-General of the Department of Premier and Cabinet (which includes the OEH) needs to be sought by QCC prior to determination.</p> <p>Figures of fauna habitat, biolinks within the locality, fauna survey results, vegetation types within the study area and locality, and flora survey results are attached as Appendix A.</p>

Environmental Issue	Risk	Comment
<b>Water Quality</b>	High	<p>Work in and around waterways is considered a high risk.</p> <p>DPI (Fishing and Aquaculture) should be consulted with and may require:</p> <ul style="list-style-type: none"> <li>- approval for dredging and reclamation under the <i>Fisheries Management Act 1994</i></li> <li>- approval for temporarily blocking fish passage during construction under the <i>Fisheries Management Act 1994</i></li> <li>- road / bridge to be designed in accordance with “Fish passage requirements for waterway crossings” (2003) and “Policy and Guidelines for Fish Friendly Waterway Crossings” (NSW Department of Primary Industries)</li> <li>- no net deterioration of water quality.</li> </ul> <p>All works should be consistent with the RMS Water Policy and Code of Practice for Water Management.</p>
<b>Visual Impact</b>	High	<p>The impact area will cover approximately 26 ha, including the removal of approximately 19 ha of native vegetation (nghenvironmental, 2013).</p> <p>Visual impact will also include the introduction of street lighting and traffic in close proximity to residences.</p> <p>A visual impact assessment may be required.</p> <p>Landscape Architecture would mitigate some of the visual risk and may be considered.</p>
<b>Alignment</b>	High	<p>A consistency report must be conducted to ensure that all specialists have considered the same impact area and proposed road alignment.</p>
<b>Noise</b>	Medium	<p>Noise during construction and from ongoing use of the road is required to be assessed.</p> <p>Mitigation measures such as noise barriers and double glazed window on nearby residences may be required, subject to further investigation.</p>
<b>Traffic and Access</b>	Medium	<p>Heritage sites / ecological values are at risk of being damaged via access and ancillary works (nghenvironmental, 2013; Cultural Heritage Management Australia 2012).</p> <p>Where works impact upon the Box-Gum Woodland EEC, fauna habitat in good condition or groups of Hoary Sunray (or in close proximity to groups of plants outside of the subject site), all works would be confined within the final road formation unless it is absolutely necessary to utilise the 5 m buffer area (nghenvironmental, 2013).</p> <p>It is likely that traffic would increase on adjoining roads, particularly during construction.</p>



Environmental Issue	Risk	Comment
<b>Heritage</b>	Medium	<p>The archaeology report conducted by Cultural Heritage Management Australia (2012) concluded that provided impacts are confined within the 80 m corridor identified by QCC, the overall impacts of the proposal on Heritage will be low within a local context and very low within a regional context (pg. 106). This conclusion was reached on the following basis:</p> <ul style="list-style-type: none"> <li>▪ impacts of the activity itself will be relatively low within a local context;</li> <li>▪ with the exception of Jumping Creek area, much of the area comprises area of low heritage potential;</li> <li>▪ four sites (including one large site 57-2-635) will be directly impacted by the development;</li> <li>▪ a further two sites are vulnerable to indirect / inadvertent impact by general construction activities; and</li> <li>▪ similar environmental contexts and resources are present in areas that will not be impacted by the current development, both in the immediate area and further afield.</li> </ul> <p>Prior to any impacts occurring a S90 AHIP must be obtained over the entire impact area (in consultation with registered Aboriginal parties) with specific conditions listed in section 10 of the report (Cultural Heritage Management Australia, 2012).</p> <p>No registered non-indigenous heritage items will be impacted on by the proposal (Cultural Heritage Management Australia, 2012).</p>
<b>Landform, Geology and Soil</b>	Medium	<p>Detailed geotechnical reporting would be required prior to finalising a road design.</p> <p>Steep areas present risk of erosion and subsequent sedimentation, subject to additional survey information.</p> <p>Soil types also vary risk of erosion.</p> <p>There is also the risk of uncovering contaminated soil.</p>
<b>Other Infrastructure</b>	Medium	<p>The study area includes infrastructure such as power lines and water mains. Consultation is required with infrastructure providers in the study area prior to detailed design.</p>
<b>Land Use</b>	Medium	<p>Land use in the study area and immediate surrounds includes private residential area, environmental conservation / management areas.</p> <p>Consultation may be required with private land holders and infrastructure providers.</p>
<b>Social and Economic</b>	Medium	<p>Community consultation strategy should be developed to mitigate risk of community opposition to the proposal.</p> <p>Exhibition of an EA may be required.</p>
<b>Cumulative</b>	Medium	<p>Cumulative impact of the proposal and other developments occurring in the area (such as the residential estate to the east) must be assessed.</p>
<b>Contamination</b>	Medium	<p>No records of contamination were listed in the Queanbeyan LGA.</p> <p>Geotechnical investigations would confirm presence or absence of contaminated soils through past land uses, including application of agricultural chemicals.</p>

Environmental Issue	Risk	Comment
<b>Air Quality, Climate and Climate Change</b>	Low	<p>Climate change has potential to result in warmer temperatures, increased sea level and increased storm intensity (Intergovernmental Panel on Climate Change, 2007). The future road should be designed to appropriate standards to withstand storm intensities likely to occur.</p> <p>Bridge height is to consider the latest flood data.</p> <p>There would be additional greenhouse gas produced from the production and use of the road.</p>
<b>Bushfire</b>	Low	<p>A constructed road does not present a risk to life or property from bushfire.</p> <p>Hot works increase risk of bushfire in the construction period.</p>

## 5 Conclusion

Several high risks have been identified for the Proposal. At this stage, high risks include: flora and fauna, water quality, visual impact and alignment.

