

Carysfield Park Bank Stabilisation and Creek Restoration - s91 licence application

1. Applicant's Name : *(if additional persons require authorisation by this licence, please attach details of names and addresses)*

Bankstown City Council, its employees and contracted companies and workers.

2. ABN Number:

38 380 045 375

3. Organisation name and position of Applicant: *(if applicable)*

Bankstown City Council

4. Postal address :

c/- Rebecca Piper (ESD)
PO Box 8
Bankstown NSW 1885

4. Telephone :

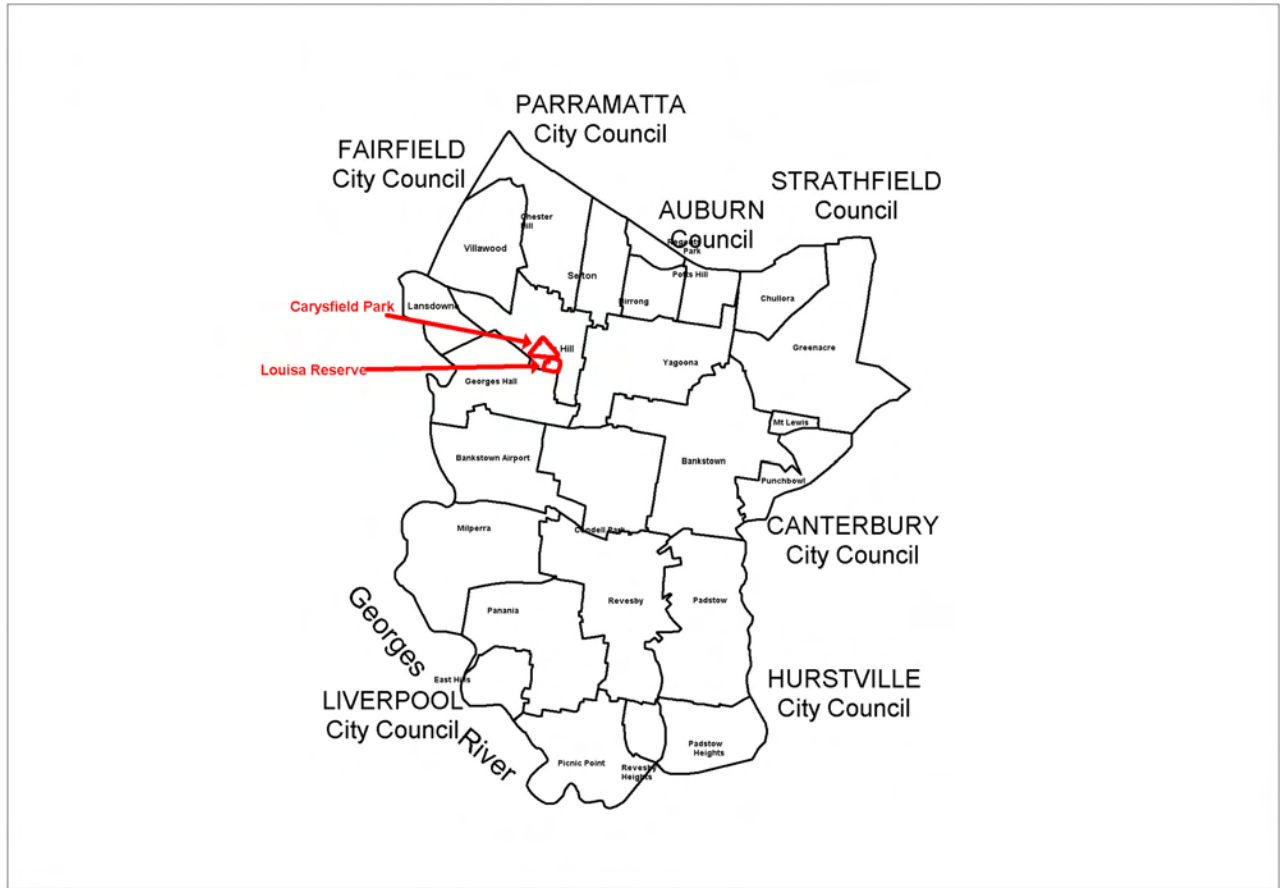
B.H. (02) 9707 9990
A.H.

