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3 June 2019

Our ref: 19SYD - 12826

Calibre Group
Level 2, 2 Burbank Place
Norwest Business Park
Norwest, NSW 2153

Attention: Daniel Obad

Dear Daniel,

**167 Riverstone Road, Riverstone – Flora and Fauna Assessment (Including Frog Assessment)**

This letter describes the assessment of biodiversity values for the above project.

**Biodiversity Certification**

Eco Logical Australia has undertaken a review of the proposed development at 167 Riverstone Road, Riverstone and can confirm that the entire site is 'subject land' according to Part 7 (*Biocertification of the Sydney region growth centres SEPP and related EPIs*) of Schedule 7 to the *Threatened Species Conservation Act 1995* (Figure 1).

In August 2017 the *Biodiversity Conservation Act 2016* was gazetted and repealed the *Threatened Species Conservation Act 1995*. Under section 43 of the *Biodiversity Conservation (Savings and Transitional) Regulation 2017*, the repeal of the TSC Act 1995 does not affect the operation of part 7 or 8 of Schedule 7 to that Act.

Section 8.4(2) of the *Biodiversity Conservation Act 2016* describes the effect of biodiversity certification in relation to development under Part 4 of the EP&A Act 1979. This section states '*an assessment of the likely impact on biodiversity of development on biodiversity certified land is not required for the purposes of Part 4 of the EP&A Act 1979*'.

Therefore, no further assessment of impacts to threatened species, populations or ecological communities is required under the NSW Biodiversity Conservation Act 2016.

**Sydney Region Growth Centres SEPP 2006**

The Sydney Region Growth Centres SEPP Appendix 4 Alex Avenue and Riverstone Precinct Plan 2010 contains controls for the clearing of Existing Native Vegetation and Native Vegetation Retention Areas as shown on the Native Vegetation Protection Map.

The subject site does not contain vegetation mapped in either of these categories and therefore these clauses are not relevant to the proposed development.

**Development Control Plans**

The Blacktown City Council Growth Centres DCP 2018 contains provisions relating to native vegetation and ecology. The proposed should be designed to meet these provisions, including:

1. Native trees and other vegetation are to be retained where possible by careful planning of subdivisions to incorporate trees into areas such as road reserves and private or communal open space.
2. Where practical, prior to development commencing, applicants are to:
    - provide for the appropriate re-use of native plants and topsoil that contains known or potential native seed bank; and
    - relocate native animals from development sites. Applicants should refer to OEH's Policy on the Translocation of Threatened Fauna in NSW.
3. Control 3 does not apply as the study area is not within land classified as a Riparian Protection Area.
4. Control 4 does not apply as the development is not on land that adjoins land zones E2 (Environmental Conservation)
5. All subdivision design and bulk earthworks are to consider the need to minimise weed dispersion and eradication. If Council believes that a significant weed risk exists, a Weed Eradication and Management Plan outlining weed control measures during and after construction is to be submitted with the subdivision DA.
6. A landscape plan is to be submitted with all subdivision development applications, identifying:
    - all existing trees on the development site and those that are proposed to be removed or retained;
    - the proposed means of protecting trees to be retained during both construction of subdivision works and construction of buildings;
    - proposed landscaping including the locations and species of trees, shrubs and ground cover to be planted as part of subdivision works; and
    - the relationship of the proposed landscaping to native vegetation that is to be retained within public land, including factors such as the potential for weed or exotic species invasion and the contribution of the proposed landscaping to the creation of habitat values and ecological linkages throughout the Precinct.
7. The selection of trees and other landscaping plants is to consider:
    - The prescribed trees in Appendix D of the control plan;
    - The use of locally indigenous species where available;
    - Contribution to the management of soil salinity, groundwater levels and soil erosion.
8. For the purposes of clause 5.9 of the relevant Precinct Plan, prescribed trees include:
    - Trees taller than the minimum height and greater than the minimum trunk diameter specified in Appendix D, and
    - Tree species listed in Appendix D.

*Note: Where applicable, clause 5.9 of the Precinct Plan requires development consent or a permit to ringbark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation that is prescribed by this DCP, except where other requirements of clause 5.9 are met.*

**Fisheries Management Act 1994**

The FM Act contains several provisions for the protection of fish habitat and threatened species. The proposed works:

- Will not impact on a waterway mapped as 'Key Fish Habitat' or a waterway that contains a threatened species record.
- Will not harm marine vegetation.
- Will not require, dredging of the bed and land reclamation of a Key Fish Habitat Creek.

