The **Coordinator-General**

Connors River Dam and Pipelines Project

January 2012

REPORT SUMMARY

The Coordinator-General has released his evaluation report of the Connors River Dam and Pipelines Project. The report recommends that the project proceed, subject to conditions and recommendations.

This document summarises the main issues covered in the Coordinator-General's evaluation report. For a full copy of the report, visit **http://projects.industry.qld.gov.au**

What happens now?

This report will be provided to Sunwater Ltd (Sunwater, the proponent), the Isaac Regional Council and the Australian Government Department of Sustainability, Environment, Water, Population and Communities.

Sunwater will be required to obtain a number of state and local government approvals, including environmentally relevant activities, an interim resource operations licence, operational works approvals for clearing native vegetation and waterway barriers, and the construction of a referable dam.

Introduction

Sunwater proposes to construct a dam and associated water distribution infrastructure on the Connors River near Mount Bridget, approximately 110 kilometres (km) due east of Moranbah and 70 km south of Sarina. The dam would have a full supply level (FSL) capacity of 373 662 megalitres (ML) and would inundate an area of approximately 5850 hectares (ha).

Water from the dam would be transported via pipeline to Moranbah and would service coal mines (and associated communities) in the northern Bowen Basin and surrounds. The pipeline component of the project includes a trunk pipeline only and does not include potential future connecting lateral pipes. Water would also be released downstream for purchase and use by irrigators.

The capital cost of the project is estimated to be $1.17 billion —$587 million for the dam and $584 million for the pipeline. Subject to approvals, Sunwater anticipates construction will occur between April 2012 and mid 2014, with first filling expected to occur during the 2014/2015 wet season. Filling is scheduled to take one year, with the project anticipated to be operational by March 2015.

Queensland Government

The project is anticipated to create up to 620 direct jobs during the construction period and up to 8 direct jobs during operation. Construction of the project is estimated to contribute over $700 million in indirect and direct benefits to Gross State Product (GSP), while operations is estimated to contribute an additional $9.5 million in direct and indirect benefits to GSP.

Coordinator-General's conclusion

The project is a key component of the Queensland Government's strategy of increasing the availability and security of water supply in Central Queensland, in particular the Bowen Basin. The project will support planned mining activity in the northern Bowen Basin and the associated social and economic benefits likely to be associated with that activity.

The Coordinator-General considers the potential impacts in the EIS and SEIS to be acceptable having regard to the significance of the project in terms of ensuring security of water supply for recent and planned mining development in the northern Bowen Basin and the mitigation and offset measures that will be provided by the project.

Accordingly, the Coordinator-General recommends the project, as described in the evaluation report, proceed, subject to Sunwater's draft environmental management plans (EMPs), revised offset strategy and the conditions and recommendations set out in the report.

Summary of environmental impacts

The key environmental impacts of the project considered in the report are described below.

Surface water

The Coordinator-General has considered potential impacts to surface water resources in the context of a catchment which has been degraded by agriculture and industry development, including:

- increased sediment yield to the rivers
- localised degradation of bank and bed stability and direct runoff from road surfaces resulting from existing road and infrastructure crossings
- localised minor physical disturbance of bed and banks from the construction of low level crossings and causeways.

The Coordinator-General is satisfied that geomorphic processes for the Connors River are likely to be maintained with the dam in place and that the residual impacts to geomorphic processes are minimal.

While sediment supply downstream may be reduced as a result of the dam, this is not considered significant and may be slightly beneficial because current rates of sediment delivery and transport are much higher than pre-development conditions. Although some localised erosion and sedimentation impacts may occur, these can be effectively managed through the implementation of appropriate mitigation measures by Sunwater.

The Coordinator-General is satisfied with the assessment of risks to surface water hydrology and the mitigation measures proposed to minimise those risks. No significant impacts relating to surface water hydrology are expected to remain after mitigation.

The Coordinator-General is satisfied flood risk during construction and operation of the project will be effectively managed through a combination of construction sequencing and timing, implementing flood management plans and Sunwater's flood-margin based land purchase strategy.

He notes the significant demand for future urban water supplies within the Isaac-Connors sub-catchment, driven primarily by population growth arising from new mining activity. In order to increase the security of urban water supplies, the Coordinator-General has recommended Sunwater make available water from the Connors River Dam to supply townships in the region.

