

## **PART B – AEIS**

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## 27. CUMULATIVE IMPACTS

### 27.1. Suitability of the cumulative impact assessment criteria

A number of submissions raised concern with respect to the scope and suitability of the cumulative impact assessment (CIA) criteria and its potential non-conformance to the ToR. As discussed in Section 27.1.2 and 27.2 of the EIS, no clear defined process for assessing cumulative impacts existed in Australia prior to the release of *Cumulative Impacts: A Good Practice Guide for the Australian Coal Mining Industry* (Franks *et al.* 2010). As the guide was established specifically for the coal mining industry, on the basis of practical application and international best practice guidelines, it was determined that a methodology utilising a combination of leading approaches applied in the USA, UK and Australia would be best suited for this Project.

Requirements of a CIA under the ToR are identification of the level of potential impact and provision of mitigation for the inter-project cumulative impacts (e.g. one sensitive receiver impacted by noise, dust and traffic), and of projects acting in combination within the region (e.g. other water resource projects). These criteria were addressed in detail in Section 27.3 of the EIS.

A submitter requested that the Project consider cumulative impacts associated with environmental flows entering the Great Barrier Reef Marine Park. The reader is directed to Section 28.5 of the EIS in which environmental flows are discussed in the context of MNES.

A submitter suggested cumulative impacts to aquatic fauna associated with water resource development in the catchment had not been adequately considered. The assessment was presented in Section 13.3 of the EIS (Aquatic Fauna). As noted in Section 27.1 of the EIS, each of the EIS chapters undertook such a CIA and the results were then taken into account when developing the cumulative impact matrices presented in Section 27 of the EIS.

### 27.2. Impacts on agricultural land

A submission suggested that the cumulative impact of other projects and activities on agricultural land uses and productivity of grazing businesses had not been appropriately considered. Table 27-7 concluded “No mitigation proposed as the proportion of agricultural land affected by the Project is not considered significant. Whilst recognised there is a cumulative impact, the loss of GQAL from the Project is offset by increased regional water security and economic benefits stemming from the Project.” The area of grazing land inundated by the water storage or impacted by the pipeline constitutes 0.45% of the total grazing land in Banana Shire Council or comparatively 0.22% of the total grazing land in Banana Shire and Western Downs Regional council areas (using Queensland Spatial information, DP current land use, accessed June 2016).

**Section 7.2.2** and **Section 7.2.5** of Part B of the AEIS further discuss the impact of the pipeline and dam on agricultural land uses in this context.

### 27.3. Impacts of other water infrastructure projects

A submitter stated that greater attention is needed in the EIS to the combined impacts of the various SunWater water development projects in the local area including Glebe Weir raising and the pipeline to Xstrata's Wandoan Coal Project and pipelines as part of the Surat Dawson Integrated Water Project (now represented by the

Woleebee Creek to Glebe Weir pipeline project (W2G)). The relationships between the projects have been fully addressed in **Sections 1.3.2, 1.4.2 and 1.4.3** of Part B of the AEIS.

There is limited cumulative impact associated with the above projects because they are unlikely to all proceed, however, should they proceed, they will occur sequentially but well separated in time. For example, the availability of CSG water via W2G significantly reduces the likelihood of the proposed Glebe Weir raising being required. Further, they have substantial overlapping components so despite the projects representing three water supply options (CSG water, a surface water supply solely for Wandoan Coal JV and Nathan Dam) they all share the majority of the same pipeline between Glebe Weir or Nathan Dam and Wandoan. Should Nathan Dam proceed, it will entirely inundate Glebe Weir, so impacts associated with the increased inundation caused by the raising of the weir, should it occur, will be superseded by inundation resulting from construction of Nathan Dam. The cumulative impact relates to the incremental or staged loss of agricultural land for those landholders concerned but as the projects have essentially been in the public domain over the same period, these landholders have been well informed of both projects so are aware of the ultimate impact.

### **27.3.1. Waterway barriers**

A submitter requested that SunWater provide the locations and detailed design of fauna passages for water infrastructure currently proposed for the basin as this may affect costs and therefore viability.

The locations of new waterway barriers will be at the sites of new water infrastructure (if approved), being Nathan Dam, Connors River Dam and Lower Fitzroy Weirs. The detailed design of aquatic fauna transfer devices is site specific, undertaken during the detailed design phase and in general accordance with the process overseen by Fisheries Queensland. SunWater has made adequate allowance for the detailed design process, the cost of constructing them and the requirements of long term monitoring and maintenance.