Therefore, a Part 7 Permit under the FM Act is not required.

***Litoria aurea* (Green and Golden Bell Frog) Habitat Protection**

In accordance with the North West Growth Centre Land Zoning Map, the study area is mapped as Special Provision C (Green and Golden Bell Frog Habitat – Appendix 4, Clause 6.9). The objectives of Part 6, Clause 6.9 of Appendix 4 *Alex Avenue and Riverstone Precinct Plan 2010* within the Sydney Region Growth Centres SEPP 2010 are as follows:

*a. to ensure that suitable habitat for the Green and Golden Bell Frog species is created on certain land to which this clause applies,*
*b. to ensure that the biodiversity values of that habitat are protected and preserved*
c. *to ensure that appropriate measures are in place to minimise or prevent any adverse impacts of development on the species or its habitat by protecting land surrounding that habitat.*

Clause 6.9(4) states:

> *Consent must not be granted for development on land to which this clause applies unless the consent authority is satisfied that the development will not adversely affect the quality and condition of any habitat of the Green and Golden Bell Frog on the land to which this clause applies that is within Zone SP2 Infrastructure and marked "Drainage".*

As shown in Figure 2, the study area is zoned as SP2 Infrastructure and is in proximity to an area mapped as SP2 Infrastructure Drainage. Development within areas mapped as Special Provision C must not adversely affect the quality and condition of Green and Golden Bell Frog habitat within the SP2 Infrastructure Drainage zoning and must be designed in accordance with the Draft Green and Golden Bell Frog Recovery Plan 2005. The proposed works within and alongside Regent Street have the potential to indirectly impact on areas mapped as SP2 Infrastructure Drainage through indirect impacts such as surface runoff and sedimentation. However, will be mitigated through strict measures during construction.

The Blacktown Growth Centres Development Control Plan (DCP) – Schedule 2 Riverstone also includes provisions for the protection of the Green and Golden Bell Frog habitat. The DCP states that design of development needs to be consistent with the document 'Best Practice Guidelines Green and Golden Bell Frog Habitat' (DECC 2008). Development is to be generally consistent with the basin design in Figure 2-1 of the DCP. The proposed location for this habitat is proposed to be located within 155-159 Regent

Street located north of the subject site. Prior to development of the site, Blacktown Council is to prepare a management plan for the stormwater and drainage infrastructure.

Key habitat for this species was mapped by ELA in 2010 following targeted Green and Golden Bell Frog surveys between December 2008 and February 2009. The habitat is shown in Figure 3. The subject site does not contain habitat previously identified. The closest habitat previously identified is located north and east of the subject site. The proposed development is unlikely to result in any barriers or prevent the dispersal of this species within the First Ponds Creek riparian corridor or surrounding locality. If this species is present within the locality it has the potential to occur opportunistically, however the habitat within the subject site does not constitute key habitat important for different life cycles for this species.

Whilst Green and Golden Bell Frog individuals are not anticipated to be found within the subject site, the following mitigation measures should be employed during construction within and alongside the north of Regent Street to prevent any adverse effects to the condition and quality of Green and Golden Bell Frog habitat (identified as SP2 Infrastructure Drainage):

- Site Induction;
- Establishment of frog exclusion fencing along the northern side of Regent Street;
- Diversion of surface runoff downstream of potential Green and Golden Bell Frog habitat (down stream of Regent Street);
- Frog pre-clearance surveys;
- Avoiding spread of disease; and
- What to do if a frog is found on site.

Further details on each measure is outlined in Appendix A.