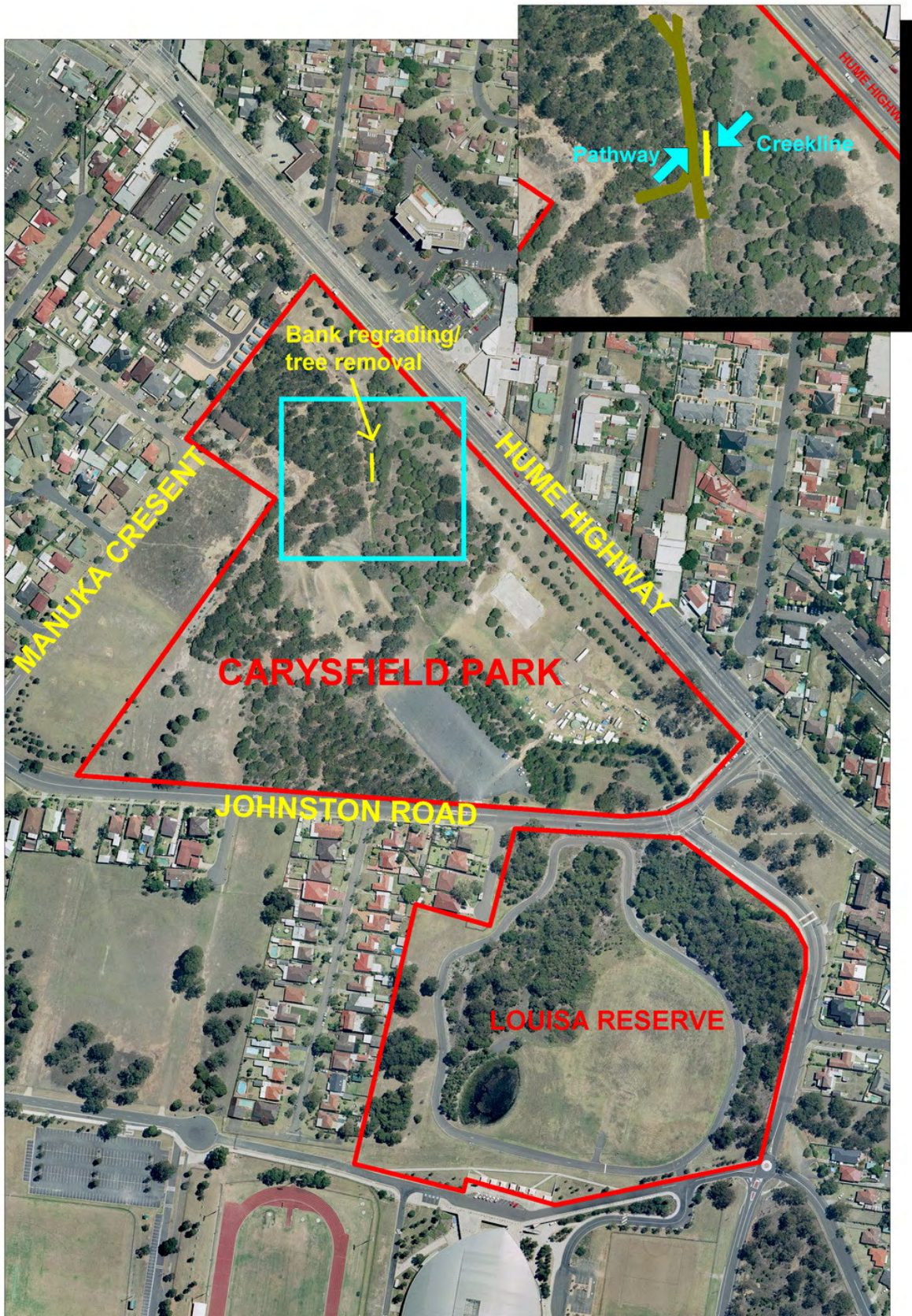
5. Location of the action *(including grid reference and local government area and delineated on a map).*

Works are to take place at Carysfield Park, Bass Hill, part of The Crest Group of Reserves in the Bankstown LGA. The creekline runs from Louisa Reserve in the south (X315214.19, Y6246594.59) (where works have just been undertaken) under Johnston Road and through Carysfield Park, to the Hume Highway in the north (X314955.46, Y6246960.31).