Once constructed, Connors River Dam will isolate approximately 1% of the Fitzroy catchment because it is a headwater storage so contributes little to the cumulative impact of barriers. It is also within a different major sub-catchment of the Fitzroy (the Mackenzie River) than the Dawson River.

Nathan Dam is the most upstream storage on the Dawson River and will replace Glebe Weir, a structure that has no provision for aquatic fauna transfer. It is also upstream of five existing weirs on the Dawson River of which the two most downstream are currently fitted with fauna transfer devices; Neville Hewitt Weir has a fishlock and Moura Weir has a vertical slot fishway. Gylanda, Theodore and Neville Hewitt weirs also incorporate anabranch weirs. The weirs have been in place for between approximately 25 and 80 years and the EIS reported (Section 13.1.3.3) that they have restricted the distribution of migratory fish species in the upper catchment, though this may be more a result of barriers further downstream on the Fitzroy River (the barrage and Eden Bann weir). SunWater does not own or operate the Fitzroy Barrage. The effect of reduced medium to high flows downstream of Nathan Dam on the drown-out characteristics of existing weirs was discussed in Section 13.4 of the EIS and is revisited in **Section 13.4**. The provision of an effective transfer system at Nathan Dam is important, is committed to by SunWater and appropriate funding has been allocated to it.

The Lower Fitzroy Weirs project, should it be approved and proceed, represents more significant barriers in terms of their location in the catchment, being in the Lower catchment and on the main Fitzroy River itself. However they are weirs as opposed to dams so will drown out during floods and passage over or around them at

this time will be available to some species. SunWater recognises the importance of providing passage at these locations and has budgeted appropriately for it. If and when these projects develop, the process nominated by Fisheries Queensland for design of transfer devices will be followed.

A possible cumulative impact associated with a potential future project (Lower Fitzroy weirs) should not hinder the approval of a current project, being the Nathan Dam and Pipelines Project.

#### **27.4. Cumulative impacts associated with new mining developments**

A submission raised concerns with respect to coal mines and CSG related salt storages above the water storage area and their potential to encroach, if allowed, onto flood plains and present potential contamination problems for the Project.

SunWater has no control over developments upstream of the water storage area and beyond property it owns or holds easement over. Decisions regarding the potential development of coal mines, coal seam gas operations or the discharge of treated or untreated wastewaters to the river are the responsibility of local government or State Government. Any proposal to discharge water to the river would be required to comply with relevant law and policy, including Schedule 1 of the EPP (Water) regarding water quality objectives for the Upper Dawson River.

Other submissions requested a CIA be completed for the proposed Taroom and Collingwood, Cockatoo Coal projects, particularly as related to transport and traffic.

Submission of Initial Advice Statements for both the Collingwood and Taroom projects occurred after the finalisation of content for the Nathan Dam and Pipelines EIS and therefore were not included as part the CIA (Chapter 27 of the EIS). The significant project declaration for both projects was cancelled by the Coordinator-General in June 2015.

As described in Section 27.4 of the EIS, should other significant projects commence construction concurrent to the Project's construction phase, the surrounding State and local roads could experience a considerable increase in additional traffic demand. These additional demands will be managed through a Road Use Management Plan (RUMP) and associated Traffic Management Plans (TMPs) developed in consultation with Queensland Department of Transport and Main Roads, local Police and Councils. SunWater will also liaise with other parties currently or planning to add significant volumes of traffic onto the surrounding road network.

The mitigation and enhancement measures detailed in Table 27-2 of the EIS are considered directly applicable and would be expanded to include the above projects, should they proceed at timeframes parallel to this Project.

#### **27.5. Flow regime change**

Predictions of the changes to the flow regime as a result of this Project have been updated to incorporate the requirements of the new Water Resource Plan for the catchment (**Chapter 14** of the AEIS). The assessment of cumulative changes to the flow regime resulting from all of SunWater's projects (Nathan Dam and Pipelines, Connors River Dam and Pipelines, Lower Fitzroy Weirs) has also been updated and can be found in **Chapter 14**.

The obligations on holders of Resource Operations Licences (as SunWater will be for Nathan Dam) with respect to monitoring and reporting is detailed in Chapter 20 or the Resource Operations Plan for the basin. In

determining the viability of the Project, SunWater has taken into account all obligations and requirements conferred on it as a ROL holder and water supply scheme operator, including monitoring requirements.



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