Submission on the Proponent Initiated Environmental Impact Statement Referral (PIER)

Department of Logistics and Infrastructure (DLI) - Adelaide River Off-stream Water Storage (AROWS)

This submission is made under regulation 53 of the Environment Protection Regulations 2020

Government authority: Aboriginal Areas Protection Authority (AAPA)

Summary: The proponent has described potential impacts from construction, and from extracting surface water from the Adelaide River in a series of model scenarios and intends to create more refined models in an EIS. The areas of impact across the Adelaide River and floodplain may affect Aboriginal sacred sites. It is not clear whether the modelling of floodplain inundation considers a worst-case scenario when the tide is low.

Section of Referral	Theme or issue	Comment
Executive Summary Pg v Main report Figure 2.5-1 to 2.5-3 Pg 28-30 Table 2-4 Pg 32-33	Works not part of Authority Certificate	• The proponent's Authority Certificate (C2024-007) does not apply in relation to the five infrastructure components described. The certificate relates to investigative works only. • The proponent has applied for an additional Authority Certificate for further investigative works, which is yet to be issued.
Main report 2.4.4 to 2.4.8 Pg 36-39	Works not part of Authority Certificate	• The proponent's Authority Certificate (C2024-007) considers the pre-construction components described in 2.4.4. The construction (2.4.5), commissioning (2.4.6), operation (2.4.7), and decommissioning (2.4.8) works are not covered by the certificate. • The proponent acknowledges this in Table 4-2 (pg 67).
Main report 2.4.9.2 Pg 39	Groundwater extraction during construction	• The report states that *'Construction water requirements are likely to be sourced from the site groundwater systems'*. • An Authority Certificate considering construction activities should include groundwater extraction in the works description, and the estimated area of drawdown will be included in consultations with custodians.

Main report 5.2.1.2 Pg 79-80	Presence of acid forming soil and rock	• The report states that there is a high probability of acid forming soil and rock in construction areas. • There are numerous Aboriginal sacred sites associated with the waters of the Adelaide River downstream. Acidic waters arising from ground disturbance works and entering the Adelaide River have the potential to damage Aboriginal sacred sites. • An Authority Certificate including construction and operational activities shall incorporate the downstream Adelaide River in consultations with custodians.
Main report 5.2.2.1 Pg 82	Erosion and sedimentation of Adelaide River	• The report states that operation of AROWS could affect the morphology of Adelaide River. • Changes to erosion and deposition patterns along the river and associated floodplain may damage Aboriginal sacred sites. • An Authority Certificate shall include potential downstream erosion and sedimentation impacts in consultations with custodians.
Main report 5.4.2.3 Pg 133	Flood levels in Adelaide River	• The report states that the maximum predicted reduction in flood level in Adelaide River is 53 cm under all modelled scenarios, with the largest reduction in flood level on the west bank. The change in flood level is predicted to dissipate at a distance of 20 km downstream of the off-take site. • There are numerous Aboriginal sacred sites associated with the waters of the Adelaide River downstream. Reduction in flood depth along the river and associated floodplain has the potential to damage Aboriginal sacred sites. There are sacred sites on the west bank floodplain. • An Authority Certificate considering operational activities shall incorporate the affected Adelaide River floodplain in the consultations with custodians.
Main report 5.4.2.3 Pg 133 Appendix D 5.7.1 Pg 41	Model scenario tide level	• The report states that the highest astronomical tide (HAT) and Mean High Water Neap (MHWN) tidal values have been applied within the hydraulic model. • As these relate to high tides it is not clear that the modelling considers a worst case for reductions in inundated floodplain area, which would be expected when the tide is low.
Main report 5.4.2.5 Pg 135-6	Water table mounding around the AROWS basin	• The report states that groundwater levels are anticipated to rise due to filling the AROWS basin during operation, and '*potentially lead to increased groundwater discharge at new and/or existing locations and altering habitats for GDEs and non-GDEs downstream of the AROWS basin.*' • There are Aboriginal sacred sites comprising billabongs that are anticipated to be groundwater fed in the vicinity of the AROWS basin. Increased groundwater levels may support the integrity of such water features however flooding has the potential to damage Aboriginal sacred sites.