The area for works outlined in this application is for works on the creekline north of the carpark (see aerial photo).

See next pages for LGA and aerial maps.





6. Full description of the action and its purpose (eg. *environmental assessment, development etc.*).

Bank stabilisation, creek restoration, riparian and bushland revegetation and regeneration works in remnant Cooks River/Castlereagh Ironbark Forest (CRCIF), an EEC. Removal of a few trees from remnant CRCIF may be necessary to allow for regrading and rockwork to stabilise the eroding creekline, protect the riparian community from further undermining and improve downstream water quality. Almost 50,000 locally indigenous plants are expected to be planted over the course of the project.

7. Details of the area to be affected by the action (*in hectares*).

Total area of bushland in reserves 7.8ha. The vegetated area to be directly affected is approximately 0.004ha-0.005ha (plus 3-4 trees rooted within the bank itself).

8. Duration and timing of the action (*including staging, if any*).

First stage - Engineering works (regrading and rock work); revegetation of the affected areas (~4500 plants indicative of CRCIF community); staged removal of in-stream weeds in direct area of works. Works have commenced in reserve (covered by Section 95(2) Certificate no. 1098619. Only 3 *Melaleuca nodosa* trees have been removed to allow access into the creek. No other vegetation has been affected by the creek restoration project in Carysfield Park and Louisa Reserve until this point. Further bank regrading and rock work to stabilise the eroding creek bank and protect the remnant community as a whole is required. This necessitates some tree removal, outlined in the sections below.

Future stages (3-5 years) - extensive weed removal; revegetation (~45,000 plants indicative of CRCIF); bush regeneration works; fencing to protect remnant vegetation; a bridge to formalise access and prevent further erosion between the BMX track and skate park. Due to commence in 2009/10. Complete in 2010/11.

9. Is the action to occur on land declared as critical habitat*? (*please tick appropriate box*)

No.

10. Threatened species, populations or ecological communities to be harmed or picked.

Scientific Name

Cooks River/Castlereagh Ironbark Forest under the TSC Act 1995

Common Name (*if known*)

Conservation Status (*i.e. Critically endangered, endangered or vulnerable*)

Endangered Ecological Community

Details of no. of individual animals, or proportion and type of plant material (eg. Fertile branchlets for herbarium specimens or whole plants or plant parts)

Since construction, the detailed design survey marks have been put in place. The detailed designs for the project were carried out to minimise the impact of the works on the remnant bushland. For the vast majority of the project, works have been carried out in front of the creek bank where there are stands of remnant vegetation, saving many mature trees (including large, mature ironbark and *Melaleuca* individuals). However, this cannot be achieved for all sites. For proposed works along the creek north of the carpark, regrading is required to obtain the necessary volume to ensure that the creek restoration is successful and avoids further erosion (which is currently undermining the riparian vegetation and is likely continue given that the upstream creek capacity has been increased) (See attached detailed design drawings, CD-0812-04 and CD-0812-05, with proposed regarding corresponding to revegetation areas 3(9), 3(10), 3(11) and 3(12)).

In this location, the potential impacts have been carefully considered for both sides of the creek to determine the most appropriate side of the channel for regrading to increase creek capacity. On the eastern side of the creek there is a significant stand of remnant vegetation containing many mature species (including large ironbarks and mature *Melaleucas*) within the riparian corridor area. Although surveyed by UBM Ecological Consultants in early 2008 as "poor" condition, this area of bushland has been earmarked for ongoing bush regeneration over the next three years of the project. On the western side, there is a stand of remnant vegetation (also surveyed as "poor" condition) dominated by *Melaleuca nodosa*, with one individual *Allocasuarina littoralis* and two individual *Acacia pubescens*. This stand is currently fragmented from the bushland ("good" condition) to the west by an informal track and from the bushland to the east ("poor condition") by the creekline. The draft Masterplan for this park will include fencing along both sides of this path and formalisation of the path itself. Depending on the surface of the path, this could increase overland sheet flow and contribute to localised erosion. Given that the stand is currently fragmented, and because future plans for fencing and path formalisation will continue to fragment this vegetation, the decision was made to undertake this regrading on the western side of the creek, rather than impact on the eastern area of bushland, which as a whole has a much greater opportunity

As a result, 56 trees will need to be removed to undertake the regrading and rock stabilisation works. This includes 53 *Melaleuca nodosa*, 1 *Allocasuarina littoralis* and 2 *Acacia pubescens*.

