

BEFORE THE HEARINGS PANEL FOR THE PROPOSED GORE DISTRICT
PANEL

Under the Resource Management Act 1991 (**RMA**)

In the matter of Hearings of Submissions and Further Submissions on the
Proposed Gore District Plan – Response to Updated Minute 17
dated 23 August 2024

And **Gore District Council 3 Waters Department**

Evidence of Matthew Bayliss

17 September 2024

Introduction

- 1 My name is Matthew Paul Bayliss.
- 2 I am a Technical Director for Water Infrastructure at Pattle Delamore Partners Ltd (PDP).
- 3 I graduated from Canterbury University with a Bachelor in Engineering with Honours specialising in Natural Resources Engineering in 2010.
- 4 I have over 14 years post graduate experience in civil and environmental engineering and management of 3 waters infrastructure.
- 5 For eight years between April 2016 and April 2024 I was employed by the Gore District Council (GDC) as the 3 Waters Asset Manager.
- 6 I have prepared this statement of evidence at the request of the GDC in response to Updated Minute 17 of the GDC Hearing Panels for the proposed district plan.
- 7 Updated Minute 17 requested that evidence from appropriate experts outlining planned future activities and use at the East Gore Water Treatment Plant and Pump Station (the site), its potential adverse effects as identified by the submitters, and steps to be taken to avoid, remedy or mitigate those effects.
- 8 In my previous role as 3 Waters Asset Manager at the GDC I was involved in the submission of a Notice of Requirement (NOR) to include a designation of the site in the proposed district plan.

Background

- 9 The Local Government Act 2002 (Amendment 2010) determines infrastructure services, including water supply, to be a core service provided by local authorities.
- 10 Section 23 of the Health Act 1956 also dictates that it is every local authority's duty to "improve, promote, and protect public health within its district".
- 11 The collection, treatment and distribution of potable drinking water is considered an essential service for the benefit of residents and businesses throughout the Gore District.
- 12 The drinking water supply for the Gore Township services a population of approximately 8,200 and activity protects the health and wellbeing of the community and is indispensable to economic growth and development for the district.

- 13 Currently there are two separate water treatment plants that treat drinking water for the Gore water supply. The East Gore Water Treatment Plant which treats approximately 65 % of the water and the Hilbre Avenue Water Treatment Plant which treats the remaining 35 % of the water.
- 14 In December 2017, after considering the advantages and disadvantages of several options to ensure the Gore Waters Supply met the requirements of the New Zealand Drinking Waters Standards, the Council resolved to centralise Gore's Water Treatment at the East Gore Water Treatment Plant and decommission the Hilbre Avenue Water Treatment Plant.
- 15 To allow the centralisation of Gore's Water Treatment a major upgrade of the East Gore Water Treatment Plant was required as well as the installation of interconnecting pipes between the Council's Jacobstown Bore Field with the East Gore Water Treatment Plant (the interconnecting pipeline). Note this interconnecting pipeline is required to cross the Mataura River.
- 16 In May 2022, a \$6.6 million upgrade of the East Gore Water Treatment Plant was completed. The Council is also currently progressing with plans to install the interconnecting pipeline with this expected to be completed in the second half of 2025.
- 17 Figure 1 below identifies the main structures currently located at the site

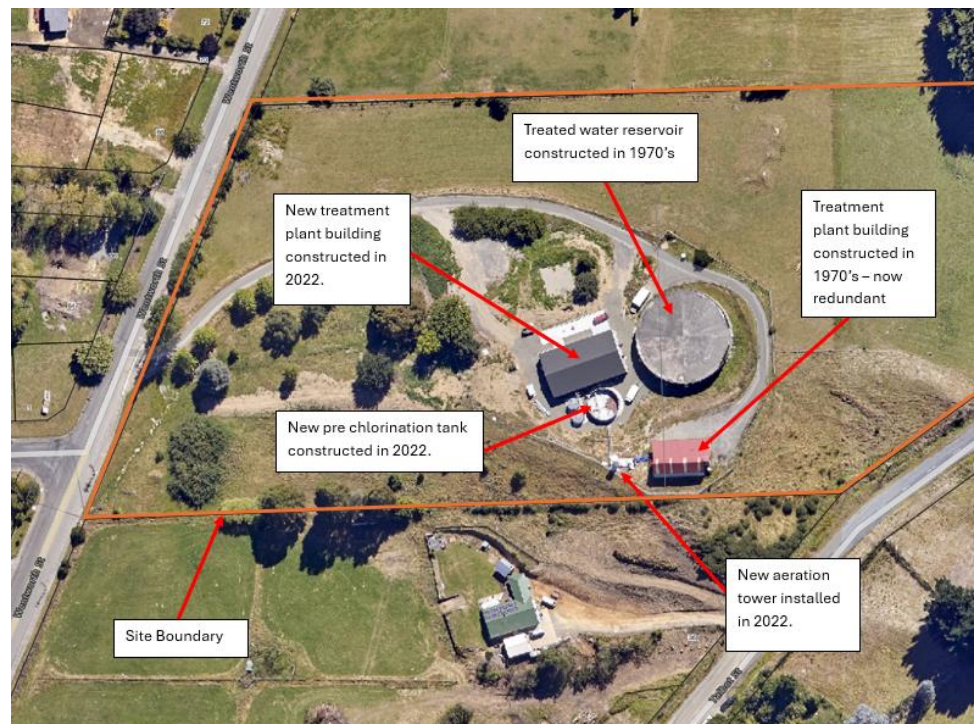


Figure 1 – Existing structures at the East Gore Water Treatment Plant Site

- 18 As part of the design-build contract that the Council awarded for the upgrade of the East Gore Water Treatment Plant, a requirement was included to ensure the noise limits of the current district plan (the noise limits) were met at the site boundary.
- 19 However following the commissioning of the upgraded treatment plant, it became apparent that these noise limits were being exceeded. The noise exceedances were identified to be coming from an Aeration Tower installed close to the southern boundary of the site.
- 20 To resolve this the Council worked with its contractor and specialist noise consultant Marshall Day Acoustics to implement mitigation measures to ensure the treatment plant currently meets the noise limits. Please refer to Mr Brendon Shanks evidence for further details regarding the noise limits, testing and mitigation measures that have been implemented.