**Commonwealth Strategic Assessment (EPBC Act)**

On 28th February 2012, the Commonwealth Minister for the Environment announced that the program of development activities within the Growth Centres was approved under the EPBC Act Strategic Assessment process. Specifically, all actions associated with the development of the Western Sydney Growth Centres as described in the Sydney Growth Centres Strategic Assessment Program Report (Nov 2010) have been assessed at the strategic level and approved in regard to their impact on the following Matters of National Environmental Significance:

- World Heritage Properties
- National Heritage Places
- Wetlands of International Importance
- Listed threatened species and communities
- Listed migratory species

These decisions indicate that the Commonwealth is satisfied that the conservation and development outcomes that will be achieved through the Western Sydney Growth Centres Program will satisfy their requirements for environmental protection under the EPBC Act. Provided that development activity proceeds in accordance with the Growth Centres requirements (such as the Biodiversity Certification Order, the Growth Centres SEPP and DCPs, Growth Centres Development Code etc.) there is no

requirement to assess the impact of development activities on Matters of National Environmental Significance within the Growth Centres and no requirement for referral of activities to the Commonwealth Department of Environment.

The site is therefore exempt from further assessment of threatened species and endangered ecological communities listed under the NSW TSC or Commonwealth EPBC Act.

Where habitat for native fauna is to be removed such as hollow-bearing trees or dams, the works should be done in such a manner that minimises the risk of risk of injury or death to native fauna. For this site we would recommend undertaking tree removal with the supervision of a qualified ecologist or fauna spotter/catcher to ensure fauna is relocated in an appropriate manner and that appropriate measures are taken to minimise fauna injury or death.

Should you have any questions on this matter, please contact me on (02) 9259 3745.

Regards,

Rebecca Ben-Haim

**References**

Department of Environment and Climate Change (DECC) 2008. *Hygiene protocol for the control of disease in frogs*.

Department of Environment and Conservation NSW (DEC) 2005. Draft Recovery Plan for the Green and Golden Bell Frog (Litoria aurea). DEC NSW, Hurstville, NSW.

Eco Logical Australia Pty Ltd 2010. Riverstone Precinct Green and Golden Bell Frog Survey. Prepared for Growth Centres Commission

Office of Environment and Heritage (OEH) 2016. *Infection of frogs by amphibian chytrid causing the disease chytridiomycosis - key threatening process listing*. Available: http://www.environment.nsw.gov.au/animals/AmphibianChytridKTPListing.htm.