The following additional information will be required prior to commencement of works:

- An EA is required for the Proposal to consider, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of an actively.
- Additional investigations that may be required for the Environmental Assessment include: visual, noise, geotechnical (presence / absence of contamination, information on geology).
- A consistency report must be conducted to ensure that all specialists have considered the same impact area and proposed road alignment. The EDE must be designed in the corridor investigated by the specialists, otherwise additional ecology and archaeological investigation should occur.
- An AHIP is required to be obtained over the entire impact area (in consultation with registered Aboriginal parties).
- A consultation strategy should also be developed to consider the community and infrastructure providers.
- Several approvals will be required for the project including approval for dredging and reclamation under the *Fisheries Management Act 1994*.

## 6 References

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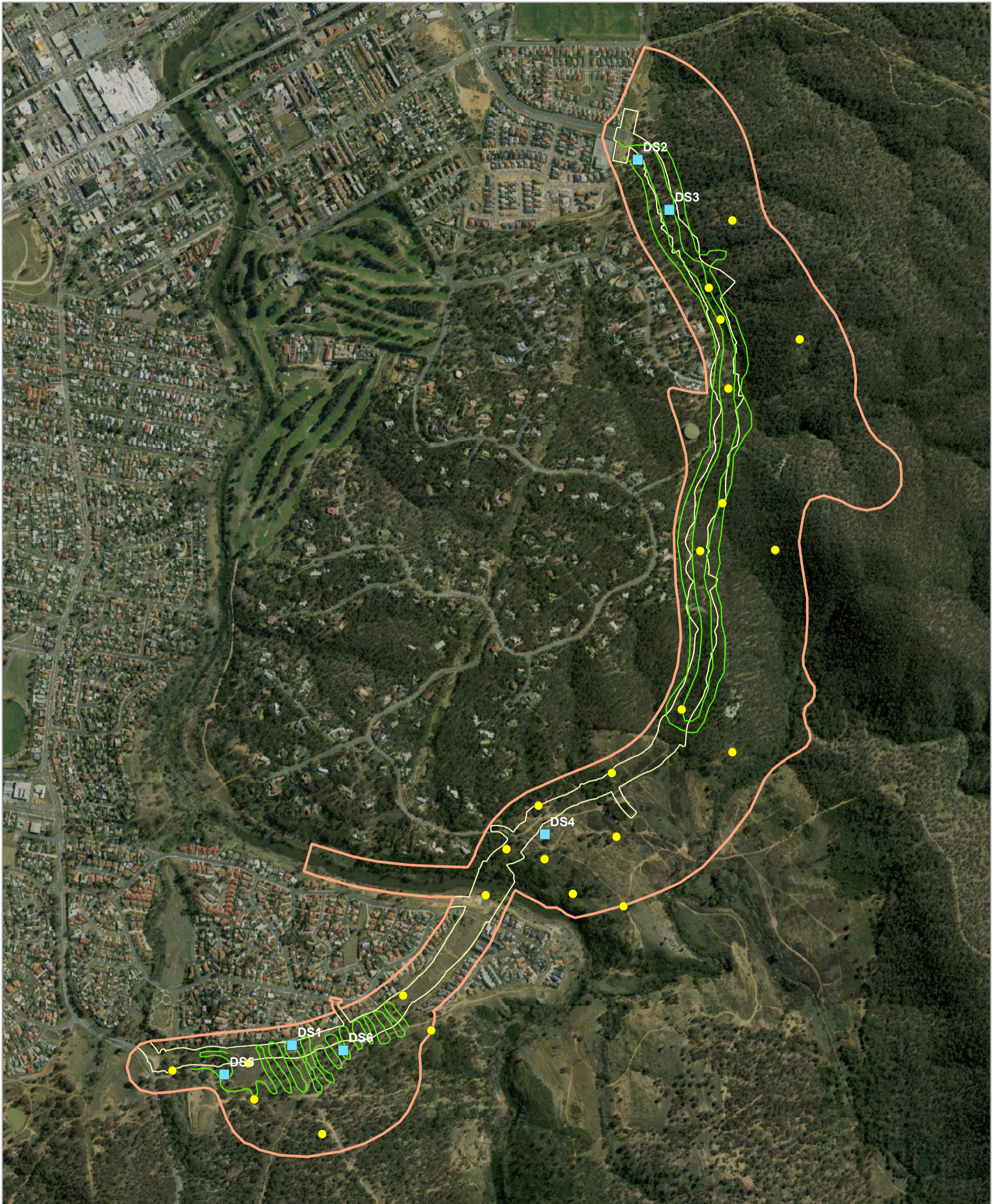
Queanbeyan City Council, Exhibition Layout

Queanbeyan Local Environmental Plan 2012

## **Appendix A – Constraints Maps**



# Ellerton Drive extension - Flora survey effort within the study area



- Study area
- Subject site
- Flora survey effort
- Quadrat
- Inspection point
- Threatened species transect

