PART B – AEIS

10. TERRESTRIAL FLORA **10-1**

10.1. Description of environmental values 10-1

10.2. Potential impacts and mitigation measures 10-1

10. TERRESTRIAL FLORA

Changes to the predicted impacts to flora as a result of refinement of the pipeline alignment are described in **Part C**.

10.1. Description of environmental values

Some submissions suggested the area impacted by the water storage should be surveyed again because of potential changes to vegetation resulting from recent floods. The riparian zone is a dynamic part of the landscape and vegetation in this area tolerates impacts from floods. Consequently, further survey is unlikely to lead to significant change in the assessment.

However it is possible that the extent of vegetation within the impact areas may have changed since the surveys as a result of approved clearing or enhanced re-growth. Should the Project be approved, all areas requiring vegetation clearing will be ground-truthed prior to lodging the relevant applications.

A submitter questioned the origin of a reference to *Picris aborarem* on Figure 10-10 of the EIS. This is a spelling mistake. The correct spelling is *Picris barbarorum* and was used in Table 10-12 and Table 10-15 of the EIS.

A submitter questioned why vegetation in some sections of the pipeline had not been ground-truthed via field surveys. The principal reason was due to a lack of landholder approval to access the location. In such cases the existing Herbarium mapping for the area was used and its likely accuracy was assessed using ground observations of similar vegetation types nearby along with available aerial photography and satellite imagery. Should the Project be approved all areas will be ground-truthed prior to lodging applications for clearing of vegetation.

10.1.1. Amendments to Herbarium vegetation mapping

A submitter requested SunWater describe how it will resolve anomalies in vegetation mapping prior to lodgement of development applications. As stated in Section 10.4.1 of the EIS, “The clearing application will be based on DERM’s RE mapping with certified amendments. It is likely that a map amendment request will be made to reflect mapping prepared as a result of vegetation surveys completed for this EIS”. SunWater intends to apply for a Property Map of Assessable Vegetation prior to submission of any approvals related to vegetation, noting that works which are the subject of a Community Infrastructure Designation are exempt development.

10.2. Potential impacts and mitigation measures

10.2.1. State Significant Biodiversity Values

A submission noted that stock routes and road reserves in the Chinchilla to Dalby section of the pipeline route had biodiversity values and questioned SunWater’s intentions with respect to avoiding impact or offsetting any impacted values. SunWater can confirm that such issues were taken into account in the planning that supported the original location of the pipeline. The refined pipeline alignment in this region is now in private property parallel to the Warrego Highway road reserve and part of the reason for this change is to reduce impacts on the road reserve, on any associated stock routes or on their biodiversity values. The refined pipeline avoids impact on Essential Habitat. The refined pipeline, for its entire length also avoids impact on *Rutidosis lanata* both north and

south of Chinchilla. Termination of the pipeline north of Warra avoids impacts on the native grasslands community (RE 11.3.21) and the threatened species *Picris barbarorum* and *Thesium australie*. The likelihood of several other threatened species occurring is now also assessed as less. Continued detailed design of the pipeline in this area will aim to avoid or minimise impacts. While a water supply pipeline is exempt development under all relevant planning schemes (Section 7.1 of the AEIS) and SunWater will seek a Community Infrastructure Designation for the project (Section 1.5.2.5 of the AEIS), the designating Minister and Coordinator-General have discretion with respect to seeking offsets should any significant residual impacts remain.

10.2.2. Success of translocation and propagation

A submission requested more detail on the approach to translocate or propagate those threatened species that would be impacted by the Project. As described in Section 10.2 of the EIS, a qualified botanist will undertake pre-construction surveys of known and potential habitat to assess the size/condition/structure of known populations or confirm the presence of likely species. These will occur sufficiently in advance of construction so that potential management measures can feasibly be implemented.

For known populations and/or any confirmed populations, management measures will be implemented as follows:

1) review the design to see if the extent of impact can be reduced (for example by changing the location of an aspect of the dam infrastructure);
2) determine if the age and condition of individuals present will allow successful translocation;
3) determine if seed collection and nursery propagation is feasible;
4) if 2 and/or 3 are possible, design rehabilitation plans to incorporate the species; and
5) if 2 and/or 3 are not possible, incorporate suitable habitats for the species within the offset package.

Translocation of seedlings or propagation using cuttings or seeds collected from the impacted plants will be implemented for any unavoidable clearing of NC Act and EPBC Act listed plants. As a minimum, a translocation and/or propagation plan will be provided for *Cryptandra ciliata*, *Livistonia nitida*, *Rutidosis crispata and Acacia tenuinervis* as these are the listed plants which will definitely be impacted by the Project. Small seedlings of each of these species will be collected from the area of impact and be translocated to the translocation site. The use of cuttings to propagate plants will be a secondary option, to be used if the translocation of seedlings is not successful.