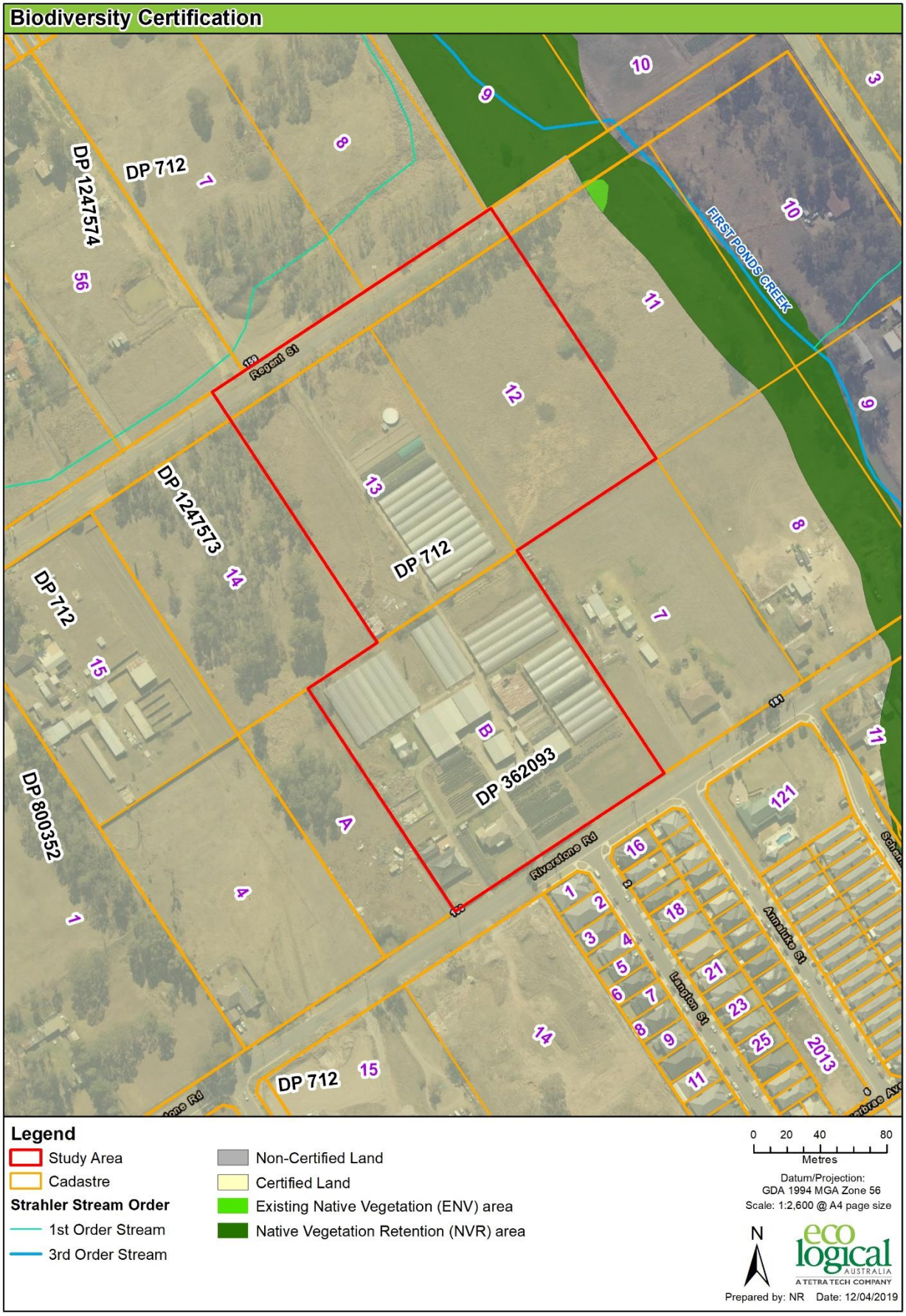



**Figure 1: Location of the site in relation to biodiversity certified lands**

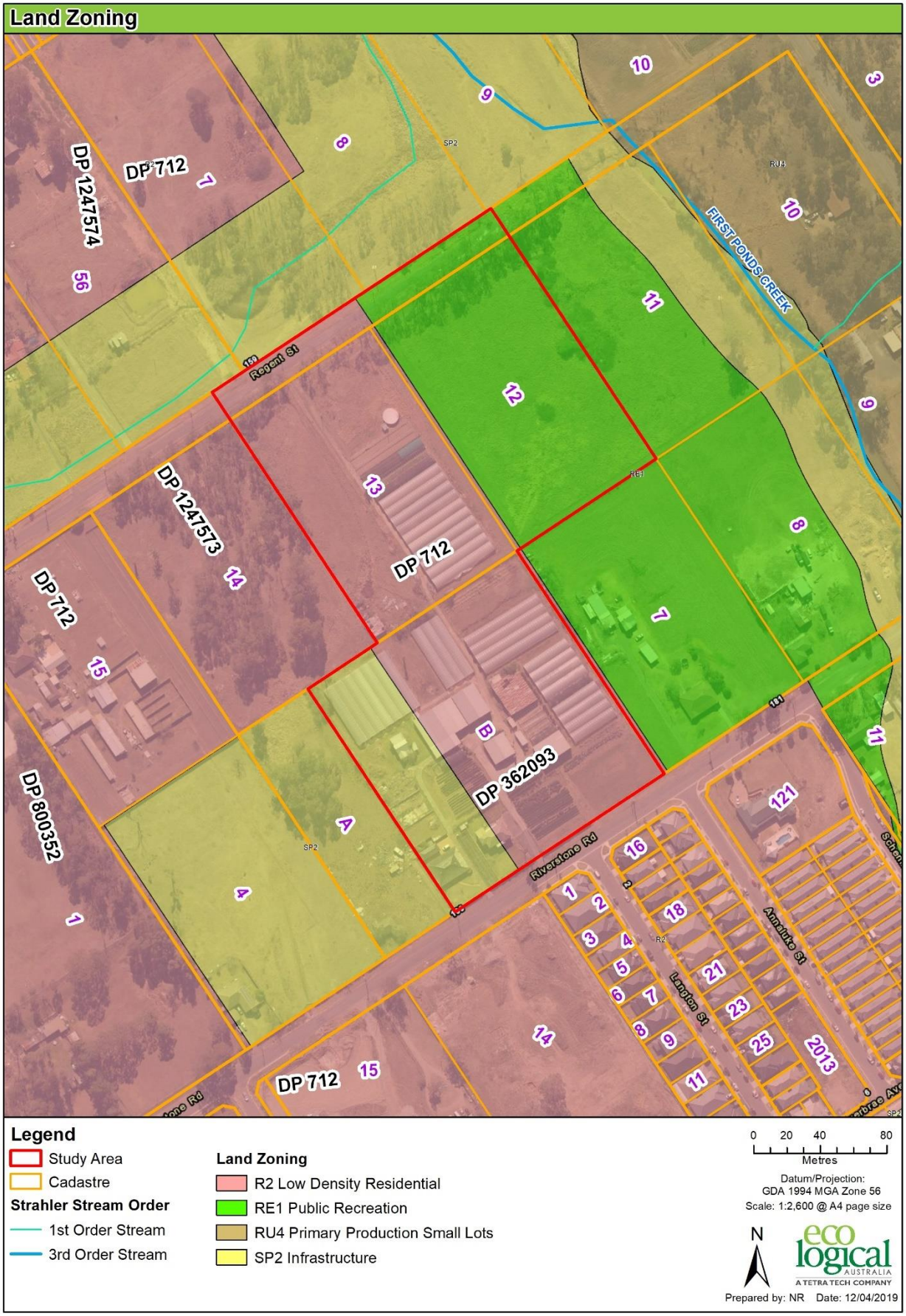



**Figure 2: Land zoning of the site**


**Figure 3: Habitat identified in the Green and Golden Bell Frog Survey Report (ELA 2010)**

# Appendix A Green and Golden Bell Frog Mitigation measures

## A1 Site Induction

Site induction for all personnel working at or visiting the site are required to be inducted for site safety and environmental management requirements. This induction will include a component on protection of Green and Golden Bell Frog at the site including:

- maintenance of site boundaries
- the purpose of exclusion fencing and its intended operation
- what to do if a frog is found on site
- hygiene protocols
- salient features for identification and legal status of Green and Golden Bell Frog
- method for relocation in the instance of positive identification of the Green and Golden Bell Frog during construction

## A2 Establish frog exclusion fencing along the lot boundary

The fence should be installed prior to any construction activities occurring within the subject site. The frog exclusion fencing will:

- be made using durable and permeable material, such as shade cloth
- be a minimum of 80 cm high
- completely surround the site to reduce the likelihood of frogs entering the construction zone
- where the fence is located on soft landscaping it will be dug into the ground at least 20 cm (to prevent frogs burrowing under it)
- maintained free of vegetation including long grass and vines that could hang over the fence and provide means for frogs to enter the impact area
- where it is not possible to dig it into the ground (e.g. at gates) there should be a 30 cm flap sitting flat on the ground and weighed down with sand bags or similar.
