



Our ref: DOC21/117341

Your ref: LEP001/18

Mr Andrew Kearns  
Manager Strategic Planning  
Hawkesbury City Council  
PO Box 146  
WINDSOR NSW 2756

Attention: Mr Karu Wijayasinghe

Dear Mr Kearns

**Subject:** Planning Proposal to amend Hawkesbury Local Environmental Plan 2012 for Jacaranda, Glossodia – consultation under S3.34(2)(d) of the Environmental Planning and Assessment Act 1979

Thank you for your letter of 17 February 2021 requesting comments from the Environment, Energy and Science Group (EES) regarding Planning Proposal for the Jacaranda site at Glossodia.

EES has reviewed the draft Planning Proposal, Biodiversity Certification Assessment Report and Strategy and the Development Control Plan for the Jacaranda site and provides its comments at Attachment A.

If you have any queries regarding this matter please contact Janne Grose, Senior Conservation Planning Officer on 02 8837 6017 or at [janne.grose@environment.nsw.gov.au](mailto:janne.grose@environment.nsw.gov.au).

Yours sincerely

A handwritten signature in black ink that reads 'S. Harrison'.

19/03/21

SUSAN HARRISON

**Senior Team Leader Planning  
Greater Sydney Branch  
Biodiversity and Conservation Division  
Environment, Energy and Science Group**

CC Elizabeth Kimbell, DPIE

**Subject: EES comments on Planning Proposal to amend Hawkesbury Local Environmental Plan 2012 for Jacaranda, Glossodia – consultation under S3.34(2)(d) of the EP&A Act**

The Environment, Energy and Science Group (EES) has reviewed of the following documents for the Jacaranda site at Glossodia:

- Planning Proposal report (PPR) – Jacaranda (Combined) – Amendment to the Hawkesbury Local Environmental Plan 2012 – February 2021
- Jacaranda - Biodiversity Certification Assessment Report and Strategy (BCAR&S) For Public Exhibition – 22 January 2021
- Jacaranda - Development Control Plan – 28 January 2021

and provides the following comments.

EES recently provided the following submissions (our ref: DOC19/1077382) for the Jacaranda site:

- EES response on the adequacy review of the Biodiversity Certification Application and the Planning Proposal for Jacaranda Ponds (dated 5 March 2020)
- EES response to Council (dated 25 June 2020) on the ELA response to the EES adequacy review submission and the revised BCAR&S and Vegetation zoning map
- EES response to Council on the biobank sites (dated 17 July 2020).

## PLANNING PROPOSAL

EES in its adequacy review submission recommended that Council address the comments raised in the EES letter prior to Council placing the Biodiversity Certification application on public exhibition. EES raised several issues and considers some issues have not been adequately addressed by the current PPR, including:

- **Biobank sites**

EES advised the biobank sites are for biodiversity conservation and are not for public recreational open space purposes. The biobank sites should be managed in perpetuity for biodiversity conservation. The PPR still indicates the biobank sites are for recreation/open space purposes:

- the PPR shows the western and eastern biobank sites are proposed to be used as “major open space and recreation nodes” (Figure 10) and “key open space and community destinations” for pedestrian and cyclist connectivity (Figure 24)
- the PPR still proposes to locate passive picnic/seating/viewing outlook spaces (which could include seating areas, platforms, feature hardscaping, artwork, sculpture, viewing areas) and trails within the biobank sites.

EES notes DPIE’s response (dated 21 October 2020) to Council’s query as to whether land zoned E2 – Environmental Conservation (including for the purposes of biobank sites) can be used to meet distribution of recreation opportunities performance indicators as outlined within the Government Architect NSW’s Draft Greener Places Design Guide 2020. As the management of the biobank sites is for biodiversity conservation, recreational facilities are incompatible to be located in the biobank sites and must be located outside the biobank sites apart from the walking/cycling tracks which have been excluded from the credit calculations.

- **Currency Creek**

EES recommended the entire riparian corridor along Currency Creek is zoned E2 to reflect the biodiversity values of the riparian corridor. While the PPR now proposes to zone the biobank site/riparian corridor along the creek on the eastern side of the site as E2, the PPR still proposes to zone the riparian corridor along the western side of the site as RE1.

EES recommended all pathways, infrastructure, detention basins etc (apart from crossings) are located outside the entire length of the riparian corridor. The PPR (and DCP) still propose to locate such uses in the riparian corridor.

- **Protection of Cumberland Plain Woodland on R5 - Large Lot Residential zone**

EES previously asked if Council considers the Cumberland Plain Woodland (CPW) on the R5 zoned land has conservation value and if Council intends to protect the CPW on these lots. It is unclear how the minimum lots sizes of 2000 and 4000sqm will adequately minimise impacts where the proposed R5 lots are mostly vegetated with CPW. EES advised if Council's intention is to protect the CPW on the R5 lots, options for Council's consideration could include:

- a review of the certification impact footprint to avoid impacts to the CPW
- the CPW areas are not certified, and are zoned E2 or
- alternatively, they can be made retained land and any future development will be subject to the *Biodiversity Conservation Act 2016*.

EES recommended this matter be resolved by Council before placing the biodiversity certification application on public exhibition. The Gateway Determination issued on 9 June 2020, requires Council to "Review whether the minimum lot size within the R5 Large Lot Residential land use zone will appropriately protect the Grey Box-Forest Red Gum grassy woodland, particularly areas mapped as Good and Moderate condition". The PPR is still proposing to apply an R5 zone and the PPR states "*it is intended that the majority of trees within the R2 & R5 zones (being Grey Box – Forest Red Gum grassy woodland species in this case) will be removed to facilitate earthworks that seek to reduce deep excavation works, more closely align with the existing topography of the site and reduce the net import of fill by around 320,000 cubic metres.*"

Regarding the Gateway Determination, Council has not shown how the minimum lots size will protect good to moderate condition CPW in the R5 zoned area. Statements in the PPR appear to be inconsistent as to whether the CPW is to be protected on the R5 lots – the PPR needs to clarify this. EES does not consider the PPR or the DCP (see Section 2.3.3 – Tree protection Investigation) has adequately addressed this issue.

- **Lake Park**

EES previously recommended the proposed pathway around the lake is set back at certain locations from the foreshore edge to allow native fauna access to foreshore/riparian area for foraging, roosting etc without being disturbed by people and dogs using the pathway. The PPR still indicates the loop pathway is to be located around the entire foreshore area and neither the PPR nor the DCP has addressed this.

The Gateway Determination of 9 June 2020 requires that prior to public exhibition, the planning proposal *must be amended* to include among other things the following:

- (a) *Consult and address the concerns raised by the Environment, Energy and Science (EES) Group's as identified in its letter Biodiversity Certification Adequacy Letter dated 5 March 2020:*
  - (ii) *Review whether the minimum lot size within the R5 Large Lot Residential land use zone will appropriately protect the Grey Box-Forest Red Gum grassy woodland, particularly areas mapped as Good and Moderate condition*
  - (iii) *Update the proposed maps and information in the proposal including table calculations to reflect the changes following resolution of matters raised by EES.*

EES does not consider the PPR and DCP have adequately addressed some of its key concerns raised in its recent submissions. EES requests an explanation is provided as to why the PPR/DCP has not been amended to address EES issues of the Gateway Determination.

Section 6 of the PPR (Strategic Justification) includes a number of questions including question 11 in Section 6.4 “What are the views of State or Commonwealth public authorities consulted in accordance with the Gateway determination?”. In response to this question, Section 6.4 refers to Celestino and Eco Logical Australia meeting with OEH in March 2016 to discuss the project. It also states “More recently, in September 2017, Eco Logical Australia wrote to OEH to request that the site be made subject to the transitional arrangements for Biodiversity Certification”. It states “The views of State and Commonwealth public authorities will be known once consultation has occurred in accordance with the Gateway determination of the Planning Proposal” (page 78) but the PPR makes no reference to the recent EES submissions including its adequacy review letter which included comments on the draft PPR dated July 2019.

### Concept Masterplan

EES previously suggested Table 6 (Comparison between existing and proposed Concept Masterplan) in the PPR of July 2019 (now Table 7) listing the area (ha) of RE1, E2 and SP2 land, be amended to include the area of the existing and proposed R2 and R5 zones (page 25). Table 7 has not been amended to include this information. However comparing the existing land use zoning with the proposed land use zoning (see Figure 5 and Figure 33) shows the area proposed to be zoned R2 has increased and the area that is proposed to be zoned R5 on the site has decreased which means remnant vegetation is less likely be able to be protected on the R2 zoned land compared to the R5 zoned land.