A translocation and propagation plan for these species will be prepared to describe the methods of timing for the collection of seedlings, cuttings and seeds, selection of translocation sites, translocation and propagation, and maintenance requirements. The translocation and propagation plan will be prepared with reference to the Guidelines for the Translocation of Threatened Plants in Australia by Vallee, *et al.* (2004).

As a principle, the translocation and propagation plan will place a priority on the collection of seedlings and their re-establishment at translocation sites. As a means of reducing the risk of the translocation of seedlings failing, seeds and cuttings will also be collected and propagated. The use of seedlings will allow for the re-establishment of impacted threatened species early in the Project and subsequently, potentially avoid the lengthy propagation timeframes.

Where possible, seedlings of the species to be translocated will be collected after a period of rain, so they can be removed from the ground with minimal damage to the seedlings. Once removed from the ground, the seedlings will be moved to pots to allow roots to re-establish and grow before replanting at the suitable translocation site.

The details of the translocation and/or propagation plans will be developed when the footprint of impact is confirmed following detailed design. This will include identification of suitable relocation sites and development of protocols. Those threatened plants known from the water storage area are generally also found marginal to it so establishment in the proposed northern wildlife corridor is likely to be targeted.

It is acknowledged that there may be a requirement to provide an offset for endangered or vulnerable listed plants, should avoidance, translocation or rehabilitation not fully mitigate the impact. This would involve protecting existing known habitat which is currently at risk of being cleared and would be included in the final Environmental Offset Strategy for the Project.

10.2.3. Success of revegetation and reinstating of the riparian corridor

In recognition of the impact on the wildlife corridor represented by the riparian zone of the Dawson River, SunWater committed to a mitigation strategy of establishing a corridor of vegetation on the northern side of the water storage area (Section 10.2.1.1 of the EIS) through protection of patches of existing vegetation, protection of regenerating bushland and planting where necessary to fill gaps. SunWater recognises that in this position in the landscape it is not possible to replicate the riparian zone of the Dawson River in terms of vegetation community composition and as such the intention is to provide a vegetated corridor to facilitate faunal dispersion. The flora species and community composition will be chosen to reflect the existing composition of the remnants of vegetation and be most likely to survive in the location. SunWater also recognises that the vegetation will take time to establish and be able to perform its intended function as a movement corridor so will commit to implement this process within the earliest phases of Project commencement (following approval and land purchase).

This wildlife corridor is in addition to the intention to use the buffer zone of the water storage partly for environmental purposes. SunWater aims to allow much of the buffer to naturally regenerate and provide habitat immediately adjacent to the water storage, though acknowledging the need for landholders to have appropriate use rights for the area.

SunWater recognises the likely cost of implementation of such a combined strategy but is committed to doing so in order to provide sufficient mitigation and offset for the recognised impacts.

10.2.4. Environmental offset strategy

A number of submissions questioned the availability in the landscape of the required amount of applicable offsets. SunWater utilised the services of offset brokers to undertake this assessment and they have confirmed that appropriate offsets are likely to be available. That information has been provided to the Coordinator General in confidence because of the impact such information may have on negotiations with landholders on whose properties the potential offset may be based. There is an issue regarding the tenure of watercourse related vegetation because such areas constitute unallocated state land, hence SunWater cannot obtain tenure over the areas. SunWater and the Queensland Government are discussing means by which the outcomes related to the use of offsets can be achieved despite tenure over the riparian zone not being held by SunWater.

A number of submissions suggested that a fully developed offset strategy should be approved, and some suggested implemented, prior to Project approval. Section 10.4 of the EIS described SunWater's commitment to provide offsets for significant residual environmental impacts which could not be mitigated and noted that this could not occur prior to finalisation of detailed design or approval of the overall project. The reasons included that completion of an offset requires the exact extent of impact to be known before parcels of land which potentially provide such an offset are identified. Agreement is then reached with the landowner to investigate the areas and confirm their conformance to policy requirements. A legally binding mechanism to secure the land on the property can then be negotiated along with management plans to ensure the area eventually developed into a remnant ecosystem.

Use of a Community Infrastructure Designation as the approval process for the project means it would not be assessable development with respect to the clearing of native vegetation. However the designating Minister and Coordinator-General have discretion with respect to seeking offsets should any significant residual impacts remain. EPBC related requirements for offsets and any related to other assessable components of the development remain.

SunWater is fully aware of the requirements of the Australian and Queensland government offset policies and has developed a draft offset strategy for consideration by the Coordinator-General (**Appendix B1-B**) and DoE.

Offsets related to the GAB spring community are addressed in **Chapter 28** and **Appendix B1-B**.

This page has been intentionally left blank