- checks to ensure that integrity of the exclusion fence is being maintained, is required at the start of every work day prior to construction starting
- any tears or holes in the fence are to be repaired immediately to its original standard.

Signs are to be placed on the inside of the perimeter fence to ensure no material is placed outside the fencing. The frog exclusion fencing can be removed following the completion of all construction works.

## A3 Frog pre-clearance survey

Once the frog exclusion fence has been erected and prior to the commencement of construction at the subject site, the area must be searched and cleared of any frogs and other wildlife. This will include the following tasks:

- an initial clearance survey to be undertaken by an ecologist to establish that the construction site, inside the exclusion fencing, is free from Green and Golden Bell Frog individuals
- searches will involve looking under rocks, raking debris, rubbish, turning over dumped tyres, thick plant litter, and in the crowns of tussock grasses

- removal of vegetation should be conducted as per the following sequence to limit the potential for frog or fauna kills:
    - search for, capture, and move on all GGBFs and fauna species within 20 m x 20 m area, then instruct contractor to slash vegetation
    - Move on to next 20 m x 20 m area, search for, capture, and move on GGBFs and fauna species, then instruct contractor to slash vegetation
    - Repeat step 2 until the entire site has been searched and cleared of GGBFs and other fauna species.
- if any frogs require capture and moving on this will only be done by the ecologist.
- if Green and Golden Bell Frog individuals are found on site OEH will be advised of their presence immediately.
- should any frog be detected on site by staff or visitors (a chance or unexpected find), works in the immediate vicinity of the frog will stop and site management will arrange removal by the ecologist.