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Ref: 4733 - 2-1  
Author: DM

ngh environmental

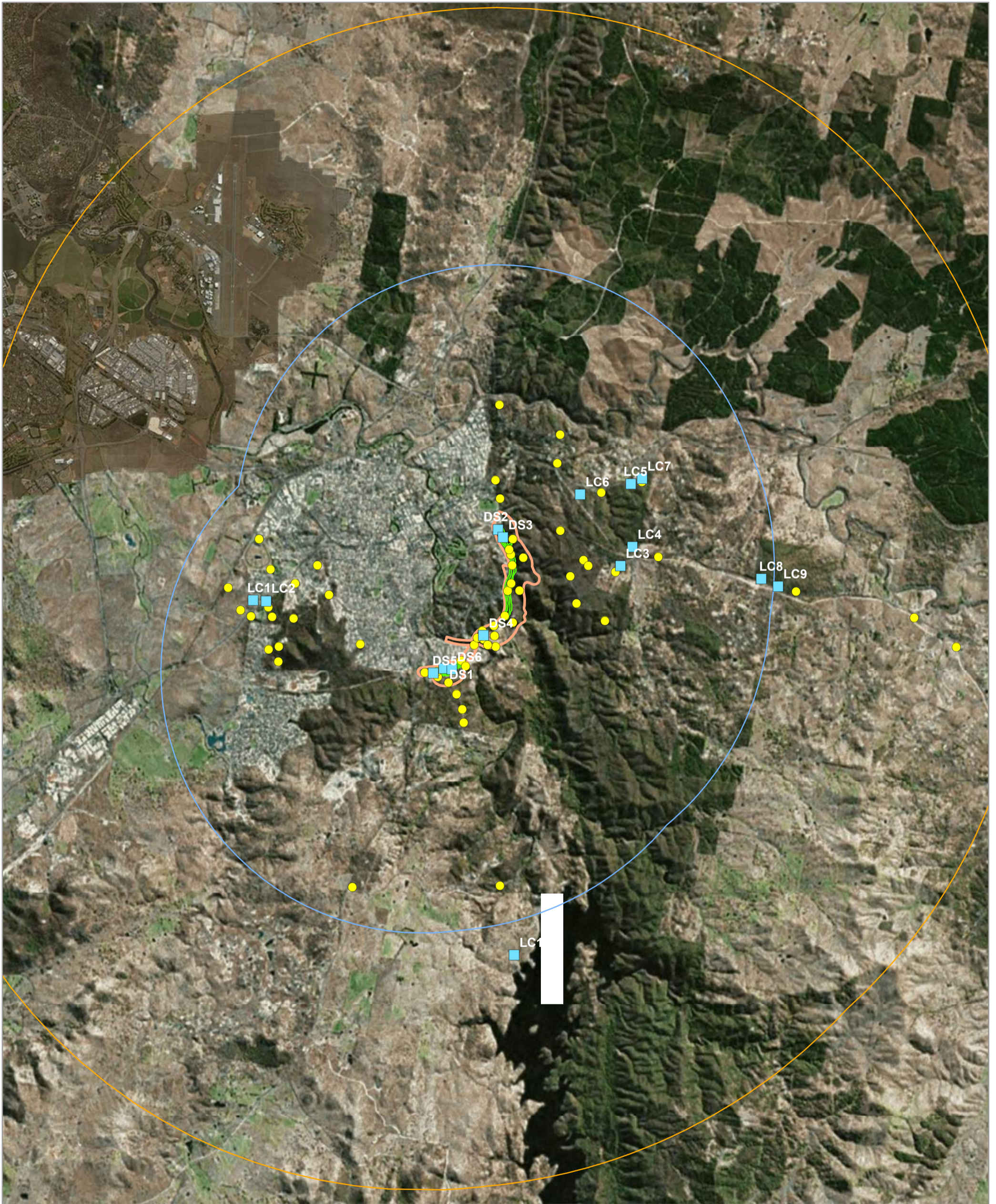


**Notes:**  
- Field data collected by nghenvironmental field staff (October 2012)  
- Development footprint and aerial imagery provided by QCC

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# Ellerton Drive extension - Flora survey effort within the locality



- Study area
- 5km buffer
- 10km buffer
- Flora survey effort
- Quadrat
- Inspection point
- Threatened species transect

