5.6. PORT DOUGLAS RESERVOIR PROJECT

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DEPARTMENT: Operations

RECOMMENDATION

That Council receives and notes the progress of the Port Douglas Reservoir project.

EXECUTIVE SUMMARY

This report details the Port Douglas Reservoir project progress to the end of November 2017 and the anticipated future developments.

Financially the project is faring well with a surplus currently reported at $890,607, though anticipated water network upgrades currently in the design phase will likely utilise all of the surplus.

A change in the reservoir roof from steel to aluminium for increased design life has extended the anticipated completion date until the end of May 2018.

BACKGROUND

Council awarded the Port Douglas Reservoir project to Koppen Developments in May 2017. At the time of award, regular progress reporting to Council was requested. This report details the project progress to the end of November 2017 and the anticipated future developments.

FINANCIAL/RESOURCE IMPLICATIONS

As at the end of November 2017 the financial status of the project consists of:

Forecast Expenditure	
Design & project management	$526,400
Construction (including variations)	$11,946,701
Utilities & Land Acquisition	$32,500
Contingency (0.75%)	$93,792
TOTAL	**$12,599,393**
Forecast Revenue	
Building Our Regions Grant	$5,000,000
Community Development Grant	$6,745,000
Douglas Shire Council contribution	$1,745,000
TOTAL	**$13,490,000**
Financial Status - Surplus	**+$890,607**

It is noted that the new Port Douglas reservoir is a gravity system whereas the existing Craiglie reservoir is a pumped system. This means that some water reticulation upgrades within Port Douglas to ensure compliance will be required due the change from a pumped system to gravity system. Typical upgrades will consist of decreasing friction losses in the pipe network by either increasing pipe sizes, duplication of pipes or closing loops in the network.

Modelling of the water reticulation network has been completed to determine the areas requiring augmentation and design of these augmentations are underway. The costs involved in design have been included above however construction costs have not yet been included. It is anticipated that the majority of the surplus shown above will be utilised for these upgrades.

RISK MANAGEMENT IMPLICATIONS

The design to construct the reservoir was developed whilst Douglas Shire was part of Cairns Regional Council and reflected the approach of that Council at the time. With changes to the operational requirements of potable water delivery brought about by regulatory authorities, namely the chlorination of the water supply, Douglas Council has become aware that this has accelerated corrosion in steel reservoir roofs.

A specialist durability engineer was commissioned and determined that the proposed Port Douglas steel reservoir roof had a likely design life of ten years. As other elements of the structure, eg concrete walls had a design life of eighty years, it was determined that a steel roof was not acceptable.

Alternative roof solutions were investigated and it was determined that the most cost effective solution was to substitute steel components with aluminium components. As indicated in the financial section, there is sufficient budget to incorporate this change which has already been accounted for. The design life for an aluminium roof is anticipated at forty years and seems to be the current preferred design solution for reservoir construction within Australia.

The impact is an overall delay to the project completion until end of May 2018. Discussions with both external funding agencies have been made and they have no objection. There is not considered to be any major impacts on Council other than a delay to commissioning.

SUSTAINABILITY IMPLICATIONS

Economic:	Financial sustainability of the Council and Shire is important and long term impacts due to insufficient water would be significant
Environmental:	Commissioning of the new reservoir will allow Council to reduce power consumption by using a gravity system.
Social:	Communities expect assets such water systems to safe and maintained to necessary standards.

CORPORATE/OPERATIONAL PLAN, POLICY REFERENCE

This report has been prepared in accordance with the following:

Corporate Plan 2014-2019 Initiatives:

Theme 2 Building Sustainable Economic Base

2.1.2 - Investigate options, resources, development and implementation of additional water infrastructure including a new reservoir.

COUNCIL'S ROLE

Council can play a number of different roles in certain circumstances and it is important to be clear about which role is appropriate for a specific purpose or circumstance. The implementation of actions will be a collective effort and Council's involvement will vary from information only through to full responsibility for delivery.

The following areas outline where Council has a clear responsibility to act:

Asset Owner: Meeting the responsibilities associated with owning or being the custodian of assets such as infrastructure.

Part-Funder: Sharing the cost of a program or activity with other organisations.

CONSULTATION

Internal: Consultation has been undertaken with the Project Control Group and water operational staff.

External: Consultation has been undertaken with the Contractor.

ATTACHMENTS

1. Council Meeting 20171212 Photos **[5.6.1]**

13 July 2017 – Under boring enveloper pipes beneath Captain Cook Highway

12 September 2017 – Reservoir slab concrete pour

31 October 2017 – 450 and 600mm diameter pipe laying

17 November 2017 – Reservoir tank, wall lift #2 underway, internal columns temporarily propped