Potential Noise Increase Following Completion of the Interconnecting Pipeline

- 21 While the treatment plant as it is currently being operated meets the noise limits of the district plan, the testing that Marshall Day Acoustics have completed indicated there is a risk that the noise limits may be exceeded when the interconnecting pipeline is installed, and the treatment plant is required to treat a greater volume of water.
- 22 Whether or not the noise limits are exceeded will be dependent on the speed that the aeration tower fan needs to operate at. This unfortunately cannot be confirmed until the interconnection pipeline has been installed.
- 23 As outlined in Mr Brendon Shanks evidence there are further mitigation measures that can be implemented if required to ensure the noise limits are met once the interconnecting pipeline has been installed.

Potential for Future Demand Increases to Require Capacity Upgrades

- 24 The GDC completed a review of current and future demand for the Gore Water Supply in 2023. This found the current peak demand of the Gore Water Supply to be 5,838 m³/day. The peak demand is estimated to increase to 5,978 m³/day by 2030 and 6,622 m³/day by 2050. It should however be noted that this estimated future demand is based on several assumptions, in particular population changes and therefore subject to change over time.
- 25 The recent upgrade of the East Gore Water Treatment Plant was designed to have a maximum capacity of 6,000 m³/day. However, the upgraded plant was designed so the capacity of the treatment plant can be expanded to 8000 m³/day if required in the future.

- 26 The main requirement to expand the capacity of the treatment plant from 6,000 m³/day to 8,000 m³/day would involve the installation of an additional membrane skid. Provision has been made in the recently constructed water treatment plant building to accommodate this extra membrane skid. i.e. no new buildings or structures on the site are expected to be required to expand the capacity of the treatment plant.
- 27 I am not aware of any current noise issues being generated from the treatment plant building and given the additional membrane skid will be housed inside the existing building it is not expected that this will result in any change in noise levels at the site boundary.
- 28 However, increasing the capacity of the treatment plant would result in additional flow through the Aeration Tower and may require the Aeration Tower fan speed to be increased. As detailed in Mr Brendon Shanks evidence, this may result in additional noise at the site boundary. However as also explained in Mr Brendon Shanks evidence, if this does result in the noise limits being exceeded there are mitigation measures that can be implemented to ensure the noise limits are met.

Potential Future Requirement to Fluoridate Gore's Drinking Water Supply

- 29 Another potential upgrade that may be required is fluoridation of the treated water. On 9 November 2021, the Health (Fluoridation of Drinking Water) Amendment Act 2021 (the Act) was passed which essentially moved the decision making authority on the fluoridation of community drinking water supplies from local authorities to the Director-General of Health.
- 30 Since the passing of the Act, the Director General of Health has directed several local authorities to take actions to allow the fluoridation of selected drinking water supplies. While the GDC has not yet received a direction from the Director General of Health to begin fluoridation of the Gore Drinking Water Supply, it is understood there is potential for this to occur at some stage in the near future.
- 31 The Council was aware of the potential for a requirement to begin fluoridation of its water supplies when it was going through the process of upgrading the East Gore Water Treatment Plant. As a result of this, a specific area for the required equipment to allow fluoridation was included in the treatment plant building constructed in 2022. Due to this, if the GDC is required to fluoridate its water supply in the future, this will simply require the installation of additional equipment within the existing buildings on the site. This new equipment is not expected to generate any more noise than the existing equipment located in the treatment plant building and therefore is not expected to result in any noise issues at the site boundary.

Potential Requirement for Additional Compliance Monitoring Requirements

- 32 There is potential for compliance requirements and standards to change in the future requiring further upgrades of the treatment process at the site. However, when considering the Council has only recently completed a major upgrade, installing modern technology, any further upgrades are expected to be relatively minor.
- 33 The most likely required change is the installation of additional or improved monitoring equipment. These minor upgrades are not expected to require the construction of any major structures or result in any noise issues at the site boundary.

Summary

- 34 Following the Council's decision to centralise Gore's Water Treatment at the East Gore site, a major upgrade of the East Gore Water Treatment Plant was completed in May 2022.
- 35 This did initially result in exceedances of the noise limits of the district plan at the site boundary. The Council has however worked with its Contractor and specialist noise consultant Marshall Day Acoustics to implement mitigation measures to ensure the treatment plant meets the current district plan noise limits.
- 36 There is potentially a requirement to increase the capacity of the treatment plant, fluoridate the water supply and install additional or improved monitoring equipment at the treatment plant in the future.
- 37 However, the recently upgraded treatment plant has been designed with this in mind and due to this, no significant new structures are anticipated to be required at this site in the short to medium term.
- 38 When the flow through and/or capacity of the treatment plant is increased, there is potential for the noise emitted from the Aeration Tower to increase to a point where it will exceed the district plan noise limits at the site boundary. However as detailed in Mr Brendon Shanks evidence, mitigation measures can be implemented to ensure the district plan noise limits are not exceeded.



Matthew Bayliss

17/09/2024