0 1 2 Kilometres

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 Author: DM

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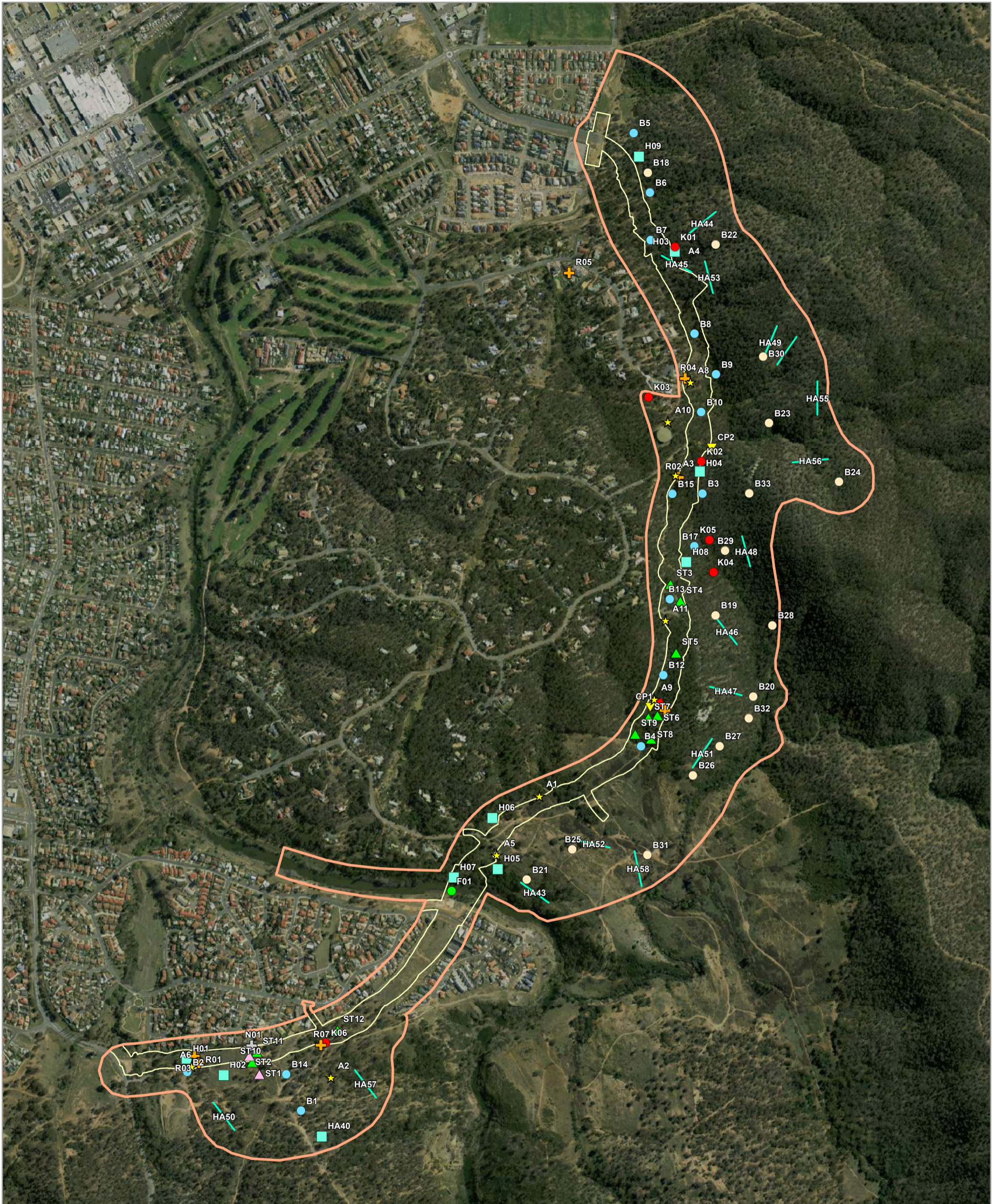


**Notes:**  
 - Field data collected by nghenvironmental field staff (October 2012)  
 - Base map sourced from ESRI Online © 2010 Microsoft Corporation and its data suppliers

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# Ellerton Drive extension - Fauna survey effort within the study area



- |  |  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li><span style="border: 1px solid orange; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Study area</li> <li><span style="border: 1px solid yellow; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Subject site</li> </ul> | <ul style="list-style-type: none"> <li><span style="color: blue;">★</span> 2012 fauna survey effort</li> <li><span style="color: blue;">★</span> Anabat</li> <li><span style="color: blue;">●</span> Bird census</li> <li><span style="color: green;">●</span> Frog census</li> <li><span style="color: red;">●</span> Koala scat search</li> <li><span style="color: yellow;">▼</span> Koala call playback / Spotlight</li> <li><span style="color: orange;">+</span> Diurnal reptile search</li> <li><span style="color: grey;">+</span> Nocturnal reptile search</li> <li><span style="color: purple;">▲</span> Stag watch</li> <li><span style="color: cyan;">■</span> Habitat quadrat assessment</li> </ul> | <ul style="list-style-type: none"> <li><span style="color: orange;">●</span> 2013 fauna survey effort</li> <li><span style="color: orange;">●</span> Bird census</li> <li><span style="color: cyan;">—</span> Habitat transect assessment</li> <li><span style="color: green;">▲</span> Stagwatch</li> </ul> |
|--|--|--|

