

FIGURE 18 Rehabilitation Plan

PROPOSED RESIDENTIAL DEVELOPMENT

REHABILITATION ZONES

The Rehabilitation Strategy is aimed initially at the protection of retained vegetation communities and secondly at providing a level of enhancement where necessary. It often takes a period of several years before the achievement of such aims are realised and as such it is of paramount importance that an appropriate strategy is derived and implemented in the initial phases of rehabilitation.

The primary objectives recommended for the vegetation communities of the site include:

- Retain significant vegetation communities
- Retain and enhance existing fauna habitat
- Remove and manage processes potentially threatening the viability of existing habitats
- Increase the extent of vegetation communities and potential fauna habitat over time

As the conservation areas associated with the development are comprised predominately of intact/remnant vegetation communities, it is considered that the overarching rehabilitation approach will be 'Assisted Regeneration' (within existing vegetation) and 'Reconstruction' (in the cleared/disturbed areas). The applicable circumstances of these types of rehabilitation per GCCC (2007) are provided below:

Assisted Natural Regeneration applies:

- To natural areas where the native plant community is largely healthy and functioning.
- When native plant seed is still stored in the soil or will be able to reach the site from nearby natural areas, by birds or other animals, wind or water.
- Where the natural regeneration processes (seedling germination, root suckering, etc.) are being inhibited by external factors, such as weed invasion, soil compaction, cattle grazing, mechanical slashing, etc
- When limited human intervention, such as weed removal, minor amelioration of soil conditions, erection of fencing, cessation of slashing, etc. will be enough to trigger the recovery processes through natural regeneration.
- When the major component is weed control.

Assisted Natural Regeneration shall apply to all mapped retained remnant vegetation communities within the 2006 Ecological Assessment.

Reconstruction applies:

- Where the site is highly degraded or altered
- When the degree of disturbance has been so great and long-standing that the pre-existing native plant community cannot recover by natural means.
- To sites such as areas of fill, sites affected by stormwater flow, and areas that have been drastically cleared, either mechanically or by stock even though there may be a few remaining native trees or shrubs.
- When a greater degree of human intervention is required, such as weed removal, cessation of grazing and/or slashing, amelioration of soil conditions such as importation of soils, drainage works or reshaping of the landscape.
- When a major component is the importation of native species through planting.

Reconstruction will apply to the areas detailed in Figure 22

Typical to proximate vegetation communities associated with Cudgera Creek the rehabilitation zone shall be revegetated with a combination of Swamp She-oak, Open Forest, Swamp Sclerophyll/Swamp mahogany Open Forest and Subtropical Coastal Flood Plain Forest. The canopy shall also incorporate potential koala foraging trees and Allocasuarinas for Glossy Black Cockatoo foraging pursuant to the fauna survey performed.

Table 1: Ecological Restoration Works Timetable	
Timing	Action
Begin following commencement of construction works on the site	<p>Review all approved documentation (on-going).</p> <p>Commence first round of weed control works throughout retained vegetation communities</p> <p>Undertake baseline monitoring of the rehabilitation management areas (refer below for specification).</p>
2-3 weeks	<p>Implement second round of weed control works throughout the conservation areas to remove additional weeds which may have re-germinated from soil-bank resources.</p>
3-6 months	<p>Commence revegetation works in areas within the Rehabilitation Zones. All revegetation works shall be undertaken by a suitably qualified bush regenerator to the satisfaction of TSC.</p> <p>Existing vegetation communities external to the nominated Rehabilitation Zones shall be regularly monitored for natural regeneration of native plant species.</p> <p>Undertake ongoing weed inspection and management as necessary on a quarterly basis.</p> <p>Install fauna boxes</p>
9 months	<p>Implement follow-up weed control works throughout retained vegetation communities and Rehabilitation Zones. Quarterly rehabilitation monitoring to be undertaken</p> <p>Survey of fauna usage of the installed fauna boxes</p>
1 year	<p>Implement follow-up weed control works throughout retained vegetation communities and Rehabilitation Zones. Quarterly rehabilitation monitoring to be undertaken</p> <p>Survey of fauna usage of the installed fauna boxes is to occur</p>
15 months	<p>Implement follow-up weed control works throughout retained vegetation communities and Rehabilitation Zones. Quarterly rehabilitation monitoring to be undertaken</p> <p>Survey of fauna usage of the installed fauna boxes is to occur</p>
18 months	<p>The success of a regeneration project can be assessed by systematic visual monitoring of rehabilitation areas. This need not be an overly time-consuming process and the data generated can then be used to compare the success of various treatments. The measurements to be visually monitored are:</p> <ul style="list-style-type: none"><li>Average height of plants within rehabilitation areas (height in metres for tree, shrub and groundcover species);</li><li>Dominant species (qualitative description of dominant species within tree, shrub and ground layer);</li><li>Health of vegetation within rehabilitation areas;</li><li>Area of ground cover covered by weed species (area in square metres);</li><li>Percentage of planted specimens survived (number of survived specimens as a % of total planted);</li><li>Incidence of recruitment, both exotic and native (species and quantity estimates of new species noted [i.e. A = abundant, .R = relatively common, I = isolated/scarce]</li><li>Native fauna presence (native fauna species recorded via observation, track or trace during vegetation inspections are to be noted)</li></ul> <p>The simplest of all methods of monitoring a site is to establish permanent photo points and take photographs at regular intervals during the establishment period, and to regularly (i.e. quarterly) traverse the rehabilitation area(s). In this regard, five selected quadrats (10m x 10m) within the rehabilitation zone (refer Sheet 5) shall be photographed on a quarterly basis and results recorded for the seven variables to be monitored above. Photographs shall be taken at the SW, SE, NW, NE corners of each monitoring site.</p> <p>A brief report outlining the results of all quarterly monitoring, weed follow up works implemented, quarterly photos and general success of the project is to be submitted to Council at the 18 month timeframe.</p> <p>Survey of fauna usage of the installed fauna boxes is to occur</p>
Ongoing	<p>The following works &amp; reporting is to be ongoing:</p> <ul style="list-style-type: none"><li>Quarterly: Implement follow-up weed control works throughout retained vegetation communities and Rehabilitation Zones.</li><li>Quarterly: Rehabilitation monitoring to be undertaken</li><li>Quarterly: Fauna box usage survey</li><li>18 months: Ecological restoration report</li></ul>

Table 1  
ECOLOGICAL RESTORATION WORKS TIMETABLE



Site Context

