

2 PROJECT NEED AND ALTERNATIVES

2.1 INTRODUCTION

In response to community feedback and submissions on the EIS, a new route selection assessment for the northern portion of the proposed southern CSM water supply pipeline was undertaken. Volume 1, Chapter 6 Project Operations of the Supplementary EIS provides further details on refinements/modifications to the Project. The information presented builds on the EIS Volume 2, Chapter 2 Project Need and Alternatives, and should be read in conjunction with the EIS chapter.

2.2 PROPOSED PIPELINE NEED

The need for the proposed pipeline is as generally described in the EIS Volume 2, Chapter 2 Project Need and Alternatives, section 2.2. While there have been some changes to the mine schedule and a refinement in the understanding of CHPP unit water requirements, the total adopted peak operational demand for raw water imported into the MLA areas from external sources is essentially unchanged.

Operational raw water will be required for the CHPP process water, fire fighting services, site dust control, and light vehicle and heavy vehicle washdown. The major demand for operations raw water is the CHPP. The estimated unit raw water requirement for the CHPP has increased to 290 L/t ROM. This is the net make-up demand after allowing for the return of recycled decant water from the mine tailings system. Demand will grow rapidly over the first three years of operation, peaking at 10,560 ML/a in Year 4, of which 1,072ML/a is estimated for haul road dust suppression. Water captured in the site water management system will be used to satisfy on site demands. By Year 5 of the Project, there is a high probability that haul road dust suppression demands will be met from on-site sources. As noted in Chapter 6, Volume 2 of the Supplementary EIS, the design capacity of the pipeline is 11,400 ML/annum. For further discussion on the raw water supply demand for the Project, refer to Supplementary EIS Volume 1, Chapter 11 Water Supply and Management.

2.3 PROPOSED SUPPLY ALTERNATIVES

2.3.2 ALTERNATIVE RAW WATER SUPPLY SOURCES

The Western CSM Water Supply Pipeline as described in Volume 3 of the EIS, is no longer an option for the WJV. The two remaining raw water supply pipeline options are the Glebe Option (Volume 4 of the EIS and Supplementary EIS) and the Southern CSM Water Supply Pipeline.

2.4 WATER SUPPLY DELIVERY OPTIONS AND TECHNOLOGIES

2.5 ROUTE SELECTION OPTIONS

The proposed route for the Southern CSM Water Supply Pipeline was presented in the EIS Volume 2, Chapter 2 Needs and Alternatives, section 2.5, and depicted in Figure 1-1-V2.5.

Option 2 discussed in the EIS was identified as the preferred alignment, including a section in the northern portion of the alignment that traversed a number of private properties and local roads to the southern boundary of MLA 50230.

Following (further) public and landholder consultations after the public consultation period for the EIS, additional alternative alignments for the northern portion of the proposed water supply pipeline from north-east of Cherwondah State Forest, generally between Gilgul township in the south-east, to Peakes Road in the north-west, have been investigated as a component of the Supplementary EIS.

Three alternative alignments for the northern portion of the proposed pipeline are summarised below, with all options proposed to be located predominately within either local or state road reserves. Appendix 2-1-SV2.4 of this Supplementary EIS contains an addendum to the Route Selection Report provided in Volume 2 of the EIS to assess these alternative route portion options.

2.5.1 METHODOLOGY FOR PIPELINE ROUTE SELECTION

The methodology and assessment criteria for the alternative route options assessed for the northern portion of the proposed pipeline are generally the same as those set out in Volume 2, Chapter 2 of the EIS. Criteria for which there was a difference in level of impact between the route options, and therefore which were used in the analysis were:

- approximate area of threatened ecological communities to be cleared
- approximate area of mapped regional ecosystems to be cleared
- length of mining leases (ML) and mineral development license (MDL) traversed
- length of petroleum leases (PL) traversed
- number of waterways crossed
- approximate area of mapped regional ecosystems to be cleared
- conservation status of regional ecosystems to be cleared
- number of properties with frontage to proposed route options.

2.5.2 LAND TENURE

All pipeline route options for the alternative northern pipeline portion were proposed to be located predominately within the road reserve and to traverse areas predominantly consistent in land use and tenure. Therefore, with no differentiation in land use and tenure between the options, this assessment criterion was not considered to be a determining criterion.

2.5.3 ROUTE OPTIONS

Development of alternative pipeline route options for the northern portion of the alignment was based on a number of common requirements which included:

- minimal impact to surrounding landowners and minimal requirement for acquisition of privately owned land
- co-location of infrastructure to the greatest possible extent
- minimisation of overall route length to reduce the head loss and capital cost associated with the pipeline.

Based on the issues outlined above, three potential pipeline route alignments were identified, as shown in Figure 2-1-SV2.3 and described below.

Option A

Option A starts at the intersection of Baileys and Giligulgul Roads and proceeds in a north-westerly direction within the road reserve of Giligulgul Road. At the intersection of Giligulgul and Hansens Roads, the proposed alignment turns to the north-east, utilising the road reserve of Hansens Road until it intersects with Fosters Road. At this intersection, the proposed alignment reverts to the preferred alignment described as Option 2 in the EIS, which progresses north into the MLA areas along the Peakes Road road reserve.

Option B

Option B starts at the intersection of Baileys and Giligulgul Roads and proceeds in a north-easterly direction within the road reserve of Baileys Road. Where Baileys Road intersects with the Leichhardt Highway, the alignment turns into the western side of the Leichhardt Highway road reserve and progresses in a northerly direction. At the township of Guluguba, it is proposed that the alignment turn in a westerly direction and utilise the road reserve of Fosters Road. As above, at the intersection of Hansens and Fosters Roads, the alignment progresses in a northerly direction into the MLA areas along the Peakes Road road reserve.

Option C

This proposed pipeline route is common with Option B from the start point at the intersection of Baileys and Giligulgul Roads to the township of Guluguba. At this point, Option C proceeds in a northerly direction within the western side of the road reserve of the Leichhardt Highway until the south-eastern corner of Lot 3 FT695, which is owned by the WJV. At this point, the proposed alignment traverses this

allotment in a northerly direction to enter MLA 50230 in the south-east corner. The precise location of entry has not yet been determined and will depend largely on detailed design.

2.5.4 ROUTE OPTIONS ASSESSMENT

Option A was discounted in the comparative assessment as it was not favourable in a number of criteria, including the impact upon petroleum leases, the area of mapped regional ecosystems required to be cleared and the number of properties with frontage to the route portion option.

The comparative assessment indicated that both Options B and C rated of equal preference. Therefore, qualitative assessment of Options B and C was undertaken in the Route Selection Report to differentiate between the options and recommend a preferred option.

Option B will require a lesser amount of disturbance to mapped remnant vegetation, including of concern, dominant of concern, dominant endangered and endangered conservation status under the *Vegetation Management Act 1999* and a vegetation community constituting Brigalow (RE 11.9.5), which is listed as 'endangered' under the EPBC Act. Remnant vegetation was considered to be a defining criteria between Options B and C, and therefore, the Route Selection Report recommended Option B as the preferred pipeline option.

However, consultation carried out by the WJV with landowners in the vicinity of Options B and C indicated a strong preference by landowners for Option C. Given the equal preferential rating in the comparative analysis between Options B and C, and in response to the strong local landowner preference for Option C, the WJV has chosen to progress with Option C as described in the Route Selection Report.

Figure 1-1-SV2.3 depicts the revised Southern CSM Water Supply Pipeline alignment incorporating the amended northern portion, described as Option C.

2.6 PROPOSED PIPELINE JUSTIFICATION