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Author: DM

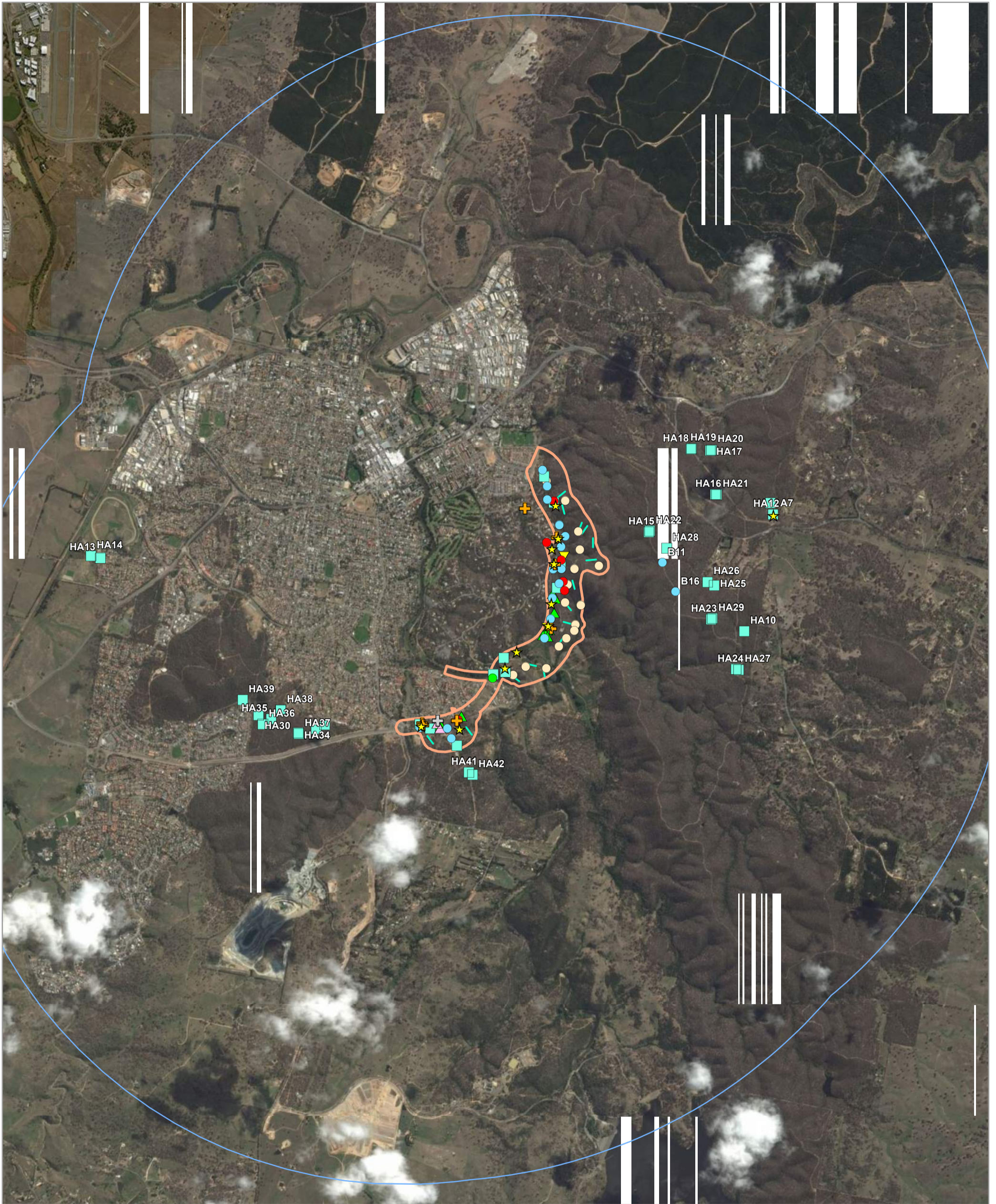


**Notes:**  
- Field data collected by nghenvironmental field staff (October 2012)  
- Development envelope and aerial imagery provided by QCC

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# Ellerton Drive extension - Fauna survey effort within the locality



- |                                 |                                 |                                 |
|---------------------------------|---------------------------------|---------------------------------|
| Study area                      | Koala scat search               | <b>2013 fauna survey effort</b> |
| 5km buffer                      | Koala call playback / Spotlight | Bird census                     |
| <b>2012 fauna survey effort</b> | Diurnal reptile search          | Habitat transect assessment     |
| Anabat                          | Nocturnal reptile search        | Stagwatch                       |
| Bird census                     | Stag watch                      |                                 |
| Frog census                     | Habitat quadrat assessment      |                                 |

**Notes:**  
 - Field data collected by nghenvironmental field staff (October 2012)  
 - Development envelope and aerial imagery provided by QCC  
 - Base map sourced from ESRI Online © 2010 Microsoft Corporation and its data suppliers

