



19 KITCHENER STREET
MARTINBOROUGH 5711

Memorandum

To: Greater Wellington Regional Council

From: Lawrence Stephenson

Date: 21 August 2018

Subject: Featherston Wastewater Treatment Plan Amendment to Proposal

As noted in the recent correspondence with our legal Counsel Philip Milne, South Wairarapa has amended its proposal by bringing forward Stage 2B from 20 years to 13 years. This will require corresponding amendments to conditions and in particular proposed condition 38 in Schedule 1. The options for that condition are either to delete clause (b) or deleted the entire condition. I understand however that the final form of conditions and the timing of the stages is a matter for the Panel.

Summary

Stage 2B provides for the construction of 'deferred' storage of approximately 186,000m³ (plus freeboard) and any further expansion of the irrigated land area to a total of 116ha if necessary. This was originally scheduled at 20 years, to ensure that there is no overcapitalisation of assets. The Council appreciates the desirability of bringing forward land treatment and has looked at options to compress the timeframes. The officers have concluded that Stage 2B can be brought forward by 7 years without causing an unacceptable impact on rates. We have considered whether that Stage could be further advanced but concluded that is undesirable.

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The sizing of the deferred storage pond is critically based on achieving at least 34% reduction in inflow and infiltration (I&I). This will take time to confirm through the implementation of the I&I reduction management plan. Further advancing Stage 2B would result in a risk that the pond and may built with greater capacity than is required.

Considerations in making the suggested Change

Stage 2B is dependent on a couple of different factors, the impact on the rates for the capital expenditure earlier than planned and the success of the I&I reduction programme. In comparison to the other stages, which are not as dependent on other actions to enable them.

Featherston Groundwater Infiltration Investigation 2013, Appendix 4A in the Assessment of Environmental Effects highlights a number of areas where I&I is highest and quantifies the amount of flow this contributes to the wastewater flow.

A typical small community in New Zealand will produce in the order of 210 – 475 L/p/d of wastewater. The FWWTP receives an average of 1,163 L/p/d (I/I, 2013) and of this, on average, the I/I (2013) investigation estimated that 74% of the average daily flow (ADF) is from inflow of stormwater, and infiltration of groundwater. This is recognised in the application and a minimum I&I reduction has been committed to in order to minimise the treatment, storage and the discharge quantity.

The report notes that the top 5 ranked catchments contribute 85% of the flow, yet comprise only 23% of the total pipe length, implying that remedial works would be most effectively if targeted within these catchments. Beyond the top 5 ranked catchments, night flow contributions become more wide spread with the remaining 17% of night flow coming from 77% of the total pipe length.

This report suggests that the target I&I reduction is likely to be achievable, however it is only the first step (monitoring and quantifying) in the I&I reduction management plan. Using the Inflow and Infiltration Control Manual, 2015, there are 5 steps for I&I reduction. This is also in line with the certified management plans developed for Martinborough and Greytown.

The steps are:

- Monitoring
- Source detection

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- Rehabilitation
- Post- rehabilitation Monitoring
- Post- rehabilitation assessment

Until the final step of the post-rehabilitation assessment has been completed and has confirmed whether the flow reductions are realised and reliable, it is premature to size the ponds. The 13 years will allow for this step and takes into account preparation of the design of the deferred storage pond, contract documentation preparation and construction.

Any advance of the time-table (including the 7 years reduction now proposed) will also have a rates impact.

Potential to bring forward stage 2A

The Council has also considered whether Stage 2A (expansion of the existing irrigation system to approximately 116ha) could be advanced from the currently proposed 10 Years. We have concluded that this would be undesirable for the following reasons:

- The additional benefit by reducing the timeframes for the further reduction of flows during the shoulder periods we feel outweigh the additional impact on rates.
- Stage 1B which will account for a significant reduction in the effects on Donalds Creek in comparison to the benefits that are calculated for Stage 2A. Stage 1B in summer (low flow conditions) diverts 88% of average flow compared to 96%, so the impact is disproportionate for an additional 8% reduction.

Regards

Lawrence Stephenson