In relation to Public Recreation RE1 land/open space, the PPR indicates the proposed Concept Masterplan has increased passive and active open space across the site. However, 28.12 ha of this “open space” consists of the biobank sites which are for biodiversity conservation and should not be considered as public recreational open space. For example:

- Table 7 in the PPR indicates the existing Masterplan has 44.77ha of Council maintained open space and the proposed Masterplan has 35.38 ha yet it states that there is “greater provision of passive and active open space across the site” and that “Council will receive funding for the maintenance of the Bio banked open space in perpetuity via the biobank trust (paid for by the developer)”. In relation to the E2 land, Table 7 refers to it as “28.12 ha of bio banked / funded open space”. The biobank sites should not be considered as part of the public recreation open space.
- Section 4.42 (Public Recreational Land) states “under the Proposed Concept Masterplan the overall quantity of public recreational open space (zoned RE1) has been revised from 44.77ha to 35.38ha, as well as the inclusion of an additional 28.12 ha of conservation land (zoned E2), providing an increase in the quantity and accessibility of active and passive recreation areas”. It refers to “this increase in public recreation land” and to “the recreational land within the bio bank agreement (being 28.12ha)”.
- Section 4.42 states “when compared to the existing Concept Masterplan, the Proposed Concept Masterplan provides an improved quantity and distribution of major and secondary open spaces, and recreation nodes for passive and active use across the site” (refer to Figure 10) (page 26).
- Section 4.42 states “large parts of the RE1 land will be retained as Biobanking, therefore ensuring Council has funding in perpetuity to maintain this recreational land” (page 27).
- Section 6.2.1 of the PPR states “a total of 63.5ha of open space is proposed, representing an increase of 15.53ha compared to the existing Concept Masterplan” (page 71).
- Table 13 in the PPR states “the Planning Proposal substantially increases the quantum of public land (from 44.77ha to 63.5ha), increasing the provision of open space for future residents of Jacaranda” (page 76).
- Figure 10 (access and distribution of open space) in the PPR shows the Biobank sites as “passive open space” and the western and eastern biobank sites as “major open space and recreation nodes” (page 28).

- Figure 11 (Proposed Masterplan) shows the western biobank site as a main passive recreation node with key pedestrian and cyclist linkages and the eastern biobank site as a secondary passive recreation node (page 30).
- Figure 24 (proposed key pedestrian and cyclist connectivity) shows the western biobank site and the eastern biobank site as “Key Open Space and Community Destinations”.

The biobank sites should be managed for biodiversity conservation and not be counted towards the overall quantity of public recreational open space. As previously advised in the EES submissions of 5 March 2020 and 25 June 2020, the Biobank Agreement will dictate what is permitted to occur in the Biobank sites. The Biobank Agreement will not permit any uses that are incompatible with conservation values. In the EES submission of 17 July 2020, EES advised the biodiversity certification agreement would not permit ‘recreation areas’ in biobank sites.

The Hawkesbury Local Planning Panel Planning Advice (Attachment D of PPR) notes the proposed 580 lots could mean between 1,160 (two person households) and 2,320 (four person households) new residents and this represents a sizeable new community (page 125 of 977). The increase in the population at the site is likely to place pressure on the remnant vegetation/habitat that is to be conserved at the site and impact native flora and fauna. The PPR needs to assess the capacity of passive open space and recreational areas for the future population to mitigate impacts on the biobank sites.

The PPR appears to show a vegetated open space /green area is proposed along the northern boundary to provide a vegetated link between the two northern biobank area (see Figures 8 and 11). The proposed Land Use Zoning Map however shows this area is proposed to be zoned R5 (see Figure 33). EES supports the provision of an open space area between the two northern biobank sites but seeks clarification on why this area is not proposed to be zoned RE1 rather than R5. If an open space area is to be provided between the two biobank sites it is recommended the width is widened at the western and eastern ends.

## Zoning

### E2 - Environmental Conservation zone

#### *Biobank sites*

EES previously recommended the biobank areas on the site are zoned E2 so that the land use zoning reflects the intent to conserve the biodiversity values of the biobank sites. The biobank areas on the site include:

- two northern biobank sites (north-east and north-west)
- a large western biobank site
- an eastern biobank site providing a north to south vegetation corridor, and
- a southern biobank site along Currency Creek on the eastern side of the site.

The previous PPR (July 2019) proposed to only zone the two northern biobank sites as E2 and to zone the remaining biobank areas as RE1 - Public Recreation zone. EES in its adequacy review submission recommended all the biobank sites are zoned E2. The PPR has now amended the zoning and applied an E2 zoning to all the Biobank areas (see Figures 22, 23 and 33). EES supports this amendment.

The PPR notes Council and Celestino are in the early stages of progressing a biobank agreement based on the areas shown in Figures 22 and 23. The Proposed Concept Masterplan identifies 28.12ha (of which 12.58ha is cleared land for revegetation) of biobank area, including a large western biobank site encapsulating two open space nodes and a walking trail suitable for passive recreation (Section 4.5.6, page 42). As previously advised the Biobank Agreement will dictate what



is permitted to occur in the Biobank sites. The Biobank Agreement will not permit any uses that are incompatible with conservation values.

#### *Riparian corridor along Currency Creek - western side of site*

In its adequacy review submission, EES recommended the riparian corridor along the entire length of Currency Creek on site and any remnant native vegetation which extends beyond the riparian corridor is zoned E2, particularly as:

- the remnant vegetation is an endangered ecological community under the Biodiversity Conservation Act (BC Act) - River-flat Eucalypt Forest (RFEF)
- the RFEF is found in good condition along the creek
- Currency Creek meets the definition of a regional biodiversity link.

The PPR has now applied an E2 zoning to the riparian corridor along Currency Creek on the eastern part of the site (Biobank site) rather than an RE1 zone (see Figures 22 and 33). EES supports this amendment, however the riparian corridor along the western part of the site is still proposed to be zoned RE1 (see Figure 33). According to the PPR:

- 3.43 ha of the RFEF is proposed for conservation (biobank site) and this area is to be zoned E2.
- 3.37 ha of the RFEF is retained land and is proposed to be zoned RE1
- 0.02 ha is proposed for biodiversity certification (Table 17, page 83)

which means only 50.3% of the RFEF is protected by an E2 zoning.

It is noted Section 7.1.1 of PPR indicates the RFEF occupies approximately 7.29ha of land within the site (page 79) but Table 17 indicates the total area is 6.82 ha (page 83). This inconsistency needs to be clarified.

The entire length of the riparian corridor on the site has value in providing habitat for threatened species. The PPR indicates each of the threatened fauna species identified, or predicted to be present on the site are considered likely to use the riparian corridor along Currency Creek (Section 7.1.1, page 79) and these species include:

- Cumberland Plain Land Snail
- Little Bent-wing Bat
- Eastern Bent-wing Bat
- Eastern Freetail-bat
- Southern Myotis
- Grey-headed Flying-fox) (predicted to be present) (see Table 14).

Zoning the riparian corridor on the western part of the site as E2 (rather than RE1) would reflect its biodiversity value. EES repeats its recommendation that the entire length of Currency Creek on the site and any remnant native vegetation which extends beyond the riparian corridor is also zoned E2.

#### RE1 - Public Recreation zone

As advised in its Adequacy review submission, EES supports the zoning of the Village Green as RE1 Public Recreation which is located to the north of the riparian corridor along Currency Creek.

The PPR notes the RE1 zone was considered appropriate for the riparian corridor as it protects the natural environment and provides Jacaranda with land for open space and recreation and states “such a land use is compatible with the ecological community it adjoins” (page 67). EES agrees the RE1 zone is appropriate to use in the Village Green where it adjoins the endangered RFEF/biobank site along the Currency Creek riparian corridor on the eastern side of the site. However, along the western side of the site, the riparian corridor/RFEF is proposed to be zoned RE1 and EES does not consider the RE1 zone to be a compatible zoning for this EEC. The RFEF should be zoned E2.

## R5 - Large Lot Residential

The Gateway Determination of 9 June 2020 requires that prior to public exhibition, the planning proposal must be amended to include the following:

- 1(a) Consult and *address the concerns raised* by the Environment, Energy and Science (EES) Group's as identified in its letter Biodiversity Certification Adequacy Letter dated 5 March 2020:
  - ii. Review whether the minimum lot size within the R5 Large Lot Residential land use zone will appropriately protect the Grey Box- Forest Red Gum grassy woodland, particularly areas mapped as Good and Moderate condition; and ..... (see Appendix AA of PPR).

EES does not consider the PPR has addressed the Gateway Determination condition (1)(a)(ii).

In regard to the remnant CPW on the R5 lots, EES previously advised, if Council considers the CPW on the R5 zoned land has conservation value and Council intends to protect this CPW, it is unclear how the minimum lots sizes of 2000 and 4000sqm will adequately minimise impacts where the proposed R5 lots are mostly vegetated with CPW. Several R5 lots are not large enough to allow the erection of a dwelling house, provide an APZ and conserve the CPW. EES recommended a review of the certification impact footprint to avoid impacts to the remnant CPW that Council has identified as having conservation value. If it is Council's intention to protect the CPW on the R5 lots, these areas should not be certified, and it is recommended they are conserved as E2 - conservation area. Alternatively, they can be made retained land and any future development will be subject to the Biodiversity Conservation Act 2016.

