

**BEFORE THE INDEPENDENT HEARING COMMISSIONERS
FOR GISBORNE DISTRICT COUNCIL**

IN THE MATTER: of the Resource Management Act 1991

AND

IN THE MATTER: of an application by Gisborne District Council
for resource consent associated with
wastewater overflows

SUMMARY OF EVIDENCE OF DR SHANE KELLY – ECOLOGY

13 July 2021

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INTRODUCTION

1. My full name is Dr Shane Kelly. I am the Managing Director of Coast and Catchment Ltd. I have the qualifications and experience set out in my Evidence in Chief (EIC).

SUMMARY OF EVIDENCE

2. Wastewater overflows have the potential to adversely affect receiving water, habitat quality and aquatic communities by increasing nutrient concentrations and productivity, through the deposition and decomposition of organic matter, and through the effects of toxic contaminants. However, the actual ecological effects caused by any particular overflow depends on the nature of the discharges, discharge loads and frequency, whether overflows occur during dry or wet weather, and the values and assimilation capacity of the receiving environment.
3. Separating the ecological effects of intermittent wastewater discharges from other stressors is difficult. Our ecological assessment therefore took a “principles and data” driven approach to determining the ecological impact of discharges from Gisborne’s wastewater network. My conclusions are based on the integration of information about the nature of wastewater effects, the characteristics of Gisborne’s waterways, existing water and sediment quality, hydrodynamics, and benthic ecology (which included sampling directly below major overflow points).
4. Gisborne is built around the confluence of two rivers, the Waimata River and the Taruheru River, which combine to form the Turanganui River. A number of smaller urban streams, the largest of which is Waikanae Creek, feed into this system. A desktop review of Gisborne’s urban waterways indicated that they have a history of modification, with urban streams generally consisting of piped, channelised and open stream reaches, with narrow riparian margins and little vegetative cover. Available macroinvertebrate data indicates that the quality of Gisborne’s freshwater urban streams and rivers tends to be poor. However, they continue to support pollution-tolerant macroinvertebrates and fish. Available information also suggested that estuarine sections of Gisborne’s rivers also support a range of fish and moderately diverse invertebrate communities.
5. The analysis of wastewater samples, and samples obtained from rivers and streams before, during, and after controlled discharge events indicated that wet weather discharges did not have a marked impact on estuarine water quality in Gisborne’s rivers. We also sampled sediments directly below, and away from, key wastewater

outfalls at 12 sites spread along tidal reaches of the rivers and did not detect adverse sediment quality effects that could be clearly linked to wastewater discharges.

6. The overall conclusion I drew from our data, water and sediment quality analyses, hydrodynamic modelling by MetOcean, and the intermittent nature of discharges, was that the potential for the controlled wastewater discharges to degrade receiving water quality sufficiently to cause more than minor adverse ecological effects appears to be low.
7. The results of our intertidal benthic macrofauna survey supported that conclusion. Benthic communities at sites directly below the two primary wastewater outfalls in the lower Taruheru and Turanganui zones were largely indistinguishable from the communities at other sites within those zones. Samples obtained directly below the Peel Street and Wainui Road outfalls were particularly notable for the high numbers of small cockles they contained. Overall, the effects of wastewater discharges on benthic ecology appeared to be of little practical significance in the receiving environments sampled.
8. However, the potential for substantial (most likely short-term) impacts from dry weather overflows cannot be discounted if discharges make their way into streams and watercourses. The information provided in the Application, and other expert evidence indicates that such discharges to water are infrequent, but I note impacts can still be significant (albeit short term) if a large volume of wastewater enters a river over an extended period, and/or the overflow is to a small tributary. Such an event was highlighted by Ms. Milne in her technical memo appended to the S42A officer's report. She noted a 2015 pump station failure, that led to a dry weather discharge to Wainui and killed eels and other aquatic life. I therefore recommend having systems and processes in place for preventing, detecting and responding to such events. I understand from the evidence provided by Council that it has public awareness campaigns; monitoring and cleaning schedules and procedures; and contractor response plans which form part of its standard operating procedures. I agree with those measures, which are in line with my recommendation.
9. Overall, having considered the Application and the draft consent conditions provided by the Applicant, I consider that the systems and processes proposed are sufficient to avoid or remedy potential ecological effects.

Dr Shane Kelly

13 July 2021