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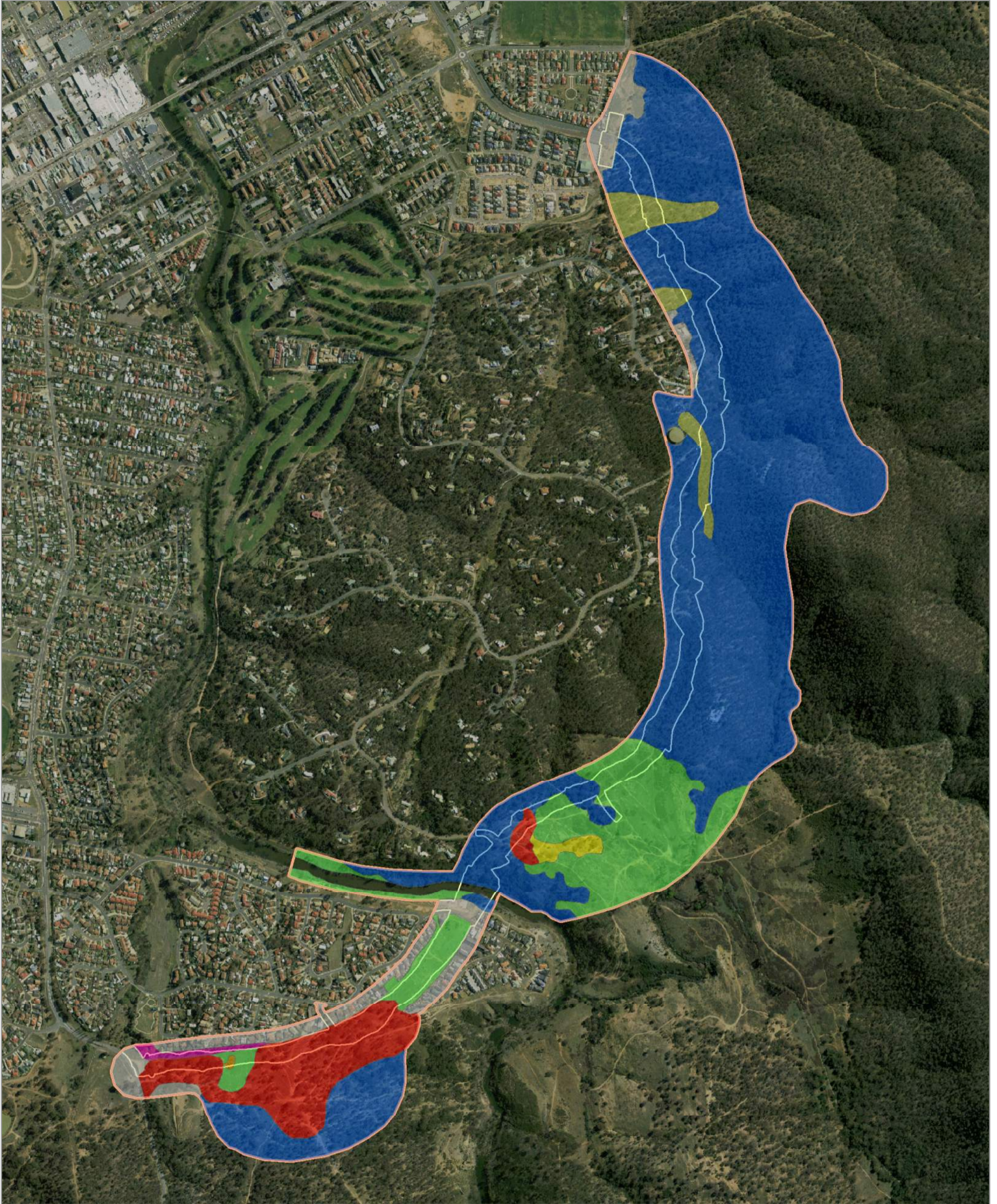
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# Ellerton Drive extension - Vegetation types within the study area



## Vegetation types

- South Eastern Tablelands Dry Shrub/Grass/Herb Forest (Box-Gum Woodland, CEEC EPBC)
- South Eastern Tablelands Dry Shrub/Grass/Herb Forest (Box-Gum Woodland, EEC TSC)
- Tablelands Acacia/Grass/Herb Dry Forest
- Tablelands Dry Shrub/Tussock Grass Forest (Dry Forest)
- Planted native vegetation
- Silver Wattle
- Exotic vegetation
- Disturbed

Study area

Subject site

## Notes:

- Field data collected by nghenvironmental field staff (October 2012)
- Aerial imagery and development envelope provided by QCC