The PPR still notes that portions of land proposed to be zoned R5 - Large Lot Residential have value for conservation purposes because they contain Grey Box – Forest Red Gum grassy woodland and still considers the R5 zone (compared to a E4 Environmental Living zone) is still considered most suitable for this portion of land because it is still a residential zone yet primarily seeks to minimise impacts of environmentally sensitive land (section 4.4.5, page 29). Section 6.1 of the PPR, states however:

*It is intended that the majority of trees within the R2 & R5 zones (being Grey Box – Forest Red Gum grassy woodland species in this case) will be removed to facilitate earthworks that seek to reduce deep excavation works, more closely align with the existing topography of the site and reduce the net import of fill by around 320,000 cubic metres. The removal of this vegetation is balanced with the conservation and improvement of other land exceeding conservation requirements as well as significant landscape embellishment including replacement tree planting (page 65).*

This statement in the PPR conflicts with Council's email of 30 July 2020 to EES which advised "Council intends to keep the removal of Grey Box – Forest Red Gum grassy woodland (CPW) on the proposed R5 zoned land within the site to an absolute minimum to ensure that potential adverse impacts of future development of R5 zoned land for residential purposes on the existing CPW to a minimal and future development is consistent with the R5 zone objectives" and that "The applicant has totally committed to this approach to keeping removal of CPW to an absolute minimum and where absolutely necessary and to include appropriate development provisions in the Jacaranda Ponds DCP to achieve this".

Section 6.1 of the PPR also states

- *The removal of a significant quantum of vegetation on land in the R5 zone in the absence of any mitigative actions would be considered contrary to the first objective of the R5 zone. Whilst it is not appropriate to provide precise details around tree removal and retention at the Planning Proposal stage, Celestino is committed to retaining as much significant vegetation as possible, and reinstating vegetation where that is not possible. Further, the removal of significant vegetation would need to demonstrate consistency with the objectives of the R5 zone, and in the absence of other environmental benefits, would be unlikely to be supported under a merit assessment (page 65-66)*

- *The fact that all of the significant vegetation on the site has not been zoned E2 or RE1 does not imply that it is intended to be removed (page 66)*

These two statements appear to be inconsistent with the statement that it is intended that most trees within the R2 and R5 zones will be removed to facilitate earthworks. It is unclear how “as much significant vegetation as possible will be retained on the R5 zoned lots”, when the PPR states it is intended that most trees within the R5 zones will be removed.

The removal of CPW from the R5 lots is also inconsistent with the conservation recommendations Section 7.1.4 of the PPR:

- Hollow bearing trees should be retained where possible, especially those located within good quality vegetation as they have ecological value and provide good habitat for threatened microbat species and other fauna (page 83).

EES notes the letter from DPIE to Council (dated 21 October 2020) states that in the revised planning proposal to be submitted to the Department for endorsement prior to public exhibition, the Department will be looking for justification that either the minimum lots sizes are able to retain the Grey Box Forest Red Gum grassy woodland or if the lot sizes need to be increased to facilitate retention of the areas mapped as good and moderate condition. Part of this justification should include consideration of the location and size of dwellings within the proposed lots see Appendix DD - page 940 of 977 in the PPR).

The Hawkesbury Local Planning Panel Planning Proposal Advice states “Areas of Grey Box – Forest Red Gum should be retained on lots of greater than 4000m<sup>2</sup>. Lots of 2000m<sup>2</sup> are generally too small for this purpose. The location, shape and size of the lots should be sufficient to allow for the erection of a house on each lot clear of any bushfire hazard while allowing for the retention of substantial areas of vegetation. The development control plan should nominate the portion of each lot available for buildings and the vegetated portion that will contribute to the band of forest being retained” (Appendix D of PPR, page 124 of 977) and that “Lot sizes need to reflect constraints and the desired character of the area and provide for retention of important vegetation” (page 125 of 977).

EES does not consider the PPR (or DCP) has adequately addressed protecting CPW on the R5 lots.

### **Biobank Sites**

The PPR states “land specifically dedicated to environmental conservation under the Proposed Masterplan (being portions of the site zoned E2 and RE1) will continue to be available for passive recreation, supporting the overall quantity and quality of open spaces across Jacaranda” (Section 4.5.4 - Conservation and Passive Open Space, page 39). Figure 19 in the PPR shows small picnic and seating spaces are proposed “to enhance the nature based recreational experience”. The Biobank sites as noted above are to be managed for biodiversity conservation purposes and should not be included in the overall quantity and quality of open spaces.

Figure 24 in the PPR (see below) shows:

- a main pathway linkage (pedestrian and cyclist network), 2.5 m wide is still proposed to be located through the north eastern Biobank site
- a main pathway linkage is still proposed to be located through the western biobank site (page 45).

EES notes the Voluntary Planning Agreement (VPA) indicates pathways are to be approximately 2m wide for biobank sites (see -page 28 of VPA) and point 6 on page 29 of the VPA states “no pathways are to run through biobanking sites”. The PPR appears to be inconsistent with the VPA and this needs to be addressed.



The Biodiversity Conservation Trust has prepared guidelines about the width of tracks in stewardship sites. The pathway width will need to be consistent with the Biobank Agreement and the PPR revised accordingly to be consistent with the Biobank Agreement.



Figure 24 - Proposed key pedestrian and cyclist connectivity within Jacaranda and to existing Glossodia community

The BCAR&S states that pathways in Biobank sites have been excluded from credit calculations (Figure 5, page 12).

#### North west biobank site

Section 7.1.2 of the PPR indicates three unnamed watercourses are likely to be replaced with civil drainage infrastructure (see page 81 in the current PPR). EES repeats it previous advice that any works to replace the watercourses with civil drainage infrastructure should not result in the clearing of the native vegetation or cause indirect impacts to the native vegetation in the biobank site.

#### North eastern biobank site

EES previously raised as an issue that Figure 21 (previously Figure 23 in the PPR – July 2019) indicates that outlooks can be located along the central ridge and can be located within biobank areas (page 42). Figure 21 notes outlooks could include seating areas, platforms, feature hardscaping / artwork / sculpture /viewing areas. EES repeats, the Biobank Agreement will not permit any uses that are incompatible with conservation values.

#### Western Biobank site and Eastern Biobank site

Figure 20 in the PPR (previously Figure 22 in the PPR – July 2019) still proposes to locate passive picnic/seating/viewing outlook spaces and trails within the biobank sites (see page 41). It also indicates fencing will be integrated with the trail design to protect conservation areas. EES repeats that the Biobank Agreement will not permit any uses that are incompatible with conservation values.

Figure 10 in the PPR shows the western and eastern biobank sites as “major open space and recreation nodes” (page 28) and Figure 24 (proposed key pedestrian and cyclist connectivity within Jacaranda) in the PPR shows the western and eastern biobank sites are proposed to be used as a “key open space and community destination” (see copy above and page 45) The Biobank sites are

for conservation and should not be identified as “major open space and recreation nodes” or “key open space and community destinations” for pedestrian and cyclist connectivity.



Figure 20 - Conservation and passive open space vision and character – Western Reserve  
 Source: Onecollective

Figure 20 – Conservation and passive open space vision and character – Western Reserve

EES notes the Main Recreational Attractions and Accessibility Plan (see copy below) in Appendix V of the PPR (page 911 of 997) does not identify the western biobank site or the eastern biobank site as a “major open space and recreation node” (see Figure 10 of PPR) or as a main recreational attractions/ destination (see Figure 24 of PPR). According to the Main Recreational Attractions and Accessibility Plan the primary recreational destinations are proposed to be located on the western side of the Lake Park and along the RE1 land to the north of the Currency Creek riparian corridor and are meant to be the main destinations that people within Jacaranda Ponds and the surrounding community will travel to for recreational purposes (jogging, cycling, picnics and barbeques and social gatherings). The PPR needs to address the inconsistency between Figures 10 and 24 in the PPR and the Main Recreational Attractions and Accessibility Plan.