Groundwater

To ensure potential impacts to groundwater levels and groundwater quality are addressed, the Coordinator-General has stated a condition requiring the inclusion of groundwater monitoring and management terms in both the construction and operational EMPs of the project.

Terrestrial ecology

The water storage area is situated within the valley formed by Sugarloaf Mountain to the north and the Connors Range to the east. A number of creeks and streams flow into the valley to form the Connors River. The floor of the valley has been substantially modified and thinned of vegetation to allow for cattle grazing. Riparian vegetation generally remains along the banks of the Connors River and its tributaries, and represents areas of high regional biodiversity. In particular, riparian vegetation on the banks of Murray, Cattle and Collaroy Creeks within the proposed water storage area provide a near continuous vegetated corridor with significant habitat connectivity value.

While no protected plant species were recorded during field surveys, construction of the project may result in impacts to some protected plant species based on the presence of suitable habitat. Where there is a requirement for clearing protected plant species, clearing must only occur in accordance with a clearing permit under the *Nature Conservation Act 1992* (NC Act). In the event Sunwater's proposed avoidance, translocation and/or rehabilitation strategy does not fully mitigate adverse impacts to protected plant species, the Coordinator-General has recommended a condition which requires the provision of offsets for the permanent loss of protected plants to achieve an equivalent, or better overall outcome at a regional scale.

The project has been designed to ensure clearing will be limited to the extent necessary for the project, such as through refinement of the pipeline route to avoid impacts to remnant vegetation and the use of existing cleared easements where possible. The Vegetation Clearance Management Plan proposed as part of the draft CEMP will also ensure vegetation clearing is limited, as far as practicable, during construction of the project.

Nonetheless, the project will result in significant unavoidable impacts to approximately 6370 ha of vegetation, including 2200 ha of native remnant vegetation.

Sunwater's revised offset proposal will preserve and enhance in perpetuity approximately 16 650 ha of offset areas that are currently available for agricultural (grazing) purposes. Accordingly, the management of the proposed offset areas will provide a greater area of secure habitat than that lost as a result of the project (approximately 10 280 ha). The Coordinator-General has set a condition which will require Sunwater to provide additional information on the offset proposal, including details of the legally binding mechanism to be used to secure and protect the offset areas in perpetuity.

Clearing and/or inundation of vegetation required for the construction of the project will also result in significant impacts to fauna habitat, which are discussed in the report.

Measures outlined in the terrestrial flora and fauna sub-plans of the draft EMP will help to mitigate potential impacts to fauna and their habitats. In accordance with the NC Act, approval from DERM must also be obtained where construction and/or operation of the project is likely to disturb the breeding places of protected fauna. However, impacts to fauna habitat are largely unavoidable given the scale and nature of the project.

Sunwater's offset proposal will provide approximately 16 650 ha of compensatory habitat, with the strategic establishment of offsets to reinstate dispersal pathways at the edge of the water storage area increasing habitat connectivity above Full Supply Level. Management of the offset areas will provide a greater area of secure habitat than that lost as a result of the project.

Further, the Coordinator-General notes the strategic conservation benefits that the offset proposal (in particular, the 13 000 ha Ridgeland property offset located to the north of the water storage area) will

provide for the region. The Ridgeland property comprises high quality habitat for a variety of protected fauna species, as well as the potential for natural regeneration in a number of areas. Given the location of Ridgeland between two existing protected areas (Tierawoomba State Forest on the northwest and Collaroy State Forest on the north-east), the protection, restoration and enhancement of vegetation and habitat on Ridgeland will improve habitat connectivity in the landscape and provide real conservation outcomes for a variety of fauna species by enhancing the health, diversity and productivity of the environment.

Furthermore, given the strategic conservation value of the property, QPWS advises Ridgeland is suitable for possible declaration as a National Park, subject to interim tenure arrangements for that part of the property to be managed by Sunwater for offset purposes. In addition, Tierawoomba State Forest, which DERM considers to be an 'important strategic link for future national park acquisitions', has been transferred to 'Forest Reserve' which is a transitional tenure normally preceding transfer to national park. Accordingly, the Coordinator-General finds the Ridgeland offset has the potential to deliver priority additions to Queensland's protected area estate and thereby assist in addressing higher level policy objectives.

Based on the mitigation measures provided in the draft CEMP, Sunwater's revised offset proposal, and the requirements of the *Vegetation Management Act 1999* and the NC Act, the Coordinator-General is satisfied impacts to terrestrial ecology will be minimal. The Coordinator-General has set a condition to ensure the effective implementation of the CEMP for the project.