The trees have been measured for diameter at breast height (dbh). Where the tree was very immature or smaller than breast height, the thickest point of the tree was measured. For the *Melaleuca nodosa*, the dbh's were as follows:

- 0-2cm - 4 trees
- 2.1-4cm - 12 trees
- 4.1-6cm - 20 trees
- 6.1-8cm - 4 trees
- 8.1-10cm - 5 trees
- 10.1-12cm - 3 trees
- 12.1-14cm - 4 trees
- 14.1-16cm - 0 trees
- 16.1-18cm - 1 tree

One *Allocasuarina littoralis* with a dbh of 4cm, and two *Acacia pubescens* with dbh 6cm's are also within the zone that requires regarding, and will also need to be removed. The *A. pubescens* will be transplanted, if approved as part of this licence.

The removal of these species in the short term will allow long term protection of the community as a whole at this site, by allowing rockwork to stabilise the creek banks and prevent further erosion and undermining. The project will also involve planting in excess of 50,000 plants over the next 3 years and ongoing bush regeneration to ameliorate the site.

Scientific Name

Acacia pubescens

Common Name (if known)

Downy Wattle

Conservation Status (i.e. Critically endangered, endangered or vulnerable)

Vulnerable under the TSC Act 1995 and the Environment Protection and Biodiversity Conservation (EPBC) Act 1999

Details of no. of individual animals, or proportion and type of plant material (eg. Fertile branchlets for herbarium specimens or whole plants or plant parts)

As detailed above, 2 individuals have been identified for removal. These individuals are approximately 1m in height, with the thickest stem on each at 6cm diameter. If this licence is approved, we would like to transplant and relocate these individuals within the park to retain them in the community.

Flora and fauna surveys in 2008 confirmed that the population of *Acacia pubescens* in Carysfield Park has at least been maintained (i.e. may have increased) since 1996 surveys, from a population of 300. Therefore, less than 1% of the local population will be affected.

11. Species impact: (please tick appropriate box)

a) For action proposed on land declared as critical habitat; or

b) For action proposed on land not declared as critical habitat.

12. Describe the type and condition of habitats in and adjacent to the land to be affected by the action.

Recent flora surveys (UBM, 2008) classified remnant vegetation condition in the area of works at Louisa Reserve as Fair, with the balance Poor-Very Poor. CRCIF in the area of works at Carysfield was classified as Very Poor, with smaller areas in Poor and Fair condition to the west, and patches in Good condition to the north and west of the park.

The surrounding Crest reserves are dominated by remnant CRCIF, Cumberland Plain Woodland (CPW) and Sydney Turpentine Ironbark Forest (STIP) (all EEC's). In 2001,

vegetation condition was classified as Good for STIP; mainly Poor-Fair in the southern group of reserves (CPW); and mostly Very Poor-Fair for the northern reserves (mostly CRCIF).

Overall local floral diversity is very high with 322 indigenous plant species recorded (2001 Bushland POM), including 62 indigenous flora species recorded for Louisa Reserve and 69 for Carysfield Park (UBM, 2008).

13. Provide details of any known records of a threatened species in the same or similar known habitats in the locality (include reference sources).

Remnant vegetation in the area to be affected is CRCIF (EEC, NSW TSC Act 1995). *Acacia pubescens* occurs at The Crest, Carysfield, Louisa and Thornton Reserves (Vulnerable, NSW TSC Act 1995, EPBC Act 1999). *Pimelea spicata* (Endangered, NSW TSC Act 1995) is known to have occurred in the area, but was not identified in the 2008 flora and fauna surveys. *Pomaderris prunifolia* occurs at The Crest (Endangered Population, NSW TSC Act 1995).

The Black Bittern (*Ixobrychus flavicollis*) has been recorded in The Crest Reserves (Vulnerable, NSW TSC Act 1995). During recent fauna surveys, the Grey-headed Flying Fox (*Pteropus poliocephalus*) (Vulnerable, NSW TSC Act 1995, EPBC Act 1999); the Eastern Bentwing Bat (*Miniopterus schreibersii*) (Vulnerable, NSW TSC Act 1995); and the Bearded Dragon (*Pogona barbata*), which is of regional conservation concern (NPWS 1997) were all recorded at Carysfield Park and/or Louisa Reserve.

