

Mangawhai Wastewater Treatment Plant Balance Tank

Meeting: Kaipara District Council
Date of meeting: 30 September 2020
Reporting officer: Donnicks Mugutso, Waters and Waste Manager

Purpose/Ngā whāinga

To seek approval for the Mangawhai Wastewater Treatment Plant Balance Tank Business Case and the funding allocation of \$2,100,000.

Executive summary/Whakarāpopototanga

As Mangawhai community continues to grow, WSP, the consultants hired to review the Mangawhai Community Wastewater scheme requirements, identified a need for an upgrade to buffer the peak inflows to the Mangawhai Wastewater Treatment Plant during storm events. The plant is currently designed for peak flows of 70l/s, but peak flows can reach 100l/s. In the latter cases, there is a high likelihood of wastewater overflows in the treatment inlet works. The balance tank is required now to mitigate these prevalent peak flow events.

This 2020/2021 Annual Plan allowed for a basic balancing tank. The preferred approach is to construct a balance tank sized and designed to convert to a reactor tank to future proof the treatment plant.

The consulting firm WSP provided an Engineer's Estimate (**Attachment A**) for the design and construction of the balance tank totalling \$2,094,168 (excluding GST). The total budget requested is \$2,100,000. It is envisaged that the project will be delivered over this Annual Plan and the first year of the next LTP.

The 2020/2021 Annual Plan budget for Wastewater Treatment Plant Upgrades is \$650,000 which will cover design and part of construction. The remaining estimate of \$1,444,168 to complete the project will be required to be brought forward from future years 2024/2025 and 2025/2026 LTP Plant Upgrades budgets to the 2021/2022 year.

Recommendation/Ngā tūtohunga

That the Kaipara District Council

- a) Approves the Mangawhai Wastewater Treatment Plant Balance Tank Project with a total budget spend of \$2,100,000.
- b) Approves to bring forward the Mangawhai Wastewater Development Plant Upgrades budget totalling \$1,450,000 into Year 2021/2022. This will reduce expenditure of \$500,000 from Year 2024/2025 and \$950,000 from Year 2025/2026.
- c) Delegates the Chief Executive to approve the contract for award up to a contract price of \$2,100,000 (excluding GST) once the tender process has been concluded.

Context/Horopaki

The Mangawhai community continues to grow. The treatment plant is currently designed to take peak flows of 70l/s but, inflows can peak at 100l/s. The consultants WSP have been engaged to find a solution that would manage the peak flows. They considered several scenarios, one of which was storage in the current network which was not pursued further. It did not provide a dual purpose as compared to the preferred solution. The preferred solution is to balance the peak flows with a tank located at the treatment plant. The advantage of this tank construction is that it can be converted into a reactor tank in the future when an upgrade is required.

WSP prepared an Engineer's Estimate (**Attachment A**) totalling \$2,094,168.

The project duration is estimated at 12 months and will cover two financial years.

Delegation approval is sought for the Chief Executive to approve the award of the construction contract of up to \$2,100,000 once the tender process has been completed. This is to expedite the execution of this project.

Discussion/Ngā kōrerorero

Options

Option 1: Council approves the Mangawhai Wastewater Treatment Plant balance tank project.

Option 2: Council does not approve the Mangawhai Wastewater Treatment Plant balance tank project.

The recommended option is **option 1**.

Assessment of Options

The **advantages** of option 1, approving the Mangawhai Wastewater Treatment Plant balance tank project are:

1. The new balance tank will manage the peak flows and circumvent overflows which can lead to environmental contamination and non-compliance.
2. The tank can be used in future as a reactor tank thereby setting the upgrade on an incremental progression of upgrades. This removes the requirement to do massive projects in any one year in future.
3. The balance tank serves a dual purpose which future proofs the plant. Even if a future reactor is not required within the time anticipated, the tank will continue to serve as a buffer for peak flows.

The **disadvantages** of **option 1**, approving the Mangawhai Wastewater Treatment Plant balance tank project are:

1. There will be an increase in Council debt.
2. If growth is slower than anticipated the investment may not realise the future of conversion to a reactor and the benefits are diminished.

The **advantages** of **Option 2**, not approving the Mangawhai Wastewater Treatment Plant balance tank project are:

1. Council's debt level will not increase due to this project.

The **disadvantages** of **Option 2**, not approving the Mangawhai Wastewater Treatment Plant balance tank project are:

1. The Council's risk exposure to non-compliance increases.
2. The lost opportunity to future proof the upgrade of the plant by constructing a convertible balance tank now.

Policy and planning implications

None

Financial implications

The funding required will be over two financial years. There will be no impact on the 2020/2021-year Annual Plan.

The request to bring forward \$1,450,000 from future LTP years 2024/2025 and 2025/2026 will mean we will increase our capital expenditure and Council debt in the 2021/2022 LTP year.

The project will be funded by future Development Contributions. The Development Contribution Reserves are in debit and will be funded by debt until future development occurs.

Risks and mitigations

There are risks in embarking in a project of this nature, however the risks can be managed to reduce their occurrence and impact.

Risk	Mitigation	Residual Risk
Budget overrun	The project team will employ robust project management and tracking of the budget.	Low
Project delays due to lockdown or similar events	Implement strategies that include employing, where possible, local contractors who may still work within the region. In the event of a lockdown.	Medium
Poor quality product	Ensuring that we employ good Management, Surveillance and Quality Assurance processes including regular site visits and progress checks.	Low
Construction site Health and Safety issues	Implement a strict procurement strategy that eliminates contractors with poor Health and Safety records. Cultivate a Health and Safety culture for all parties at commencement and follow up with site management.	Low

Significance and engagement/Hirahira me ngā whakapāpā

The decisions or matters of this report do not trigger the significance criteria outlined in Council's Significance and Engagement Policy, and the public will be informed via agenda on the website.

The project is under \$3m and within the budget signalled in the LTP.

Next steps/E whaiake nei

The next steps will be for staff to engage WSP for the detailed design of the balance tank, then tender and award before construction work starts.

Attachments/Ngā tapiritanga

	Title
A	Mangawhai Wastewater Treatment Plant Balance Tank Engineer's Estimate