The ecologist must hold the appropriate licenses to 'handle' fauna under the National Parks and Wildlife Act 1974.

## A4 Avoiding spread of disease

When an ecologist is present on site, they are responsible for handling frogs. The ecologist will at all times, abide by with the hygiene guidelines of NPWS / DECC (2008). However, when the ecologist is not present on site, it may be become necessary for other staff to handle and move frogs. This should not occur without consulting the site ecologist.

To comply with NPWS (2008), all equipment including garden rakes, nets, plastic, as well as all footwear are to be 'clean on entry' to the site. Clean on entry means washing the equipment thoroughly and all footwear with 5% bleach solution. This must be done daily before entering the site. The aim of this process is to reduce the risk of spreading the water-borne fungal pathogen *Batrachochytrium dendrobatidis* (Frog Chytrid Fungus).

At a minimum, site workers and project ecologist must:

- prior to frog fences being erected, disinfect vehicle tyres prior to entering the site by spraying the tyres with disinfectant. Tyre disinfectant will not be required after fences are erected and the site is free of frogs.
- disinfect boots prior to entry on site (prior to erection of frog fencing).
- scrape boots clean of mud before entering the site and on leaving.
- stand soles in disinfectant solution and spray remainder of boot with disinfectant.
- disinfectant is to contain benzalkonium chloride. 'Pine-o-clean' is a suitable product.
- have clean disinfected hands or gloves.

If works are required outside the fence after site establishment then, the above steps are to be followed.

## A5 What to do if a frog is found on site

If a frog of any kind is found on site:

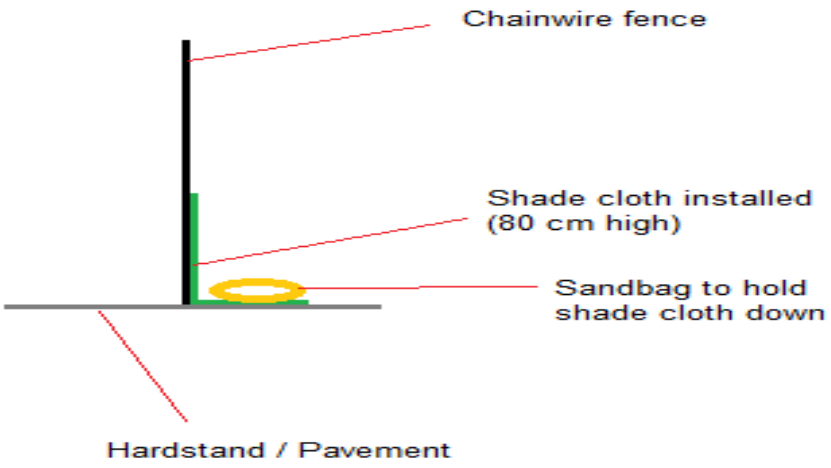
- do not attempt to touch, capture or handle the frog.
- inform others in the area of the presence of the frog and immediately stop works in the vicinity of the find.
- inform the project manager of the frog.
- project manager is to take photograph of frog and contact the on-call ecologist for advice, if the frog is not a Green and Golden Bell Frog it can be moved on to alternative habitat created on site.
- spotter to remain with the frog to ensure others are aware of its location and for easy location when the ecologist arrives on site.
- frog to be removed in accordance with the advice of the site ecologist.

The relocation area for native frogs is outside if the subject site preferably within the First Ponds Creek riparian corridor east of the subject site. Frogs detected in the subject site will be captured and placed in a suitable container/plastic bag with a small amount of distilled water or small handful of moistened grass/leaves and then moved to the designated relocation site by the project ecologist.

However, if the frog is confirmed to be Green and Golden Bell Frog the ecologist must attend the site to move the Green and Golden Bell Frog from the impact area to the designated release site. Green and Golden Bell Frog individuals and native frogs detected in the subject site will be captured and placed in a suitable container/plastic bag with a small amount of distilled water or small handful of moistened grass/leaves.

## A6 Frog exclusion fencing

Example of Frog exclusion fencing for hardstand / pavement areas:




Where frog exclusion fencing is required on hardstand/pavement areas shade cloth should be installed along the fence with a 30 cm flap sitting on the ground and weighed down with sand bags or similar.