Bankstown City Council. 2001. The Crest Reserves Bushland Plan of Management. UBM Ecological Consultants. 2008. Flora and Fauna Surveys & Ecological Assessment for Louisa Reserve and Carysfield Park, Bankstown.

14. Provide details of any known or potential habitat for a threatened species on the land to be affected by the action (include reference sources).

NPWS Wildlife Atlas recording a sighting of *Pultenaea parviflora* (listed as Endangered under the NSW TSC Act 1995 and listed as Vulnerable under the EPBC Act 1999) in the locality. Targeted flora surveys in 2008 failed to locate the species in Carysfield Park or Louisa Reserve, but further surveys are planned in 2009 to determine if the area still provides habitat for this species.

The Regent Honeyeater (*Xanthomyza phrygia*), listed as Vulnerable under the NSW TSC Act 1995, has been recorded nearby at Lansdowne Reserve and Chullora and may use the area for foraging.

Bankstown City Council. 2001. The Crest Reserves Bushland Plan of Management. UBM Ecological Consultants. 2008. Flora and Fauna Surveys & Ecological Assessment for Louisa Reserve and Carysfield Park, Bankstown.

15. Provide details of the amount of such habitat to be affected by the action proposed in relation to the known distribution of the species and its habitat in the locality.

Total area of bushland in Carysfield Park and Louisa Reserve (the sites of the current creek restoration project) is 7.8ha. The vegetated area to be directly affected is approximately 0.004ha-0.005ha (plus 3-4 trees rooted within the bank itself).

As outlined above, it has been identified that to complete the regrading and rock stabilisation works, 56 trees will need to be removed. This includes 53 *Melaleuca nodosa*, 1 *Allocasuarina littoralis* and 2 *Acacia pubescens*.

The removal of these species in the short term will allow long term protection of the community as a whole at this site. Habitat will be improved through stabilisation of the eroding creekline in the short term, as well as bush regeneration activities and revegetation of CRCIF species (up to 50,000 plants) over the next three years.

As detailed above, 2 individual *A. pubescens* have been identified for removal. These individuals are approximately 1m in height, with the thickest stem on each at 6cm diameter. If this licence is approved, we would like to transplant and relocate these individuals within the park to retain them in the community.

Flora and fauna surveys in 2008 confirmed that the population of *Acacia pubescens* in Carysfield Park has at least been maintained (i.e. may have increased) since 1996 surveys, from a population of 300. Therefore, less than 1% of the local population will be affected.

16. Provide an assessment of the likely nature and intensity of the effect of the action on the lifecycle and habitat of the species.

As discussed before, the trees in this location are fragmented from the rest of the community and this section of remnant bushland is classified as poor condition, with undermining along the creek banks, compaction along the pathway and encroaching on the vegetation and weed infestation also issues at this location. Fragmentation will continue to be a concern as future plans for the site will involve fencing along the pathways, and potential formalisation of the pathways. Although this will act to protect remnant vegetation, it will also provide a physical barrier for dispersion.

Currently the density of individual trees is 1-2/m², which is unlikely to be a sustainable capacity in the long-term, with competition likely to remove some individuals.

Habitat will also be improved through stabilisation of the eroding creekline in the short term, bush regeneration activities in the medium-long term future, and through revegetation of CRCIF species (up to 50,000 plants) over the next three years across the two reserves. This includes almost 1000 plants, which will be planted in the area directly affected by tree removal for regrading.

17. Provide details of possible measures to avoid or ameliorate the effect of the action.

Restoration works have been designed to minimise likely impacts to remnant vegetation, and has allowed us to retain remnant vegetation along the rest of the creekline. We have also weighed up the options for regrading on each bank, and the proposal to remove this vegetation on the west bank of the creek is a preferable to removing vegetation on the

eastern side of the creek, where there is much greater potential to improve the quality of the bushland and its habitat values.

All contractors have been inducted to the site and informed of remnant vegetation and no-go areas.