### Carparking

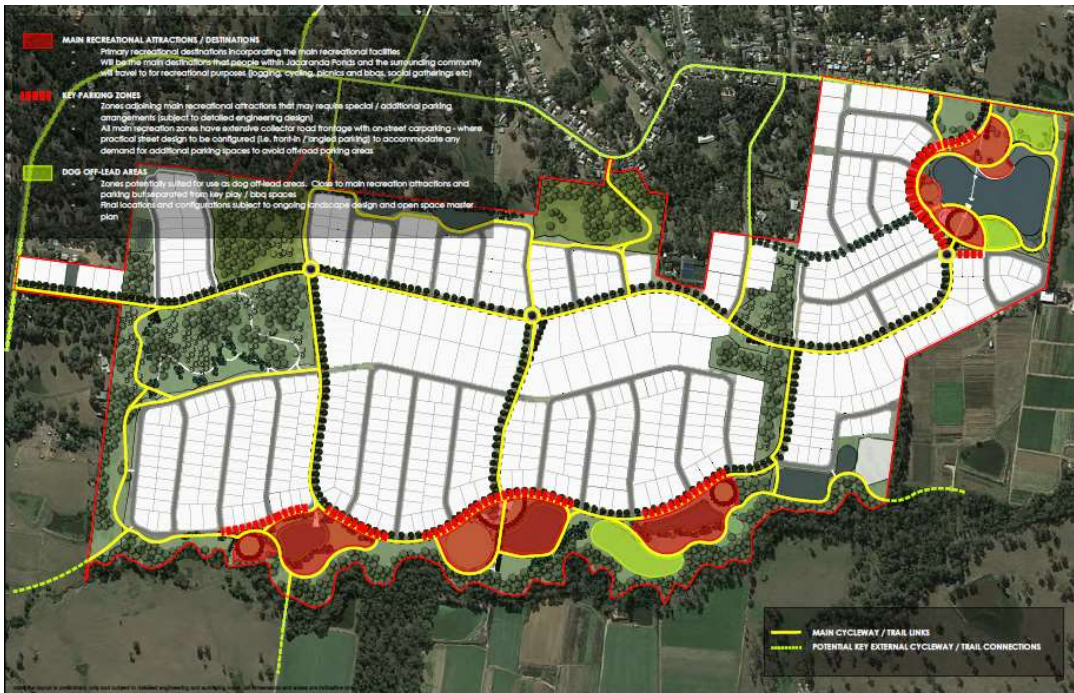
The Main Recreational Attractions and Accessibility Plan notes key parking zones adjoin the main recreational attractions that may require special/additional parking arrangements (subject to detailed engineering design) and that all main recreation zones have extensive collector road frontage with on-street carparking.

If the western and eastern biobank sites are proposed to be used as a “major open space and recreation node” or “key open space and community destination” it is unclear from Figure 20 (see below) where car parking is proposed to be located and whether it is to be on-street parking.

EES notes the VPA states at point (7) “Car parking for all reserves to be on road (no car parks in reserves)”.

Carparks must not be located in any of the Biobank sites.





Main Recreational Attractions and Accessibility Plan – source: Appendix V of PPR

### Existing Dams

Figure 20 in the PPR indicates it is proposed to fill the dams in the Western Biobank site to remove ongoing maintenance requirements (page 41). EES previously advised any works to remove the dams from the biobank sites should not result in the clearing of the native vegetation or cause indirect impacts to the native vegetation.

### Southern biobank site along Currency Creek

The southern biobank site along Currency Creek is located on the eastern part of the site.

The inclusion of the key conservation recommendation that “riparian corridors should be retained and or rehabilitated” (see Section 7.1.4 of PPR, page 77) appears to only apply to Currency Creek. The PPR needs to clarify this as Section 7.1.2 of the PPR notes Currency Creek is proposed to be retained with a riparian corridor while the three unnamed watercourses are likely to be replaced with civil drainage infrastructure (page 75). If Currency Creek is the only watercourse that is to be protected and rehabilitated with a riparian corridor. EES repeats its previous suggestion that the key conservation recommendation is amended from “riparian corridors should be retained and or rehabilitated” to “the Currency Creek riparian corridor should be protected and fully rehabilitated with a diversity of local native species from the relevant vegetation community”.

Figure 24 in the PPR shows proposed pedestrian and cyclist pathways are located outside the riparian corridor within the biobank site and retained land apart from two creek crossings. Section 7.1.4 of the PPR, however still includes the key conservation recommendation that “detention basins, cycleways and footpaths are considered appropriate for vegetated riparian zones provided they are offset” (page 84). EES previously sought clarification as to whether this key recommendation is intended to only apply to the riparian corridor within the proposed retained land or also to the biobank site along the creek. This still needs to be clarified.

EES does not support the locating of detention basins, cycleways and footpaths etc in the riparian corridor of Currency Creek in either the biobank site or the retained land. Such uses should be located outside the riparian corridor along the entire length of the creek as locating such uses in the riparian zone could result in potential clearing / disturbance / degradation of remnant RFEF and

effect the rehabilitation of the corridor; disturb native fauna habitat and disturb of native fauna (including threatened species) by people and companion animals using the paths.

Figure 19 in the PPR includes the following key design driver:

- conserve and enhance existing vegetation and natural site features – potential to revegetate cleared spaces to strengthen the environmental qualities – whilst creating a lower maintenance and more natural setting (page 40).

It is unclear if this key driver relates to the biobank site or to the RE1 zoned land which adjoins the biobank site along Currency Creek.

EES recommends the PPR includes a scaled plan which shows the location of:

- Currency Creek
- the top of highest bank
- the proposed riparian corridor width (measured from top of highest bank)
- remnant Alluvial Woodland along the creek
- the proposed eastern biobank site along the creek
- the proposed location of any detention basins, pathways, picnic areas etc in relation to the riparian corridor
- proposed dog off leash areas.

### **Currency Creek riparian corridor along the western section of the site**

The BCAR&S indicates the remaining western section of riparian corridor along Currency Creek will be retained land which is defined as land not proposed for biodiversity certification or subject to proposed conservation measures (page x).

The PPR shows key pedestrian and cyclist linkages are located outside the riparian corridor apart from two creek crossings. At the site inspection of 20 September 2018, Council advised that it wants the pathway located outside the riparian vegetation. EES supports locating the pedestrian and cyclist linkages (apart from crossings) outside the riparian corridor to protect RFEF and the habitat it provides.

Section 7.1.4 of the PPR as noted above, still includes a Conservation Recommendation that it is appropriate to locate detention basins, cycleways and footpaths in the vegetated riparian zone of Currency Creek (page 84) and also states that “The current locations of paths and cycle ways are indicative only and would be determined at the detailed DA stage” (section 7.1.4, page 84). At the detailed DA stage, the location of this infrastructure should be excluded from any mapped areas of RFEF and the proposed rehabilitation of the riparian corridor.

EES does not support the locating of detention basins, cycleways and footpaths (apart from crossings) etc in the riparian corridor particularly where it will impact mapped areas of RFEF or effect the rehabilitation of RFEF along the riparian corridor.

Section 7.4.2 of the PPR indicates on-site detention basins are to be located ‘adjacent to’ each bio-retention system and the detailed location of each proposed detention basin is provided at Appendix N (page 87). Figure 4.1 in Appendix N only shows the “indicative location of the proposed bio-retention system” but Section 4.4 of Appendix N notes the water quality control measures are intended to be ‘co-located with stormwater quantity management measures (detention basins)’. It is unclear if there is a difference is between detention basins being located ‘adjacent to’ as opposed to being ‘co-located with’ the proposed water quality measures. Clarification is required on this.

Figure 5 in the DCP appears to show that no stormwater detention basins are proposed to be located along the riparian corridor of Currency Creek and the BCAR&S states no works are proposed on any lands that form part of the riparian buffer (section 2.4.2.2, page 57). Based on this it appears the detention basins are to be located outside the riparian corridor so it unclear why the

Section 7.1.4 of the PPR recommends it is appropriate to locate detention basins in the vegetated riparian zone. EES recommends:

- the Conservation Recommendation in Section 7.1.4 is deleted which recommends it is appropriate to locate detention basins, cycleways and footpaths in the vegetated riparian zone
- the PPR is amended to state detention basins, cycleways and footpaths are not to be in the biobank sites or within retained land where remnant RFEF occurs, or where it will impact the rehabilitation of RFEF in the riparian corridors.

Figure 19 as noted above, refers to the potential to revegetate cleared spaces to strengthen the environmental qualities. It is unclear where the existing cleared spaces are located which are proposed for revegetation. Figures 16, 17 and 18 should be amended to locate the existing cleared spaces that have potential for revegetation.

### **The Lake Park**

In its submission on the adequacy review EES recommended Figures 15 and 16 in the PPR (July 2019) are amended to address the following:

- Identify what the dark green shaded areas are meant to be which are shown near the lake foreshore. It is unclear what these areas are. Figure 14 in the current PPR has not addressed this.
- The loop pathway should not be located around the entire foreshore area. EES previously recommended the pathway is set back at certain locations from the foreshore edge by at least 40 metres to allow native fauna such as waterbirds, ducks etc access to foreshore/riparian area for foraging, roosting etc without being disturbed by people and potentially dogs using the pathway. The pathways shown in Figure 14 of the PPR are still located in the same locations as those previously shown in Figure 16 of the draft PPR. The pathways should be set back at certain locations from the foreshore edge.
- Where remnant native vegetation currently occurs in the park it is protected and rehabilitated. Figure 14 in the current PPR still only indicates there is potential retention of existing vegetation subject to detailed design rather than outlining that remnant native vegetation in the park should be retained and protected and not cleared. Table 8 in the PPR however states “portions of the Lake Park coincide with significant vegetation which will be protected”. It is recommended the DCP includes a control to this effect.

