Memorandum

To:	Gina Sweetman at Sweetman Planning Services	**Date:**	19 May 2022
From:	Malcolm Franklin	**Our Ref:**	4293304
Copy:			
Subject:	Maitahi Bayview Private Plan Change Request 28 – Wastewater Assessment		

1 Introduction

This memo relates to the following matters.

- Assessment of the wastewater aspects of the PPC28 request
- Assessment of the aspects of the public submissions on the PPC28 request that relate to wastewater matters

2 Qualifications and experience

I hold the qualifications of Bachelor of Engineering (Hons, Natural Resources Engineering), and Chartered Professional Engineer. I have worked as a civil engineer in the water and wastewater industry for 26 years, with 23 of those years working for Beca based in New Zealand. I am a Chartered Member of Engineers New Zealand.

3 Code of conduct

I have read the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note 2014. I have complied with the Code of Conduct in preparing my evidence and will continue to comply with it while giving oral evidence before the Environment Court. My qualifications as an expert are set out above. Except where I state I rely on the evidence of another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

4 Assessment of Wastewater of the PPC28 Request

The PPC28 documentation describes connection of wastewater discharge from the proposed plan change area to the Council wastewater network in two separate areas:

- To the pipeline system that runs along Nile Street through to Neale Park Pump Station, and
- To the Walters Bluff and Brooklands side of the development, to two existing local pump stations in that area: the Brooklands Pump Station and Cemetery Pump Station.

The information provided in the PPC28 request includes the following elements that were determined following pre-lodgement engagement with the Council wastewater team on the capacity of the Council wastewater network:

- Upgrading (upsizing) substantial sections of the Council wastewater pipeline along the Nile Street through to Neale Park Pump Station alignment.

- Additional storage being constructed at the Weka Street Pump Station as well as the Cemetery Pump Station, and possible upgrades to the Brooklands Pump Station catchment.

- Additional storage potentially being required in the on-site wastewater system (for PPC28) to attenuate peak flows.

These are substantial upgrades to the wastewater network. I consider generally that an appropriate amount of analysis for PPC28 has been done, with the caveat that there are potentially other developments in these catchments that may impact on the assessments. The timing and scale of these could affect the overall impacts and network upgrades required in these areas.

Generally I agree that the PPC28 proposed approaches to manage wastewater from the proposed development areas are appropriate. There are aspects that I consider need to be addressed at the time of the development proceeding to the next stage, being subdivision under the operative Nelson Resource Management Plan. Specifically:

- More master planning and resource consent planning work would be required to refine the volume of the Weka Street Pump Station additional storage. There are other development proposals within this wastewater system catchment, which would also need to be considered to arrive at a suitable additional storage volume to construct.

- It is stated that additional Weka Street Pump Station, Cemetery Pump Station and Brooklands Pump Station storage - if required - could be installed under the road (for example in Sovereign Street for the Weka Street Pump Station). This is technically possible, but storage constructed under a road would be very expensive, and disruptive to construct. Other storage location options should be re-assessed if PCC28 is adopted, and the proposal proceeds to the subdivision stage.

- There is no mention of septicity, which could arise/increase as an issue with further pumping steps being added. Only a certain amount can be done to mitigate this issue, but any new wastewater pump stations in the development should be designed with an objective of mitigating septicity issues in the network as far as practicable and consideration and mitigation of downstream impacts of increased septicity will need to be addressed.

- Council has indicated that there is a potential need for a wastewater pipe upgrade in the Brooklands Pump Station catchment that has not been identified amongst the upgrades described in the PPC28 request documentation; this is related to a development in the Brooklands catchment that is not yet constructed but is approved and is not yet factored into the PPC28 calculations. Again, this would need to be re-assessed at the time of the development proceeding to the next stage. The requirement for a pipe upgrade can be addressed at subdivision stage, if PPC28 is adopted.

5 Assessment of the Wastewater Aspects of Public Submissions on PPC28

Matters raised by submitters relating to wastewater, and commentary on those matters are set out in the following subsections. Each subsection addresses a particular wastewater issue that has been raised by a submitter, or in some cases the same issue raised by multiple submitters.

Proximity of proposed wastewater pipeline to Dennes Hole

- Matter raised: Mike Tasman Jones, Save the Maitai, Dunstan Blay and other submitters raised concerns about the close proximity of a proposed wastewater pipeline to Dennes Hole. These concerns included contamination risk, potential cultural impact, and amenity effects including the impact on visual amenity of watercourses and swimming holes.

- My response: The alignment of the wastewater pipeline is yet to be confirmed. Details of the extent of earthworks will be sought at the subdivision stage. The installation of the wastewater pipeline would be subject to the Nelson Resource Management Plan. Commentary on cultural and amenity effects is beyond the scope of my evidence. In my opinion, however, the contamination risk can be mitigated by designing and installing the wastewater pipeline in accordance with industry good practice, which is a matter that can be dealt with at the detailed design stage.

Impact of increased wastewater flows on infrastructure, including Wakapuaka Wastewater Treatment Plant

- Matter raised: Nelson Marlborough DHB, Jonas Asmussen, Mike Tasman Jones, Dunstan Blay and other submitters raised concerns about the potential adverse impacts of increased wastewater from the development that could arise from PPC28 on infrastructure, including Wakapuaka Wastewater Treatment Plant.

- My response: Council has indicated that, as part of work underway to prepare a resource consent application for the Nelson Wastewater Treatment Plant, reviews of capacity and likely future capacity requirements have been undertaken. Understanding future capacity requirements is an integral and ongoing part of long-term planning for Council infrastructure. Growth is accounted for in a city-wide sense as opposed to on a development-by-development basis. I support this city-wide capacity planning approach for the wastewater treatment plant, rather than applying wider capacity issues to the consideration of particular growth areas.

Disruption from proposed wastewater pipeline construction on Branford Park route

- Matter raised: Mike Tasman Jones raised a concern about disruption from construction of a proposed wastewater pipeline along the Branford Park route.

- My response: My assessment is that an alternative pipeline route could be used if the effects of this route are not able to be adequately managed.

Assumed flows from other developments used in assessing wastewater flows from PPC28

- Matter raised: Mike Tasman Jones raised a concern about the feasibility purposes' assumption of a 350 lot size for a separate development in the Kaka Valley used in the wastewater calculations, and that there may be an underestimate of the future number of lots developed there.

- My response: While the detailed calculations provided are based on a 350 lot assumption, the PPC28 request states that this number is uncertain and also outlines the wastewater infrastructure upgrades that would be required if there were up to 800 lots. The population growth includes future external growth assumptions that can't be confirmed at this point.

Irrespective of whether there are 350 lots or 800 lots, I do not consider this to be a fatal flaw with respect to wastewater capacity. Rather, it is a matter of detailed design which could reasonably be addressed at a future subdivision stage.

Wastewater storage odour risk

- Matter raised: Mike Tasman Jones raised a concern about the risk of odours arising from new wastewater storage proposed.
- My response: My assessment is that storage can be designed to avoid significant odour issues.

Low pressure pumping noise risk

- Matter raised: Mike Tasman Jones raised a concern about the risk of noise arising from the potential, proposed option of a low pressure pumping system or systems.
- My response: My assessment is that low pressure pumping is a conventional wastewater reticulation solution which can be designed to avoid significant noise issues. I note that it is currently one of several options being considered.

6 Recommendations

Generally, I agree that PPC28 proposed approaches to manage wastewater from the proposed development areas are appropriate.

There are aspects that I consider need to be addressed if the proposed development proceeds, as set out in Section 4, above.

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