0 125 250 Meters

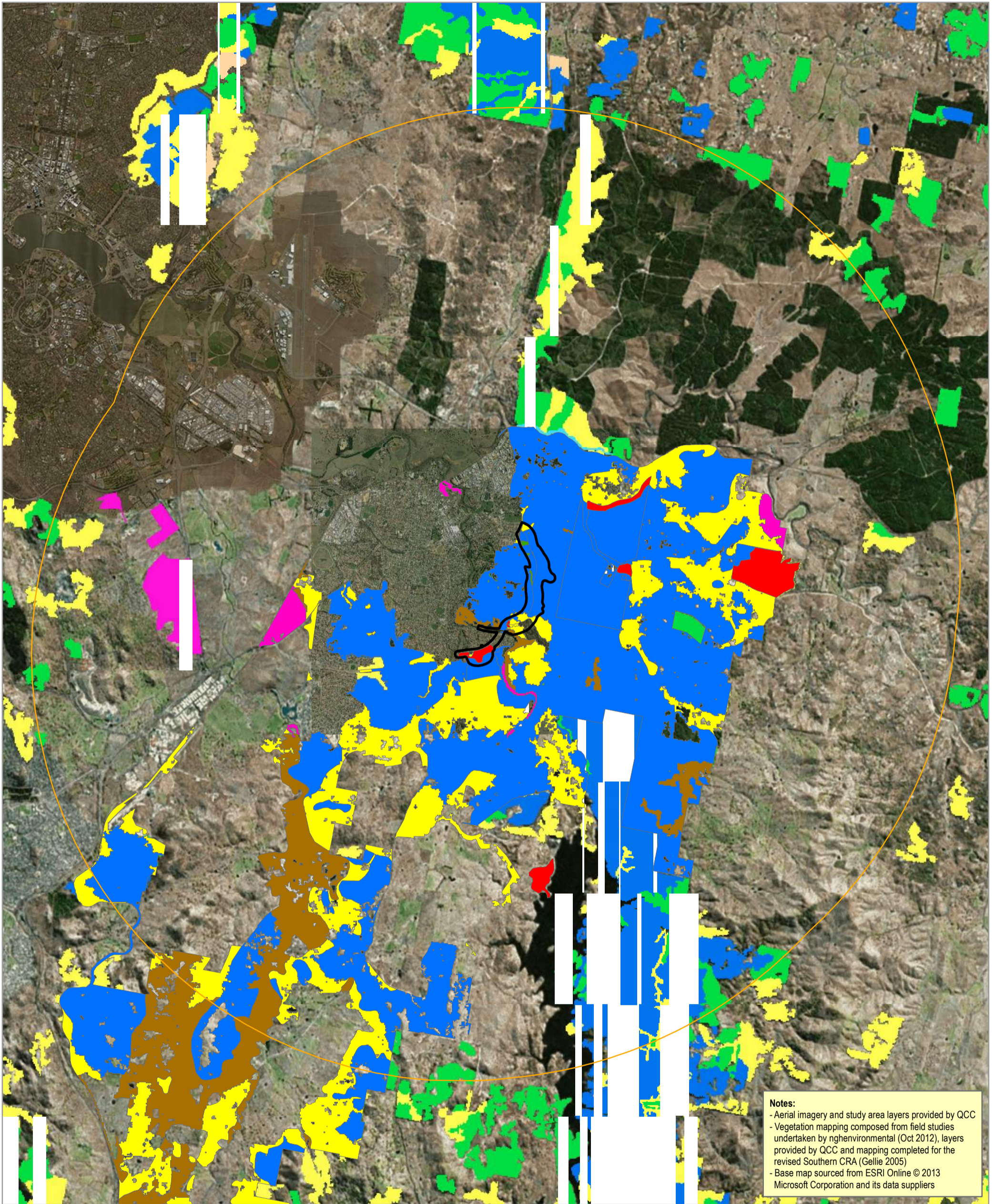
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Ref: 4733 - 3-1  
Author: DM

**ngh** environmental





# Ellerton Drive extension - Vegetation types within the locality



**Notes:**  
 - Aerial imagery and study area layers provided by QCC  
 - Vegetation mapping composed from field studies undertaken by nghenvironmental (Oct 2012), layers provided by QCC and mapping completed for the revised Southern CRA (Gellie 2005)  
 - Base map sourced from ESRI Online © 2013 Microsoft Corporation and its data suppliers

- Study area
- 10km Buffer
- Vegetation types**
- South Eastern Tablelands Dry Shrub/Grass/Herb Forest (Box-Gum Woodland, EPBC)
- South Eastern Tablelands Dry Shrub/Grass/Herb Forest (Box-Gum Woodland, TSC)
- Tablelands Acacia/Grass/Herb Dry Forest
- Tablelands Dry Shrub/Tussock Grass Forest (Dry Forest)

- Northern Slopes Dry Grass Woodland (Box-Gum Woodland, TSC)
- Eastern Tableland Dry Shrub/Grass Forest
- Riparian Acacia Shrub/Grass/Herb Forest
- Tableland Dry Herb/Grass Woodland
- Widespread Tablelands Dry Shrub Grass Forest
- Grassland Woodland Mosaic
- Native Grassland

0 1 2 Kilometres

A3 @ 1:85000  
 Ref: 4733 - 3-2  
 Author: DM

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# Ellerton Drive extension - Hoary Sunray populations recorded within the study area



- Study area
- Subject site
- Hoary Sunray populations
- Number of individuals
- Up to 200
- 200 - 499
- 500 - 999
- 1000+