### *Fauna Habitat around the lake foreshore*

Figure 16 in the previous PPR showed active recreational space, kick and throw areas, playground, BBQ shelters, viewing platforms are proposed near the lake foreshore. EES advised there needs to be areas of native vegetation (trees, shrubs and groundcover) and fringing vegetation established around parts of the lake to provide habitat for native fauna and the figures in the PPR are amended to reflect this. The current PPR has not addressed this. Table 8 in the PPR states the main recreational facilities will be provided within the western side of the Lake Park and the park provides a series of recreation nodes (seating, BBQ shelters etc) that will be provided around the eastern side of the lake (page 33). EES recommends a control is included in the DCP to establish habitat areas for native fauna around the lake.

### *Dog Exercise Areas*

The Main Recreational Attractions and Accessibility Plan (see above and Appendix V of PPR - page 911 of 997) shows one of the potential off leash dog leash areas in the Lake Park adjoins the lake foreshore area. EES recommends the off-leash areas are set back from the lake foreshore area to allow native fauna such as waterbirds, ducks etc access to foreshore/riparian area for foraging, roosting etc without being chased and disturbed by dogs. EES recommends a control is included in the DCP to this effect.



EES previously recommended pathways around the lake are set back at certain locations from the foreshore edge by at least 40 metres to prevent native fauna being disturbed by people and dogs using the pathway. EES recommends a control is included in the DCP to this effect.

### **Village Green**

Figure 15 in the PPR is titled “Open space proximity to residences” and the figure includes the biobanking sites. The key to this figure should identify the biobank sites are for conservation purposes. The key to Figure 15 does not match what is shown on Figure 15.

It is unclear what the purple line is meant to be on Figure 16. It is suggested Figure 16 is amended to clarify this and it also shows the location of the creek, the riparian corridor width and the boundary of the site.

Figures 16 and 17 show large open grassed areas are proposed in the Village Green. EES recommended areas in the Village Green are also planted with local native species from the relevant local native vegetation communities to improve the habitat value of the Village Green, including:

- land adjacent to the riparian corridor to increase the width of the corridor to improve resilience and connectivity along the creek and habitat provided by the riparian corridor
- (6) the informal creek side passive areas
- (7) the areas for the WSUD / bio-basins.

The PPR and DCP has not addressed this and it is recommended the DCP includes a control to this affect.

Figure 19 in the current PPR includes the following key design driver:

- conserve and enhance existing vegetation and natural site features – potential to revegetate cleared spaces to strengthen the environmental qualities – whilst creating a lower maintenance and more natural setting (page 40)

EES recommends Figures 16,17 and 18 in the PPR are amended to show the location of the existing cleared spaces that have potential for revegetation.

### ***Dog Exercise Areas***

The Main Recreational Attractions and Accessibility Plan (see above) in Appendix V of the PPR (page 911 of 997)) shows a potential dog off leash area is located in the Village Green which adjoins the Biobank site along Currency Creek. EES in its submission to Council (dated 25 June 2020) recommended the DCP include a control that off leash and on leash dog exercise areas must not adjoin the Biobank sites to avoid potential impacts and disturbance of native fauna. The DCP has not addressed this. EES recommends the DCP includes a control to this effect (see comments on DCP below).

### **Green Streets**

EES previously noted the Green Streets primarily run north-south and recommended that in terms of mitigating the urban heat island effect that street tree planting is also proposed along the streets which run east-west. The ELA response of 15 May 2020 to the EES adequacy review advised additional planting along the east – west running streets can be accommodated (page 20). EES recommends Figure 25 (proposed open space, green streets and multipurpose pathway network) in the PPR amended to address this and show planting in an east-west direction along the local streets

EES previously advised the PPR needs to explain the importance of street tree planting to improve urban tree canopy, mitigate the urban heat island effect and improve local habitat but the PPR has not addressed this. EES recommended the street planting:

- uses local provenance native plant species from the native vegetation community which occur on site to enhance local biodiversity, rather than use non-local native or exotic plants
- uses advanced and established local native trees
- provides enough area/space to allow the trees to grow to maturity – this includes using underground electricity power lines instead of overhead power lines to avoid street trees needing to be cut and lopped.

The ELA response of 15 May 2020 to the EES adequacy review advised the tree species planted will be a mix of native species and exotic species that are currently planted throughout the LGA. EES recommends the DCP includes a control to address the EES recommendation

#### Appendices

EES recommends the Appendices section of the PPR is amended to clearly identify the various appendices.

### **BIODIVERSITY CERTIFICATION ASSESSMENT REPORT AND STRATEGY**

#### 4.6 Indirect Impacts

The BCAR&S notes “indirect impacts have been considered in accordance with the BCAM and have been determined to be negligible on the basis that all direct impacts have been assessed on the assumption of complete loss of all biodiversity values including for Asset Protection Zones (APZs)” (page xii , section 4.6, page 48). It indicates the APZs will provide a buffer between the residential lands and the adjacent conservation area, and mitigate any indirect impacts such as increased weeds, storm water run-off (page xii).

The PPR and appendices show active recreation spaces, detention basins, pathways are proposed to be in the Village Green in close proximity to the Currency Creek Biobank site. EES previously advised the BCAR&S should assess whether the proposed active recreation spaces, stormwater detention basins, creek-side trails, recycled water irrigation areas, and are likely to have any potential direct or indirect impacts on the conservation areas/biodiversity values.

The BCAR&S states “Celestino Pty Ltd will prepare and implement a construction Environment Management Plan for vegetation clearing to guide the development outlined in this biocertification assessment and ensure that all direct and indirect impacts (e.g. APZs, utilities, access, stormwater runoff) are contained within the development footprint and appropriate mitigation measures are put in place to minimise any indirect impacts to threatened fauna (page xiii). Clarification is required as to whether the proposed fauna preclearance survey protocol and dewatering plan applies to all the Jacaranda site and all protected native fauna species and not just threatened species. Section 6.5 of the BCAR&S implies the CEMP specifically will address the management of land proposed for conservation measures (page 69).

EES previously sought details on where it is proposed to irrigate with the recycled water, whether it will be in proximity to the biobank sites and whether it is proposed to irrigate the Village Green with it as the Currency Creek biobank site adjoins and is located down slope of the Village Green. The application and use of recycled water at the site should not impact the biobank sites.

The current BCAR&S notes recycled water could be used for irrigation of ovals and open space and the water re-entering the environment would be of a high quality and very low nutrient load and as such no indirect impacts are expected to occur (section 4.6, page 48). The DCP also includes a control that recycled water may be used in public parkland for irrigation of lawns and gardens provided there is no impact to biodiversity areas (see section 2.3.5 – Control C.5 in the DCP). In addition to not changing the quality of water that enters the biobank sites, the application of recycled water for irrigation on adjoining ovals and open space should not impact the biobank sites by changing the quantity of water/runoff/seepage that enters the biobank sites.

EES previously advised the BCAR&S should also address, whether:

- companion animals will be permitted in the Village Green as the Village Green adjoins the Currency Creek biobank site. If companion animals are to be permitted, the BCAR&S should assess the potential impacts of this on biodiversity values in the Biobank site as a walking trail is proposed to be located immediately adjacent to the biobank site at some locations (see Figure 5 of BCAR&S, page 12). The current BCAR&S only states that any indirect impacts likely to occur as a result of the trail running adjacent to the creek would be managed through the implementation of the Biobank Agreement and the Vegetation Management Plan (section 4.6, page 49) but it has not specifically addressed the impact of dogs of leash near the biobank site. EES notes the Main Recreational Attractions and Accessibility Plan (see above) in Appendix V of the PPR (page 911 of 997) shows a potential dog off leash area is proposed to be located in the Village Green which adjoins the Biobank site along Currency Creek.
- fertiliser/nutrients from the active recreation space areas and irrigation areas can runoff and impact the biobank sites. The current BCAR&S notes recycled water could be used for irrigation of ovals and open space and the water re-entering the environment would be of a high quality and very low nutrient load and as such no indirect impacts are expected to occur (section 4.6, page 48). It is unclear if fertiliser will be applied to the open space area/ovals (as part of managing/maintaining these areas) which are in close proximity to the Currency Creek Biobank site and whether fertiliser /nutrient runoff will impact the biobank site.
- the detention basins require outlets to be constructed either near, or within the Biobank site, and if so, whether the outlets require the clearing or disturbance of any native vegetation in the Biobank site etc

EES recommended the BCAR&S should include details including a scaled plan on where the proposed irrigation areas, detention basin outlets etc are to be in relation to the Biobank sites but this information has not been provided. If it is not possible to provide this information at this stage, then it should be ensured that the irrigation areas and these structures don't lead to any direct or indirect impacts on the biobank sites.

#### Impacts on Red Flagged Areas

It is noted Section 5.1 of the BCAR&S has been amended as the previous BCAR&S stated "the development will not impact any native vegetation within the riparian buffer" (page 46 of previous BCAR&S) but it now states "the development will impact 0.002 ha of native within the riparian buffer" (page 52). EES previously advised it is unclear whether the pedestrian/cycle path crossings of the creek, or any WSUD/bio-basin outlets are likely to impact native within the riparian buffer as

- the PPR appears to show that two pedestrian and cycle paths crossings are proposed to be located within the riparian corridor
- the PPR shows WSUD/ bio basins, active recreation spaces are in close proximity to the riparian buffer along Currency Creek and it is unclear if they are likely to impact native riparian vegetation.