Examples of Frog Exclusion Fencing in soft landscaped areas (Source: RMS 2011 Management Plan for the Green and Golden Bell Frog, South Nowra Upgrade and DTMR 2009):

Frog Exclusion Fencing Specification:

- **Materials:** Shade Cloth or similar, supported by short star-pickets or similar and single strand fencing wire supporting at base and at top. An optional mid-height supporting strand may also be required/applied as necessary.
- **Height:** 80 cm
- **Returns:** 25 cm on outward facing side (outward facing the subject site) where possible
- **Depth:** The bottom of the shade cloth should be buried to a depth of 15-20cm.
- **Maintenance:** As a preventative measure, an obviously demarcated buffer area should be established between the works and the fence. Fencing should be checked as a daily pre-start up exercise. Any damage should be repaired immediately. When fencing is established it should be constructed in a manner that is mindful of the potential for damage from site run-off. Incident reporting should include any accidental incursion or breaching to the frog exclusion fencing.

## A7 Site Hygiene Protocol

This hygiene protocol is based on, and employs principles outlined in Wellington and Haering (2007) NSW DECC/OEH Threatened Species Information Circular 6 *Frog Hygiene Protocol for the control of disease in frogs*. This also satisfies the requirement outlined within the EPBC Act Policy Statement 3.19 Significant Impact Guidelines for the Vulnerable Green and Golden Bell frog (*Litoria aurea*), which recommends such a protocol is established.

| **Hygiene Protocol to reduce introduction and spread of the Frog Chytrid (*Batrachochytrium dendrobatidis*) and other potential frog diseases** | |
|---|---|
| Reduce or Restrict Access | Exclusion areas will be established between areas for constriction and the surrounding frog exclusion fence. This will also assist in the prevention of accidental incursion. |
| Construction Activities | Works will be constrained or stopped during wet conditions. |
| Personnel and Equipment | Whilst undertaking works that are directly related to the erection of frog exclusion fencing all personnel will practice disinfection of footwear. Footwear will be disinfected by first removing adhering soil and then sprayed with an atomiser containing a diluted bleach solution or else by stepping in a shallow disinfection tray containing the same solution. The tray and new solution should be prepared at the start of each day of work.<br>The sterilisation process should be undertaken on entry and exit to the sensitive area(s) (i.e. in proximity to the exclusion fences).<br>Those individuals undertaking frog clearances or transfer will also undertake hand disinfection. A simple procedure is to utilise an alcohol based self-drying hand cleanser from an applicator. Alternatively making use of disposable gloves. Hand cleaning or glove changes should be practised between each frog handled. Handling of frogs should be kept to a minimum and undertaken only when essential.<br>Where frogs need to be temporarily containerised, one frog only per container ('take-away' containers or plastic bags with a small amount of water). This prevents possible cross infection between individuals. |
| Vehicles and Machinery | Vehicles and machinery to be used on-site must be cleaned of soil and mud from previous use. This should be done off-site or else undertaken in a 'contained' area where waste water produced can be captured and disposed of or disinfected. Runoff from this step MUST NOT be permitted to enter the potential GGBF habitat area(s) adjacent to the south of the site. If necessary, due to site characteristics, a bunded area may need to be established. This is to prevent tracking in of potential propagules of the frog chytrid, other pathogens and weed propagules or at least enable it to be trapped and disposed of and prevented from flowing to sensitive area(s).<br>Where vehicles are washed down on-site, this should be undertaken using chlorinated 'town' water containing a dilute cleansing/sterilising agent e.g. bleach, *Farmcleanse*© or similar, used in accordance with the label.<br>Vehicles leaving the site should be subject to a similar cleaning regime. |
| Water | Water used on site should be chlorinated 'town' water or else sourced from a certified provider or (post construction) captured directly from roof runoff. |
| Landscaping | Plant stock used in the landscaping and habitat creation initiatives should be either sourced from a certified supplier where potting mix has been heat treated or else plants watered pre-planting with a dilute non harmful (to plants) sterilising solution. |

* Where the above protocols do not apply due to site circumstances or are in some way apparently compromised by the activity proposed, prior to proceeding, advice should be sought from a suitably qualified ecologist.