Aquatic ecology

The Coordinator-General notes the high conservation value of the study area with respect to freshwater turtles—in particular the cloacal ventilating Fitzroy River turtle ('vulnerable' listing, NC Act and *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) and white-throated snapping turtle (a high priority species for conservation and pending 'endangered' under the NC Act). No other threatened aquatic fauna species and no threatened aquatic flora species or communities were recorded from or are considered likely to occur in the project area.

Without mitigation, the proposed dam wall presents a complete barrier to upstream fauna movement and an almost complete barrier to downstream movement. The Coordinator-General notes this to be of particular importance for this project given aquatic fauna within the study area are not currently impacted by impoundments or flow regulation, with the nearest man-made barrier being Tartrus Weir on Mackenzie River approximately 100 km downstream of the proposed dam. This may result in a reduction of genetic variability of aquatic fauna and associated in-breeding issues. An aquatic fauna transfer device (or 'fishway') designed to maintain passage and minimise injury, mortality and entrapment of aquatic fauna has been included in the design of the dam wall. The Coordinator-General has set a condition which requires the detailed design of the fishway to be finalised following further consultation with relevant agencies and generally in accordance with the DEEDI (Fisheries Queensland) Fish Passage Design and Implementation Process set out in the report.

Although unlikely to provide the same efficiency of movement as would be the natural state, opportunity for fish movement will be maximised by ensuring the device operates from Minimum Operating Volume through to when the dam is spilling. The preliminary operational strategy of dam also overcompensates slightly in the low flow range, with these releases largely passing through the fishway. As a result, fish will be able to pass the dam when the drying river naturally provides barriers.

Sunwater commits to continued consultation with DERM as part of developing the detailed fishway design in order to maximise turtle passage opportunities and minimise the potential for physical damage. In the event of ineffective transfer, Sunwater commits to implementing 'catch and carry' techniques to ensure short term transfer and genetic mixing. Both of these commitments have been conditioned in the report.

The Coordinator-General acknowledges the range of measures identified in the EIS and the SEIS to mitigate potential impacts to the Fitzroy River turtle and recognises Sunwater's commitment to implement an ongoing research monitoring program to evaluate the effectiveness of mitigation as well as the provision of direct (land-based) and indirect (research-based) offsets. The Coordinator-General has imposed a condition to formalise, and in some cases expand upon, measures to mitigate direct and cumulative impacts to the Fitzroy River turtle. Given the pending 'endangered' conservation status of the white-throated snapping turtle and its similarity to the Fitzroy River turtle (i.e. cloacal ventilation), the Coordinator-General requires the mitigation/monitoring programs developed to address the impacts to the Fitzroy River turtle be expanded to address impacts to this species.

The Coordinator-General requires a comprehensive baseline study of Fitzroy River turtle and white-throated snapping turtle populations in each tributary upstream of the water storage area, within the water storage area, and downstream of the water storage area to the Funnel Creek confluence.

He notes changes to the downstream flow regime resulting from operation of the proposed dam will be limited to the confluence of the Connors River and Funnel Creek, approximately 46.1 km downstream of the proposed dam wall. However, the geographical extent of Sunwater's proposed annual species population surveys is limited downstream as far as Cardowan, approximately 16.8 km downstream of the proposed dam wall. Given monitoring results will need to be assessed with respect to (but not limited to) potential impacts associated with flow regime change, the Coordinator-General requires population surveys be extended further downstream, beyond Cardowan, to the Funnel Creek confluence. The Coordinator-General also requires that monitoring form part of a Species Management Program for the Fitzroy River turtle and white-throated snapping turtle, including a reporting and corrective action regime to address impacts to these species' populations, habitat and passage upstream and downstream of the proposed dam.

To address predicted cumulative impacts in the Fitzroy (River) Basin catchment, a condition has been imposed requiring Sunwater to prepare, in collaboration with DERM, SEWPaC and the Fitzroy (River) Basin Association, a catchment-wide Conservation Plan for the Fitzroy River turtle and the white-throated snapping turtle pursuant to section 112(2) of the NC Act.