Section 2.4.3.2 of the BCAR&S states "no works are proposed for Currency Creek or any lands that form part of the riparian buffer" (page 57) but this does not appear to be consistent with:

- a key conservation recommendation in the PPR that detention basins, cycleways and footpaths are considered appropriate for vegetated riparian zones provided they are offset (Section 7.1.4).
- the proposed DCP controls in Section 2.2.5 (Riparian Corridor).

This inconsistency between the BCAR&S, PPR and the DCP needs to be addressed.

Section 2.4.4 of the BCAR&S refers to "the conservation or retention of 4.82ha of vegetation in the riparian buffer" but it also states "of the area to be retained 2.26 ha will be conserved and managed in-perpetuity as part of a Biobank Agreement site. The remaining 2.93 ha will be retained and managed under a VMP" (page 58) but these two areas of 2.26 ha and 2.93 ha add up to 5.19 ha.

## DEVELOPMENT CONTROL PLAN

### Table of Contents

The inclusion of a list of Figures in the DCP's Table of Contents would be helpful for ease of reference in using the DCP.

### 2.1 The Concept Masterplan

A number of figures in the DCP, including Figure 2 (Jacaranda Concept Master Plan), Figure 3 (Character Areas Structure Plan), Figure 7 (Movement Network) and Figure 9 (Open Space Network) show an open space /green recreation area is proposed along the northern boundary between the two northern biobank areas. The proposed Land Use Zoning Map (figure 33), in the PPR however shows this area is proposed to be zoned R5.

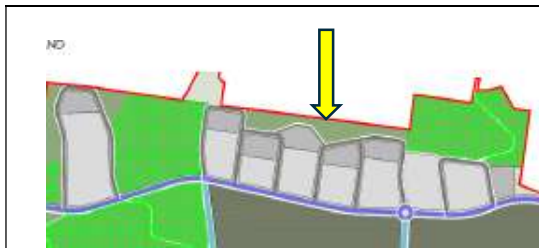


Figure 2 – extract from Jacaranda Concept Masterplan (DCP)



Figure 7 – Extract from Movement Network (DCP)



Figure 9 – Extract from Open Space Network (DCP)



Figure 9 – Extract from Land Use Zoning Map (PPR)

EES supports the provision of an open space area between the two northern biobank sites but seeks clarification on why this area is not proposed to be zoned RE1 rather than R5. If an open space area is to be provided between the two biobank sites it is recommended the width is widened at the western and eastern ends.

EES recommends the key to Figure 2 is amended to include:

- Biobank **Conservation** Areas

### 2.1.1 Place and Character

EES supports the inclusion of Objective O.2 in the DCP:

O.2 *Ensure that development responds to the general topography, natural landscape features, native vegetation, and riparian corridors*

EES considers it is important the development responds to the topography, existing native vegetation and the riparian corridors etc.

### 2.2.3 Biodiversity

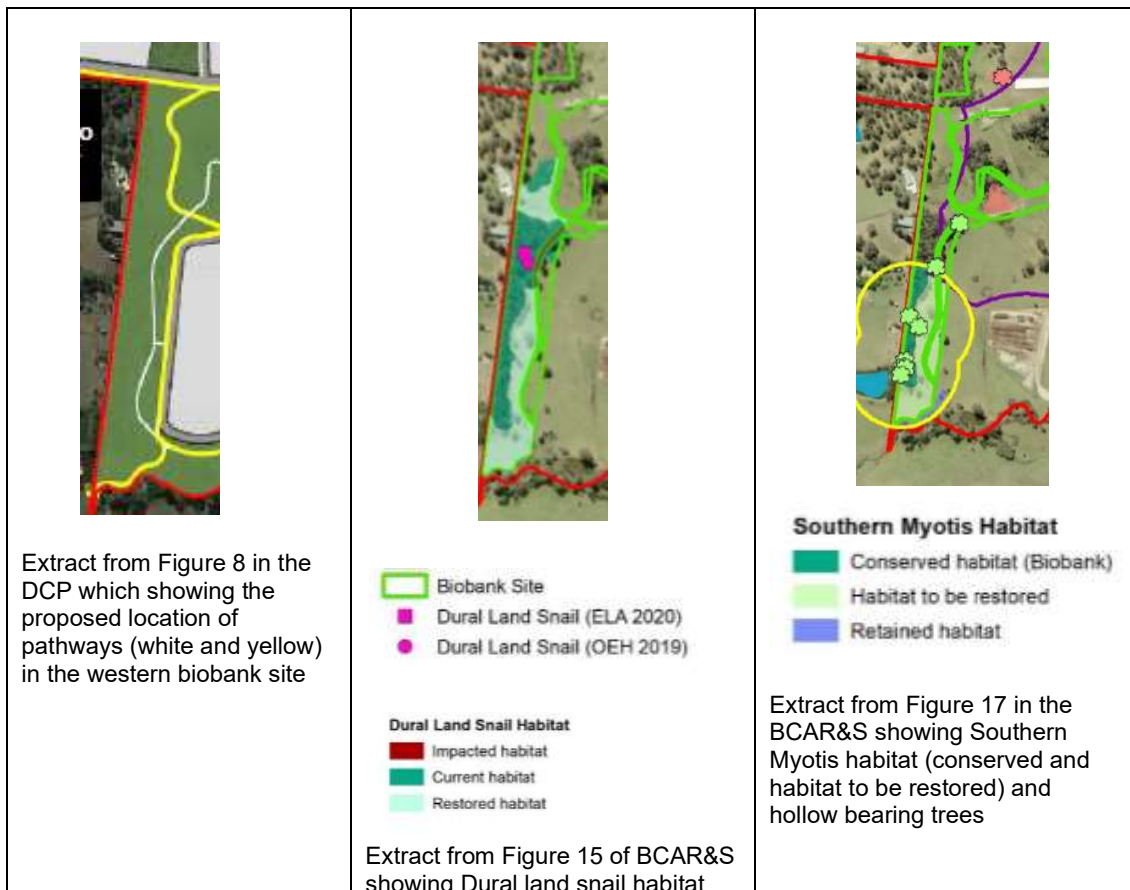
EES notes the proposed inclusion of Objective O.1 “to conserve the remaining high and very high value native vegetation and biodiversity within Jacaranda” in the DCP. The high value native vegetation will primarily be protected and conserved by the Biobank sites and the Biobank

agreement. The Biobank Agreement will dictate what is permitted to occur in the Biobank sites. The Biobank Agreement will not permit any uses that are incompatible with conservation values.

It is important the DCP includes an objective to protect, conserve and rehabilitate CPW and RFEF and biodiversity that occurs elsewhere on the Jacaranda site (i.e. outside the Biobank sites) including remnant CPW and RFEF and scattered paddock trees that occur on retained land and the biodiversity certified land, particularly as the RFEF along Currency Creek (which includes the retained land) is in good condition and CPW on the R5 zoned land is in good-moderate condition.

EES in its submission of 25 June 2020 recommended the DCP include a control that off-leash and on-leash dog exercise areas must not adjoin the biobank sites to avoid potential impacts on native fauna. EES recommends a control is provided in the DCP to this effect and a figure is included which clearly identifies the off-leash dog exercise areas in relation to the biobank sites.

In relation to the proposed pathways shown as white and yellow lines on Figure 8 near the western boundary of the site, it is recommended a control is included that the design and location of the pathways should avoid impacts on Dural Land Snail and Southern Myotis habitat and hollow bearing trees. The proposed pathways appear to be near the Dural Land Snail and Southern Myotis habitat that is to be conserved and restored and several hollow bearing trees. Locating the proposed pathways so as to avoid the Dural Land Snail habitat is considered important as the BCAR&S indicates that only one area within the Biodiversity Conservation Assessment Area is considered habitat for the Dural Land Snail where the species was identified during the 2020 surveys (section 2.1.4, page 19).





The BCAR&S indicates the proponent will prepare and implement a Construction Environment Management Plan to guide development and this will include mitigation measures to minimise any indirect impacts to *threatened fauna*. It notes the mitigation measures will include

- pre-clearance and clearance surveys of fauna
- dam dewatering protocols
- adaptive reuse of vegetation material (page xiii).

EES recommends the DCP includes controls which require:

- pre-clearance and clearance surveys and relocation of fauna to be conducted by a qualified Ecologist for any “protected animals” under the BC Act to determine the presence of any nests, dreys or native fauna using hollows where vegetation is to be removed on the Jacaranda site
- a dewatering plan to be developed by a suitably qualified and experienced ecologist prior to the dewatering of any farm dams on the Jacaranda site.