0 125 250 Meters

A3 @ 1:11000  
Ref: 4733 - 4-1  
Author: DM

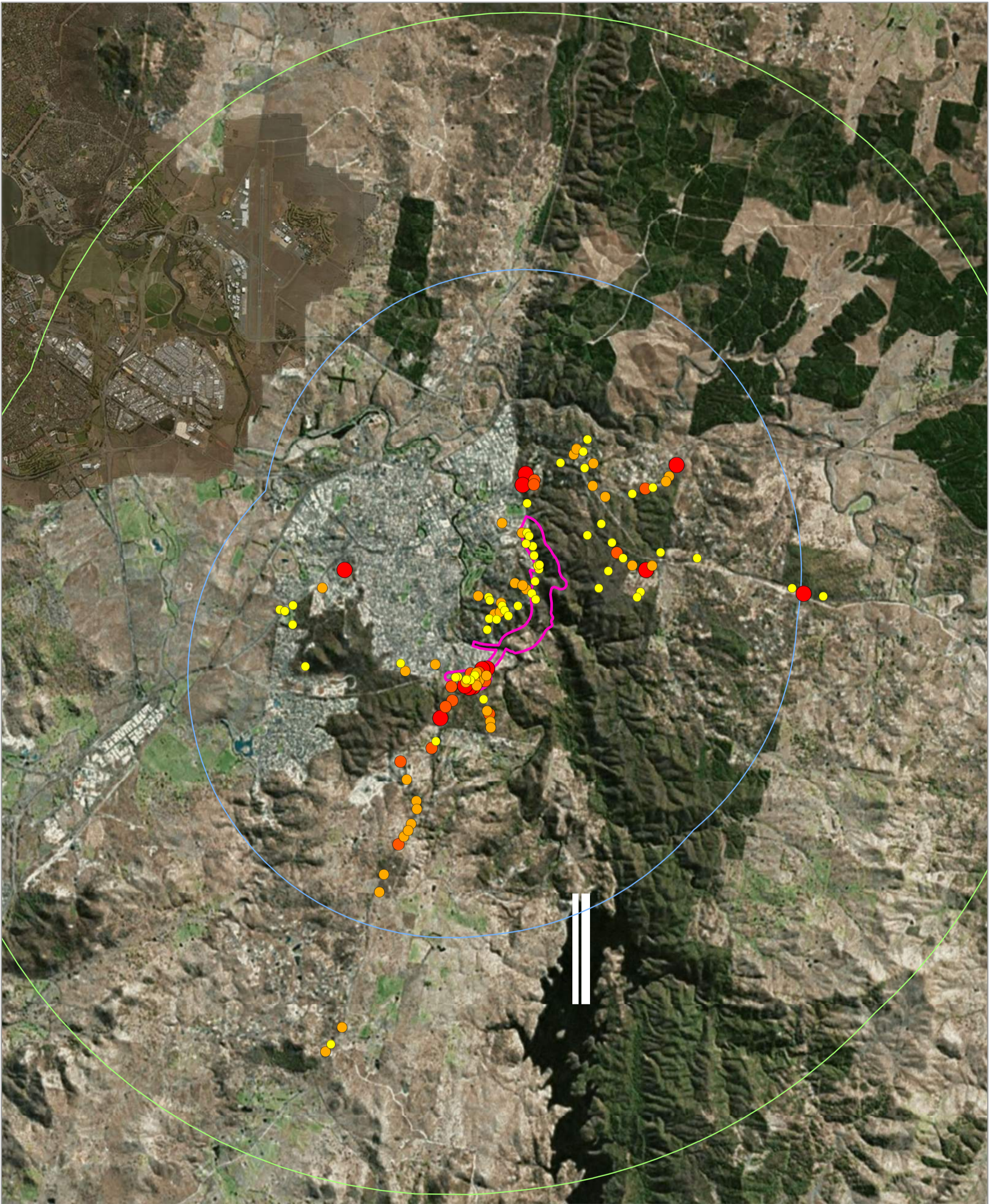
**Notes:**  
- Field data collected by nghenvironmental field staff (October 2012)  
- Aerial imagery and development envelope provided by QCC

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# Ellerton Drive extension - Hoary Sunray populations recorded within the locality



- 5km buffer
  - 10km buffer
  - Study area
- Hoary Sunray populations
- Number of individuals
- Up to 200
  - 200 - 499
  - 500 - 999
  - 1000+

**Notes:**

- Field data collected by nghenvironmental field staff (October 2012)
- Development envelope provided by QCC
- Base map sourced from ESRI Online © 2010 Microsoft Corporation and its data suppliers

0 1 2 Kilometres

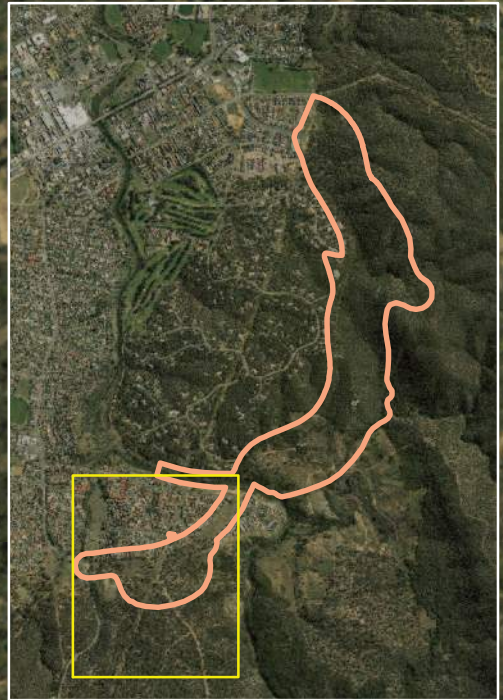
A3 @ 1:70000  
Ref: 4733 - 4-2  
Author: DM

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# Ellerton Drive extension - Fauna survey results (south)



- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li><span style="border: 1px solid orange; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Study area</li> <li><span style="border: 1px solid yellow; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Subject site</li> </ul> | <p><b>Threatened fauna</b></p> <p>2012 survey</p> <ul style="list-style-type: none"> <li><span style="color: blue;">★</span> Gang-gang Cockatoo</li> <li><span style="color: green;">★</span> Scarlet Robin</li> </ul> <p>2013 survey</p> <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Gang-gang Cockatoo</li> <li><span style="color: pink;">■</span> Speckled Warbler</li> </ul> | <p><b>Habitat features</b></p> <p>2012 survey</p> <ul style="list-style-type: none"> <li><span style="color: red;">●</span> Hollow-bearing tree</li> <li><span style="color: yellow;">▲</span> Termite mound</li> </ul> <p>2013 survey</p> <ul style="list-style-type: none"> <li><span style="color: yellow;">●</span> Hollow-bearing tree</li> <li><span style="color: purple;">▲</span> Termite mound</li> </ul> |
|--|--|---|

0 50 100 Meters

A3 @ 1:4000  
Ref: 4733 - 7  
Author: DM



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