The Conservation Plan must specify the research and management measures necessary to ensure the survival and natural development of the species' populations in the Fitzroy (River) Basin catchment, and will provide a planned and logical framework for key interest groups and responsible government agencies to coordinate their work to improve the condition of both species in the catchment. A coordinated approach to the research and management of the Fitzroy River turtle and the white-throated snapping turtle is considered to be of particular importance given the other water infrastructure projects proposed in the Fitzroy catchment currently undergoing assessment (Nathan Dam and Pipelines and Lower Fitzroy Weirs projects).

In response to DERM and SEWPaC comments regarding the adequacy of Sunwater's proposed financial commitment to address cumulative impacts, and based on advice from DERM regarding the level of funding required to allow for continuity of staffing for this conservation work, the Coordinator-General requires Sunwater to increase the financial contribution for this project from $100,000 to $250,000 per year for five years into a fund administered by the DERM for the implementation of research and management measures identified in the adopted Conservation Plan.

Based on the mitigation measures provided in the draft CEMP, Sunwater's revised offset proposal, the requirements of the NC Act and Fisheries Act, and the Coordinator-General's additional requirements regarding the Fitzroy River turtle and white-throated snapping turtle, the Coordinator-General is satisfied impacts to aquatic ecology will be minimal.

Social and economic environment

The project will generate a number of short-term social and economic benefits, including direct and indirect employment opportunities and increased industry output through the demand for goods and services. It will also generate long-term social and economic benefits through the additional water security which would support regional economic development and activity in the mining industry, particularly around Moranbah, agriculture and urban communities.

There will also be social and economic costs borne by the local and regional economy as a result of the project. These social and economic costs include foregone agricultural production due to inundation of, and severance of access to, land previously used for cattle grazing purposes, disruption to farming operations on the pipeline route during construction, changes to recreational uses, property access and traffic conditions, and dislocation of workers from their families.

Sunwater has made commitments to mitigate potential social and economic impacts and maximise social and economic opportunities of the project, which have been included in the Social and Economic sub-plan of the draft CEMP. This includes compliance with the Queensland Government's Local Industry Policy and Indigenous Employment Policy.

To ensure effective communication and complaints resolution with community members directly affected by the construction of the project, the Coordinator-General has set a condition requiring the preparation and implementation of a Community and Stakeholder Management Plan as part of the CEMP for the project.

He has also made a general recommendation regarding the provision of dam recreation facilities for the community. In particular, he recommends that Sunwater construct, at its cost and to the satisfaction of Isaac Regional Council (IRC), dam community recreation facilities. The nature and extent of the dam community recreation facilities must be informed by a Facilities Options Study, which will be carried out by Sunwater at its cost in consultation with IRC.

Cultural heritage

Indigenous cultural heritage

The EIS and SEIS indicated there is a registered native title claim registered on 9 October 2009 in the name of the Barada Barna People which captures the entire project area.

SunWater advise the Cultural Heritage Management Plan (CHMP) over the entire dam and pipeline route project area was agreed with the Barada Barna People and registered with DERM on 19 August 2010. The Indigenous land use agreement (ILUA) for the project has been lodged with the National Native Title Tribunal for registration.

No Aboriginal cultural heritage places are recorded in the Queensland Aboriginal and Torres Strait Islander Cultural Heritage Register and database around the location of the proposed dam wall and water storage area.

The Coordinator-General is satisfied the registered CHMP and agreed ILUA satisfies the duty of care requirements under the *Aboriginal Cultural Heritage Act 2003* and will ensure adequate identification and management of cultural heritage places and objects between Sunwater and the relevant aboriginal people as custodians of their cultural heritage.

Based on the mitigation measures provided in the draft EMP and registered CHMP and the legislative requirements of the ACH and *Native Title Act 1993*, the Coordinator-General is satisfied impacts to Indigenous cultural heritage will be minimal.

Non-indigenous cultural heritage

No sites listed on any national, state or local government register will be impacted by construction of the project.

Two homesteads located on properties within the proposed water storage area (Collaroy and Marylands) are considered to be of local significance. Collaroy is considered to be the more important of the two historic homesteads. To

mitigate potential impacts Sunwater has committed to undertaking an archaeological surface study at Collaroy with any significant findings to be notified to DERM.

Based on the mitigation measures provided in the draft CEMP and the requirements of the *Queensland Heritage Act 1992*, the Coordinator-General is satisfied impacts to non-Indigenous cultural heritage will be minimal.