Habitat will also be improved through stabilisation of the eroding creekline in the short term, bush regeneration activities in the medium-long term future, and through revegetation of CRCIF species (up to 50,000 plants) over the next three years across the two reserves. This includes almost 1000 plants, which will be planted in the area directly affected by tree removal for regrading.

18. In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

In terms of *Acacia pubescens*, very low impact expected given that only 2 individuals will be removed from this location and if possible, will be relocated within the remnant bushland at this reserve. In the long-term, the condition and extent of habitat in the reserves will be improved. The works will also lead to increased species diversity, removal of exotic weeds and provide long-term protection remnant vegetation which is currently being undermined by erosion.

19. In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

N/A, no endangered populations occur at this location

20. In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

The total area of vegetation to be affected is limited to 0.004ha-0.005ha out of a total area of bushland in the Carysfield Park and Louisa Reserve (the sites of the current creek restoration project) of 7.8ha.

The removal of these species in the short term will allow long term protection of the community as a whole at this site. The condition and extent of the EEC will be improved through stabilisation of the eroding creekline in the short term, as well as bush regeneration activities and revegetation of CRCIF species (up to 50,000 plants) over the next three years.

The proposed stabilisation works will actually protect existing remnants from further loss due to creek bank slumping, etc. and will improve habitat connectivity through bush regeneration and removal of informal tracks.

21. In relation to the habitat of a threatened species, population or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

Trees in this location are currently fragmented from the rest of the community and this section of remnant bushland is classified as poor condition, with undermining along the creek banks, compaction along the pathway and encroaching on the vegetation and weed infestation also issues at this location. Fragmentation will continue to be a concern as future plans for the site will involve fencing along the pathways, and potential formalisation of the pathways. Although this will act to protect remnant vegetation, it will also provide a physical barrier for dispersion.

Currently the density of individual trees is 1-2/m², which is unlikely to be a sustainable capacity in the long-term, with competition likely to remove some individuals.

With regard to *Acacia pubescens* at this location, 2 individuals have been identified for removal. These individuals are approximately 1m in height, with the thickest stem on each at 6cm diameter. If this licence is approved, we would like to transplant and relocate these individuals within the park to retain them in the community.

Flora and fauna surveys in 2008 confirmed that the population of *Acacia pubescens* in Carysfield Park has at least been maintained (i.e. may have increased) since 1996 surveys, from a population of 300. Therefore less than 1% of the population will be affected, which will hopefully be reduced if we are able to relocate these individuals.

Overall the current habitat value of the area to be affected is low. However, as a result of this project, habitat condition, extent and connectivity will be improved through stabilisation of the eroding creekline in the short term, bush regeneration activities in the medium-long term future, and through revegetation of CRCIF species (up to 50,000 plants) over the next three years across the two reserves. This includes almost 1000 plants, which will be planted in the area directly affected by tree removal for regrading, significantly improving the riparian habitat.

22. Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

N/A. No critical habitat has been declared for either CR/CIF or *Acacia pubescens*.

23. Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

Recovery plans have not been developed for CRCIF, the Black Bittern (*Ixobrychus flavicollis*) or the Grey-headed Flying Fox (*Pteropus poliocephalus*).

The recovery plan for *Acacia pubescens* has identified Carysfield Park and Louisa Reserve as two of 7 sites identified for potential reservation to protect the species.

If we are able to relocate these individuals, the actions for this project are not out of line with the aims of the recovery plan to preserve the species.

As a result of this project, habitat condition, extent and connectivity will be improved through stabilisation of the eroding creekline in the short term, bush regeneration activities in the medium-long term future, and through revegetation of CRCIF species (up to 50,000 plants) over the next three years across the two reserves. This includes almost 1000 plants, which will be planted in the area directly affected by tree removal for regrading, significantly improving the riparian and bushland habitat, including habitat for *A. pubescens*.

24. Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

"Clearing of native vegetation" is listed as a key threatening process Schedule 3 of the TSC Act and this is relevant to *Acacia pubescens* and CRCIF. However, as only 0.004ha-0.005ha of 7.8ha in these reserves will be affected; as creek restoration works will provide long-term protection to the EEC from erosion; and as we will be planting up to 50,000 plants as part of this project, we will be ameliorating the impact of tree removal.

As a whole this project will reduce the impact of the key threatening processes for this species, namely "loss of habitat" and "degradation of habitat".