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SMEC INTERNAL REF. 30021235

Off-Farm Efficiency  
Program

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# Nap Nap Station Water Efficiency Project

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2 August 2022

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## Executive Summary

The proponent seeks approximately \$2.39m for the Nap Nap Station Water Efficiency Project to achieve an estimated 300ML of water savings. 150ML is proposed to be transferred to the Commonwealth, the remainder retained by the proponent for improving security for stock and domestics and RFS fire water.

The existing stock and domestic supply system consists of open channels and is operated 4 to 5 times a year to refill ground tanks. Each operation involves refilling/wetting the channel system and associated seepage and evaporative losses.

The project scope consists of converting approximately 45km of open channel into an integrated pipeline network of some 85km to supply tanks and trough locations across Nap Nap Station.

Future operation and maintenance of the proposed works will be the responsibility of the proponent.

Technical documentation provided with the application was limited to a description and the bill of quantities in the cost schedule. The basis of design and scope provided was high level only. Water licences provided by DAWE demonstrate volumes consistent with historical extractions of between 400 and 500 ML per annum.

While water savings estimates are based on only anecdotal information, a fully piped stock and domestic is expected to improve reliability of supply and achieve water savings.

Besides the risk of cost escalation which rests with the proponent, three risks of note in the submitted risk register could impact the ability of the project to be implemented are:

- Approval not granted for pipeline alignments on crown land
- Negative cultural impacts arising from construction
- Negative environmental impact arising from construction

While each of these risks have been rated as medium (reduced from high) following mitigating actions it is not clear whether the mitigating actions have already been completed or if the high risk still remains at this time.

This review concludes the technical scope of works is appropriate for a stock and domestic supply system and the costs are appropriate for a scheme of this nature, slightly elevated from historical industry expectations, likely provisioning for supply chain and base materials escalation.

The program for implementation well prior to June 2024 is considered realistic.

On the basis that water savings for the Commonwealth are achieved, the project aligns with industry benchmarks and provides improvement to current assets and management of water allocations for the proponent moving forward.

# 1. Introduction

This summary documents a desktop review on behalf of DAWE of an infrastructure project application for funding under the Off Farm Efficiency Program received from the New South Wales Government for proponent Nap Nap Station.

# 2. Scope of Review

SMEC were engaged by DAWE to undertake a review of the Nap Nap Station Water Efficiency Project as part of the Federal Government's Off Farm Efficiency Program

The Scope of the review included consideration of:

1. Is the methodology and water savings calculations for the proposed works appropriate and likely to generate the proposed water savings? Are any further water savings possible?
  
2. Review methodology and calculations
  - Check against State or Commonwealth guidelines
  - Benchmark against other projects
  - Identify issues, risks and opportunities.
  
3. Does the detailed project budget demonstrate appropriate costings that reflect market realities (not inflated prices), and Review quantities and costs
  - Compare adopted rates with other similar projects in the region
  - Identify issues, risks and opportunities.
  
4. Is the risk plan adequate to the nature of the risks of the project?
  - Review risk plan (e.g. water savings, capex, O&M risks and costs)
  - Is the project sustainable in the long run?

# 3. Technical Elements

The project scope consists of converting an open channel S&D supply system to a full integrated piped network to tanks and troughs

The existing stock and domestic supply system consists of open channels and is operated 4 to 5 times a year to refill ground tanks. Each operation involves refilling/wetting the channel system and associated seepage and evaporative losses.

The project scope consists of converting approximately 45km of open channel into an integrated pipeline network of some 85km to supply tanks and trough locations across Nap Nap Station.

Technical documentation provided with the application was limited to a description and the bill of quantities in the cost schedule. The basis of design and scope provided was high level only. Water licences provided by DAWE demonstrate volumes consistent with historical extractions of between 400 and 500 ML per annum.

## 4. Water Savings

The water savings estimates provided by the proponent are based on only anecdotal information and surmising. The volume of historical water extraction was not substantiated by any pump metering records, nor were the estimate water savings supported by seepage tests or point of discharge metering.

However:

- the proponent's description of the volume of water historically extracted (400 to 500ML/year), aligns with the proponents extraction licences WAL16283 andWAL4054 totalling 459ML per annum (sourced from DAWE);
- the proponent has identified a basis for the capacity of the piped system of between 10 to 15 L/DSE/Ha per day along with a stocking rate of 1DSE/ha over 20,000ha. Should this materialise an annual supply of between 80 to 110ML would result
- the proponent has hence derived the potential total water savings in the order of 300ML (the approximate difference between these annual historical and proposed future volumes)

While the existing water losses are not substantiated, a fully piped stock and domestic is expected to improve reliability of supply and achieve water savings, and the basis for estimating water losses between historical and future estimates is appropriate in this instance.

Of the estimated 300 ML of savings, 150ML is proposed to be transferred to the Commonwealth, the remainder retained by the proponent for improving security for stock and domestic supply and RFS fire water (tanks to be fitted with RFS compatible outlets).

## 5. Costings

A review of 'Revised Original and Updated Revised New Budgets NAP NAP – July 2022.xlsx' was undertaken at a high level, consistent with the high level of the bill of quantities provided.

Overall, the estimated costs are appropriate for a scheme of this nature, slightly elevated from historical industry expectations, likely provisioning for supply chain and base materials escalation.

## 6. Risk Plan

A risk assessment was included in Attachment 5.

Three risks of note that could impact the ability of the project to be implemented are:

- Approval not granted for pipeline alignments on crown land
- Negative cultural impacts arising from construction
- Negative environmental impact arising from construction

While each of these risks have been rated as medium (reduced from high) following mitigating actions it is not clear whether the mitigating actions have already been completed or if the high risk still remains at this time.

The risk plan notes the responsibility of the mitigating actions rests with Nap Nap Station, from the supplied information it is not clear what extent of new assets require these approvals and to what degree non-approval would compromise the overall objectives of the project.

## 7. Qualifications

- This review consisted of a desktop assessment only, of information provided by the proponent and limited to those documents noted in the attachment as being reviewed.
- Socioeconomic/Stakeholder/Environmental/Salinity/Cultural elements were not assessed



## Appendix A

### Documents Received and Reviewed

Received	Type	Reviewed
NN-2 Application form for Nap Nap Station Water Efficiency Project - updated 28 June 2022	.doc	Y
NN-3 Eligibility Pre-Screening of Nap Nap Station project proposal	.doc	Y
NN-4 NSW Statement of Reasons - OFEP Nap Nap	.doc	Y
NN-6 NAP NAP Application Attachments - updated 28 June 2022	.xls	Y
NN-7 Economic Impacts of Nap Nap Station Water Efficiency Project	.doc	N
NN-8 Nap Nap Water Return and LTAAAY calculations sheet	.xls	Y
NN-9 What We Heard Report - Nap Nap Station Water Efficiency Project	.doc	Y
NN-10 Crowns Land Map _ Nap Nap Station	pdf	N
NAP NAP Water Saving Data Sheet	.pdf	Y
Original and Revised Budgets NAP NAP (1)	.xls	Y
Original_Nap Nap Station S&D Water System Budget (3)	.pdf	Y
Revised NAP NAP Materials Costing Sheet	.xls	Y
Revised Original and Updated Revised New Budgets NAP NAP - July 2022	.xls	Y

Note superseded versions are not included in above



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