Transport and traffic

Traffic analysis in the EIS concluded the increase in traffic generated by the project at the peak construction period would not adversely affect the level of service or road surfaces.

Sunwater has committed to review and update its traffic analysis and accompanying Road Impact Assessment (RIA), Road Use Management Plan (RMP) and Traffic Management Plan (TMP) during detailed design, when additional and more certain trip generation and traffic volume information would be available. The requirement for a RIA, RMP and TMP and other traffic mitigation measures have been included in the Transport and Roads sub-plan of the draft CEMP.

Based on the mitigation measures provided in the draft EMP and the approvals required for the project under the Transport Infrastructure Act (State controlled roads) and IRC local planning scheme (local roads), the Coordinator-General is satisfied that impacts to traffic and transport will be minimal.

Environmental management

There are limited sensitive receivers around the dam and surrounds study area. Three homesteads are located outside the water storage area—Doreen, Marylands and Undercliff—which are located approximately 11 km south-west, 6 km east and 20 km north of the proposed dam wall site, respectively. However, in accordance with the land purchase and, where applicable, resale strategy, these homesteads will be vacated prior to the commencement of construction activities.

Sensitive receivers near the pipeline route consist of residences located at varying distances from the pipeline, with the closest receivers being between 100 m to 200 m from the pipeline.

The project will result in impacts to air quality, greenhouse gas (GHG) emissions, noise and vibration, waste and land contamination. Modelling presented in the EIS shows the project will not cause exceedences of DERM's air quality and noise and vibration goals at the nearest sensitive receivers.

To ensure the effective management of potential impacts, Sunwater has prepared a number of sub-plans as part of the draft EMPs for the project, including: air quality and greenhouse gas; noise and vibration; waste, hazard and risk; land contamination.

Based on the distance between construction activities and sensitive receivers, the mitigation measures contained within the draft EMP, and approvals required for project activities which create air, waste and noise and vibration emissions (environmentally relevant activities, such as resource extraction and concrete batching), the Coordinator-General is satisfied potential air quality, noise and vibration and waste impacts will be minimal.

The Coordinator-General is satisfied Sunwater has appropriately considered ways in which to reduce GHG emissions in the design of the project. Further, he is confident that mitigation measures contained in the air quality and GHG sub-plan of the construction EMP will maximise energy efficiency and minimise GHG emissions during construction.

He is also satisfied with commitments in the contaminated land sub-plan of the draft construction EMP to appropriately manage existing potentially contaminated materials, prevent spills from occurring at the project site, and contain, clean up and if necessary, remediate any spills that do occur.

Hazard and risk

Sunwater has made a number of commitments in the draft construction EMP (CEMP) and operational EMP (OEMP) to safely manage risks to the workforce and public and existing environmental values, including surrounding land uses associated with the project. The Coordinator-General has set a condition which requires the inclusion of additional requirements in the CEMP and OEMP. This includes a dedicated helicopter landing pad at the dam site to facilitate emergency evacuations and the development of response plans, roles and responsibilities in consultation with local emergency services, including fire, ambulance and police stations.

Based on the mitigation measures contained within the draft EMP, legislative requirements which establish minimum health and safety standards, and the Coordinator-General's conditions, the Coordinator-General is satisfied the construction and operation of the project will involve the appropriate management of hazards and risks.

Construction and operation EMPs

Sunwater has committed to the management of potential impacts of the project through the implementation of a CEMP and OEMP. Since the release of the EIS, Sunwater has updated its draft CEMP and OEMP to ensure all commitments and mitigation measures proposed in the EIS and SEIS have been included in the draft EMPs for the project.

The Coordinator-General is confident that, subject to the additional requirements set by the Coordinator-General for inclusion in the EMPs the draft EMPs will provide the mechanism to adequately manage and monitor the potential impacts of the project.

The Coordinator-General has set conditions to ensure the effective implementation of the CEMP and OEMP for the project, and the establishment of a monitoring, auditing and reporting regime to ensure compliance.

Matters of national environmental significance

This report provides a review of the extent to which material supplied by Sunwater as part of the EIS process addresses the actual or likely impacts of the project on each of the matters protected by controlling provisions under the EPBC Act.

The Coordinator-General is satisfied the EIS process conducted for the project adequately meets the requirements for impact assessment in accordance with the provisions of Part 4 of the SDPWO Act and Part 13 of the *State Development and Public Works Organisation Regulation 2010*, as specified in the bilateral agreement.

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