The pre-clearance and clearance surveys/inspection/ fauna relocation and dam dewatering protocols should apply to all “protected animals” under the *Biodiversity Conservation Act 2016* (BC Act) and not just threatened fauna. Protected animals are defined in Schedule 5 of the BC Act to include any of the following that are native to Australia or that periodically or occasionally migrate to Australia (including their eggs and young) -

- amphibians - frogs or other members of the class amphibia
- birds - birds of any species
- mammals - mammals of any species (including aquatic or amphibious mammals but not including dingoes)
- reptiles - snakes, lizards, crocodiles, tortoises, turtles or other members of the class reptilia.

Seed from the native plants to be removed is collected and used for revegetation across the site including the rehabilitation of Currency Creek riparian corridor and the Biobank sites site landscaping etc. It is important seed collection commences early so that local native provenance plant species are available to be planted, and the trees are advanced and established in size to improve the urban tree canopy and local biodiversity

Native trees approved for removal are salvaged for reuse including hollows and tree trunks (greater than approximately 25-30cm in diameter and 3m in length) and root balls and these are used in the rehabilitation of the riparian corridor along Currency Creek, and the Biobank sites to enhance habitat

EES recommends ecological links are also preserved and enhanced on the site and Objective O.3 is amended to include this. To assist in preserving and enhancing ecological links on the site, it is suggested the DCP includes a control for a fauna underpass/rope crossing to be provided under/over the main collector road (subject to ecological advice) to facilitate fauna movement between the western and north east biobank sites and to mitigate road kill

It is recommended the following amendments are made to the Objectives and Controls for Biodiversity:

- O.1 ***to protect, conserve and rehabilitate Cumberland Plain Woodland and River-flat Eucalypt Forest native vegetation, paddock trees and biodiversity within the Jacaranda site including existing native vegetation on the retained land and biodiversity certified land***
- O.3 to preserve and enhance the ecological values of Jacaranda and ecological links ***on site and*** to surrounding areas, ***including the rehabilitation of the riparian corridor along Currency Creek***

- C.2 a fauna underpass / rope crossing is to be provided under/over the main collector road (subject to ecological advice) to facilitate fauna movement between the western and north east biobank sites
- C.3 **seed from the native plants to be removed shall be collected prior to any vegetation clearing and used for growing local provenance plants for revegetation at the site including the rehabilitation of Currency Creek riparian corridor, the Biobank sites and site landscaping**
- C.4 **prior to any clearing of vegetation on the site pre-clearance and clearance surveys must be conducted by a qualified Ecologist for any “protected animals” under the BC Act to determine the presence of any nests, dreys or native fauna using hollows. Any resident native fauna potentially impacted by the removal of the trees should be relocated (preferably prior to removing the trees) to an appropriate nearby location and in a sensitive manner under the supervision of a qualified ecologist/licensed wildlife handler**
- C.5 **A dam dewatering plan must be prepared and implemented by a suitably qualified and experienced ecologist prior to dewatering of farm dams. The dewatering plan will include native fauna relocation requirements, and include details on:**
- **the native fauna species known to inhabit and/or use the dam which require transfer from the dam**
  - **the methodology proposed to transfer the fauna**
  - **the location and suitability of the proposed relocation sites**
  - **any potential impacts of relocating the fauna to the relocation sites**
  - **the need for a suitably qualified ecologist to be present during the dam dewatering.**
- C.6 **Native trees approved for removal shall be salvaged for reuse to enhance habitat in the Biobank sites and the riparian corridor along Currency Creek including tree hollows and tree trunks (greater than 25-30 centimetres in diameter and three metres in length), and root balls**
- C.7 **Path and cycleways shall be located so as to avoid, or minimise, disturbance of any Endangered Ecological Community, hollow bearing trees, or any threatened species including the Dural land Snail and Southern Myotis**
- C.8 **Off-leash and on-leash dog exercise areas shall not adjoin or be in proximity to the Biobank sites to avoid disturbing native fauna**
- C.9 **Asset Protection zones are to be located outside the Biobank sites**
- C.10 **Native Vegetation and habitat in the Lake Park shall be protected and enhanced**
- **fauna habitat areas shall be established around the lake.**
  - **Any off-leash dog exercise areas shall be set back from the lake foreshore area to allow native fauna access to foreshore for foraging and roosting without being disturbed by dogs**
  - **pathways around the lake shall be set back at certain locations from the foreshore edge by at least 40 metres to prevent native fauna being disturbed by people and dogs**
- C.11 **Areas within the Village Green are to be planted with local native species from the relevant local native vegetation communities to improve the habitat value, including:**
- **land adjacent to the riparian corridor to increase the width of the corridor to improve resilience and connectivity along the creek and habitat provided by the riparian corridor**
  - **the informal creek side passive areas**

- ***the proposed WSUD / bio-basins.***

### 2.2.5 Riparian Corridor

EES supports the DCP including a specific section on the riparian corridor along Currency Creek, especially as Currency Creek is defined as a regional biodiversity link (see section 1.7 of BCAR&S), and the corridor retains an endangered ecological community (RFEF) which is in good condition. The riparian corridor along Currency Creek should be protected and fully rehabilitated for the length of the site with local native provenance tree, shrub and groundcover species from the RFEF native vegetation.

Control C.1 requires a riparian buffer area that averages 40m wide to be provided along the northern side of Currency Creek. Where existing remnant native vegetation occurs beyond the 40m width, EES recommends this vegetation is protected and included in the riparian corridor, particularly as the adjoining land is RE1 zoned land.

EES is concerned the DCP includes the following Control C.3:

- C.3 Within the riparian Buffer Area existing native vegetation is to be retained and rehabilitated except where:
- Clearing is required for infrastructure and servicing
  - Pedestrian and cycle pathways are proposed
  - Pedestrian, cycle and vehicle crossings are proposed

EES previously advised it does not support locating detention basins, cycleways and footpaths in the vegetated riparian zone of Currency Creek. EES repeats detention basins, cycleways and footpaths should be located outside the riparian corridor on the adjoining RE1 zoned land.

EES in its submission to Council (dated 25 June 2020) advised infrastructure including detention basins, should not be sited in either the Biobank site along Currency Creek or within the retained land which contains RFEF and recommended the DCP include controls to ensure:

- the detention basins are located to avoid any impacts on native vegetation that is to be retained or areas that are to be rehabilitated with native vegetation
- detention basins which adjoin the Currency Creek Biobank site, are vegetated with suitable local native provenance plant species from the vegetation community that occurs or once occurred in this location

Locating detention basins in the riparian corridor is not consistent with Figure 5 in the DCP. Figure 5 shows no stormwater detention basins are proposed along the riparian corridor of Currency Creek. Sewer service, gas lines, other utility or communication lines (except for crossings where necessary) should be located outside the riparian corridor.

Control C.3 refers to vehicle crossings of the riparian corridor. Figure 7 in Section 2.3.1 of the DCP does not indicate a road is proposed to cross Currency Creek and it is unclear where the road crossing is proposed to be located. Details are required on this and Figure 7 needs to be amended to show the location. Any proposed pedestrian, cycleway or road crossing of the creek should maintain riparian connectivity and provide fauna passage and an Objective is included to this effect.

It is unclear why it is necessary to locate pedestrian and cycle pathways in the riparian corridor when the pathways could be in the adjoining Village Green. The PPR appears to show the key pedestrian and cyclist linkages are located outside the riparian corridor apart from what appears to be two pedestrian creek crossings (see Figure 8 – proposed concept Masterplan and Figure 11). As previously noted in the EES Adequacy submission, Council advised at the site inspection of 20 September 2018, that the pathways were to be located outside the riparian vegetation.

The pedestrian and cyclist pathways (apart from crossings) should be located outside the riparian corridor so as to protect and rehabilitate the endangered ecological community that occurs along the creek and to limit people and companion animals disturbing native fauna that use the corridor for habitat, particularly as threatened fauna which were identified, or predicted to occur on the site are likely to use the riparian corridor along Currency Creek (Section 7.1.1, page 79 of PPR).

EES recommends the following amendments are made to the draft objectives and controls

#### Objectives

- O.3 ***Any pedestrian, cycleway or road crossing of Currency Creek must be designed to maintain riparian connectivity and provide fauna passage and be sensitive to the geomorphic functions of the watercourse.***

#### Controls:

- C.1 A Riparian Buffer Area that averages 40 m wide (***measured from the top of bank***) is to be provided along the northern side of Currency Creek generally consistent with Figure 4. ***Where remnant native vegetation occurs beyond the 40m corridor it should be protected and included in the riparian corridor***
- C.2 A Vegetation Management Plan shall accompany DAs for land within the Riparian Buffer Area ***be prepared and implemented for the protection, rehabilitation, management and maintenance of the riparian corridor along Currency Creek as part of the development of the site***  
***- the riparian corridor along Currency Creek is to be fully vegetated with local native provenance tree, shrub and groundcover species from the River-flat Eucalypt Forest native vegetation***
- C3 Within the riparian Buffer Area existing native vegetation is to be retained and rehabilitated except where:  
— ~~Clearing is required for infrastructure and servicing~~  
— ~~Pedestrian and cycle pathways are proposed~~  
- Pedestrian, cycle, ***utility*** and vehicle crossings are proposed.
- C.4 The location of infrastructure, ***detention basins, wetlands and ponds***, service utilities, ~~ing~~, pathways (***except for crossings***) is to ***be located outside the riparian corridor along Currency Creek and must*** consider vegetation that is to be substantially retained and protected ***in the Village Green***
- C.5 delete condition 5
- C.8 ***All Asset Protection zones are to be located outside the riparian corridor along Currency Creek***
- C.9 ***Any pathway lighting in the vicinity of riparian corridor must be designed and constructed to minimise spillover into the riparian land***
- C.9 ***A permanent physical barrier shall be placed at the landward extent of the riparian corridor (such as bollards or a pathway) to prevent damage to riparian vegetation from maintenance activities (mowing, slashing etc) on the adjacent Village Green.***

EES recommends Figure 4 in section 2.2.5 is amended to include a key and a scale and the figure clearly overlays and shows:

- the location of the creek
- the top of bank
- the 40 m wide riparian corridor (measured from top of bank)
- the Biobank site along the creek

- existing EEC remnant native vegetation along the creek
- the site boundary.