		• An Authority Certificate considering operational activities shall include the area affected by higher groundwater levels in the consultations with custodians.
Main report 5.4.4 Pg 139-140	Next steps for hydrological processes assessment	• The report describes additional activities including data collection and more refined modelling of impacts to the groundwater and surface water systems. • The next steps should assess the impacts at Aboriginal sacred sites within the predicted impact areas in these models.
Main report 5.9.2.2 Pg 190 Main report 5.9.4 Pg 192	Identification of intangible Aboriginal cultural values	• The report acknowledges that '*intangible heritage values (not yet identified) may exist in the areas of direct impact and area of influence*', and states that a cultural values impact assessment (CVIA) study will assess the potential impact. • The information required for demonstrating avoidance / minimisation of impacts on Aboriginal sacred sites is: 1) evidence of obtaining an Authority Certificate that covers the proposed works and use of land, and area of potential impacts, in accordance with the Northern Territory Aboriginal Sacred Sites Act 1989; and 2) a commitment to comply with the conditions of the Authority Certificate. • Obtaining and adhering to an Authority Certificate is the appropriate mechanism to avoid and mitigate impacts to sacred sites. • The proponent recognises that the CVIA '*relies on engagement with Traditional Owners and Custodians, and AAPA to inform the assessment of heritage values, in particular the intangible values, that may be potentially impacted by the Project.*'
Appendix D 5.2 Pg 38 Table 5.2 Pg 44	Model extent Reduction in inundated area	• The report states that the model does not include the full extent of the floodplain downstream, and therefore the predicted reduction in inundated area may be an under-estimate. • The table shows that under the low tailwater model scenarios the reduction in inundated area is 17-29%, being more than 100 Ha. Across all scenarios the smallest predicted reduction in inundated area is 24.7 Ha. It is not clear whether this is a worst-case if the modelling did not consider a low tide scenario. • An Authority Certificate shall include the inundated floodplain area in the consultations with custodians to assess the impacts at Aboriginal sacred sites.
Appendix D 5.7.2 Pg 46		• This section states that impacts have been assessed at certain floodplain storages. It is not clear why these areas have been chosen.

		• A reduction in inundated area of up to 50% is predicted in this area. Much of the area is not within an Authority Certificate so the presence of Aboriginal sacred sites is not known. • An Authority Certificate shall incorporate the inundated floodplain area in the consultations with custodians, and any identified water-dependent sacred sites should be added to the locations where impacts are assessed.
Draft terms of reference (TOR) Table 3.5	Scenarios to be modelled	• The TOR does not explicitly state that modelling scenarios will include the worst case for the reduction in area of inundation of the floodplain, stating *'Changes to surface water flows under proposed water extraction scenarios'*. • Model runs should include the worst case for inundation of the floodplain and provide justification for the scenario design.
Draft terms of reference Table 3.5 Table 3.10	Hydrological processes affecting cultural sites Culture and heritage assessment	• The TOR states that the proponent will *'Identify land uses and environmental values that could be directly or indirectly affected by impacts to hydrological processes caused by implementing the proposal. This must include…. Culturally significant sites'*. • The TOR states that the proponent will *'Describe the characteristics and current condition of sacred sites, cultural and heritage values (both tangible and intangible) in the proposal footprint (area(s) of direct disturbance) and area of influence (indirect disturbance) that could be impacted…'* • For the EIS to meet the requirements of the culture and heritage factor and hydrological processes factor, the proponent will need to assess the impact to Aboriginal sacred sites for all potentially affected areas, including the downstream Adelaide River and floodplain.