### 2.3.2 Open Space and Public Domain

EES recommends an additional objective is included to protect and conserve remnant native vegetation in the open space /public domain and enhance biodiversity by planting local native vegetation and providing fauna habitat:

#### O.4 ***To protect and conserve remnant native vegetation in the open space /public domain and enhance biodiversity local native vegetation***

#### Table 5 Lake Park

EES recommends the following amendment is made to the second control:

- Improve biodiversity and ecology by retaining existing trees within the open space where possible, ***planting local native species in the park (rather than use exotic or non-local native species, enhancing habitat by the provision of logs on the ground,*** and improving Lake water quality

EES previously recommended pathways in the Lake Park are set back at certain locations from the foreshore edge by at least 40 metres to allow native fauna such as waterbirds, ducks etc access to foreshore/riparian area for foraging, roosting etc without being disturbed by people and potentially dogs using the pathway. The eighth control does not address this recommendation and EES recommends the following amendment is made to it:

- Provide a continuous pedestrian link around the lake that connects the various functions. ***The pathway must be set back at certain locations from the edge of the lake by at least 40 metres to allow native fauna access to foreshore/riparian area without being disturbed***

Figure 14 (community health and well-being) does not show the provision of any shade trees along the pathway to mitigate the urban heat island effect, EES recommends the ninth control is amended as follows:

- Provide structured semi mature ***local native*** planting to establish spaces ***that provide shade to mitigate the urban heat island effect*** and create day one impact.

Table 6 indicates it is going to provide spaces (nodes) that encourage recreation while being sympathetic to the biobank areas and includes controls to include viewing areas/outlooks/children's play spaces shelters and furniture (page 26) – also see Figures 17 and 18. Recreation areas should not be located in the biobank sites

### 2.3.3 Tree Retention Investigation

EES recommends objective O.1 is amended as follows to protect and CPW on the R5 lots (see page 28):

- O.5 ~~To provide for further consideration as to whether certain high quality~~ ***To protect and retain*** Cumberland Plain Woodland within the site shown 'good' and moderate within the R5 zoned land in Figures 19 and 20 ~~should and can be retained~~ on individual lots
- C.3 Where trees with significant habitat are identified to be removed, the tree hollows ***and tree trunks*** shall be relocated to the Riparian Corridor and/or Biobank Areas to improve habitat (page 28)

### 2.3.4 Sustainability and Resilience

The Flora and Fauna Assessment in the PPR recommends using local provenance species in rehabilitation works and within street/neighbourhood landscaping (section 6.1, page 27). EES



supports this and recommends that Objective O.1 and Control C.1 are amended, and the following controls are included:

- O.1 To maximise the benefits of **local native provenance** tree canopy and greener streets to residential lots
- C.1 Street trees and landscaping within residential lots are to maximise solar access to dwellings during winter and shade during summer. ~~Deciduous~~ **Appropriate local native provenance** species are preferred for the northern sides of dwellings to maximise the climatic and amenity benefits of trees and provide for adequate solar access to dwellings and private open space
- C.6 **The road networks are to plant a diversity of local native provenance tree shrub and groundcover species from the relevant native vegetation communities that occur on the site rather than plant exotic or non-local native species**
- C.7 **The road networks shall use advanced and established local native trees**

### 2.3.5 Infrastructure and Utilities

EES supports the inclusion of Control C.1 that ideally no utilities are to be permitted within riparian areas except where it is necessary to cross riparian areas. Where utilities are required to cross the riparian corridor, they should be under bored as EEC occurs along the creek.

- C.5 A reticulated recycled water system is to provide recycled water from the proposed Glossodia Local Water Centre for domestic non-potable uses such as toilet flushing, washing machines, garden irrigation and car washing. Recycled water may be used in public parkland for irrigation of lawns and gardens provided there is no direct impact to **biobank sites and biodiversity areas-values**

### 3.1.2 Streetscape character

- O.2 Streetscapes are designed **to complement the bushland character of the site and retain existing local native trees and other native species** to reflect a green 'leafy' feel
- O.3 Ensure adequate opportunity for **existing native trees to be retained and local native provenance species to be planted** within front setbacks and between houses on R5 zoned lots to create a more open and greener character

### 3.1.3 Street tree planting, lighting and furniture

- O.3 To provide cool, green leafy streets **and uses a diversity local provenance species to enhance local native trees**

EES previously recommended in its submission on the adequacy review to mitigate the urban heat island effect that street tree planting is also undertaken along the streets which run east-west. The ELA response of 15 May 2020 to the EES adequacy review advised additional planting along the east-west running streets can be accommodated. While the PPR (Figure 25 - proposed open space, green streets and multipurpose pathway network) has not been amended to reflect this Control C.1 indicates street trees are required for all streets which EES supports.

Control C.1 also states street planting is to use the preferred species listed in Table 8 (page 37) and to include endemic species. EES recommends Table 8 is amended to identify which species are local native CPW and RFEF species, non-local native and exotic species. The species listed in Table 8 include exotic species and non-native species. EES recommends Table 8 is amended to use local native trees species from the CPW and RFEF to complement the bushland character of the site.

### 3.1.3 Street tree planting, lighting and furniture

- O.3 To provide cool, green leafy streets **which protect and enhance remnant local native tree species and uses local native provenance tree species to complement the bushland character of the site**

### 3.2.10 Landscaping

Control C.5 states the plant selection for Jacaranda is to consider:

- the plant selection list identified in Appendix A where practicable (page 53) and
- the “use of locally indigenous species and exotic species where available and suitable to the character and amenity of the site” (page 53).

EES recommends:

- the plant selection for Jacaranda uses a diversity of local native provenance species from the CPW and RFEF rather than use non-local native and exotic species and Appendix A is amended accordingly
- Appendix A demonstrates that the plant species are from CPW and RFEF communities.

### 3.2.11 Residential Landscape Plan

- O.2 **Landscape species are to consist of a diversity of local provenance native species**

- C.1 A landscape Plan is to be submitted with A DA for a dwelling house **and is to demonstrate the plant species consist of local native species**

### 4.1.1 Appendix A – Indicative Landscape Planting Palette

EES recommends Appendix A is amended to use local native CPW and RFEF species, rather than non-local native and exotic species (pages 61 – 63). The Appendix should demonstrate that the riparian species comprise local native provenance species.

### 4.1.1 Shrub and Understorey Planting Palette

EES recommends the shrub and understorey plant matrix uses a diversity of local native provenance species (pages 64-65)

### 4.1.2 Climbers Planting Palette

EES recommends Section 4.1.2 uses species that are local native CPW and RFEF species and it demonstrates that the species proposed to be planted in the riparian corridor are local native species

### 4.1.3 Grasses Planting Palette

EES recommends Section 4.1.3 uses species that are local native CPW and RFEF species and it demonstrates that the species proposed to be planted in the riparian corridor are local native species.

### 4.1.4 Ground Covers Planting Palette

EES recommends Section 4.1.4 uses species that are local native CPW and RFEF species and it demonstrates that the species proposed to be planted in the riparian corridor are local native species.

### 4.1.5 Wetland Planting Palette

Section 4.1.5 refers to species to stabilise ‘constructed wetlands’. Figure 4.1 in Appendix N of the PPR shows the indicative location of a proposed constructed wetland in the Lake Park. The DCP should include a plan which shows the proposed locations of all constructed wetlands on the site. EES recommends the planting palette in Section 4.1.5 of the DCP demonstrates that the species proposed to be planted in the constructed wetland(s) are local native species.

### Lake Park – Key Design drivers

The photos show a stone wall edge around the lake. EES recommends a natural foreshore is provided around the lake edge rather than a stone wall to mimic a more natural system.

### Streetscape – Entrance and Collector Road

The tree species listed for the entrance and collector road consist of exotic species. It is unclear why local native species are not proposed to be used. EES recommends the plant lists consists of local native species to complement the bushland character of the site, particularly as the collector road is located between the north-west biobank site and the western biobank site.

End of Submission