

**Before the Hearings Panel
At Waimakariri District Council**

Under the Resource Management Act 1991

In the matter of the Proposed Waimakariri District Plan

Joint Witness Statement – Stream 12C/12D Wastewater Expert Conferencing

Date: 04 September 2024

INTRODUCTION:

- 1 This Joint Witness Statement (JWS) relates to expert conferencing on wastewater.
- 2 The following participants were involved in this conferencing and authored this JWS:
- (a) John Aramowicz;
 - (b) James Hopkins;
 - (c) Cameron Mars;
 - (d) Colin Roxburgh;
 - (e) Danash Sookdev;
 - (f) Eoghan O’Neill;
- 3 A meeting between the participants was held on 4 September 2024 at Waimakariri District Council Chambers. This JWS has resulted from the meeting and finalisation of the written statements over email.
- 4 In preparing this statement, the experts have read and understand the Code of Conduct for Expert Witnesses as included in the Environment Court of New Zealand Practice Note 2023¹.

PURPOSE AND SCOPE OF CONFERENCING:

- 5 The conferencing was focused on matters identified in Minute 33, dated 29 July 2024 in relation to wastewater.
- 6 The experts discussed the request contained in Minute 33, which stated:
- “Expert conferencing is required on the cumulative effects of all the requested rezonings, including the Ohoka rezoning addressed in Hearing Stream 12D.*

¹ <https://www.environmentcourt.govt.nz/assets/Practice-Note-2023-.pdf>

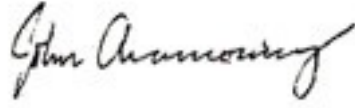
1. *Taking into account that some areas are using a Septic Tank Effluent Pumping system and are connected to the Mandeville Area Wastewater Scheme and others are connected to the Waimakariri wastewater network, is there sufficient wastewater capacity to accommodate additional demand in the Swannanoa/Mandeville/Ohoka area? Please explain how the two systems operate, the capacity in each, and whether additional demand can be accommodated.*
2. *If it is identified that there would be adverse cumulative effects and that demand exceeds capacity, what might the triggers be for upgrades or new infrastructure to be provided, how could these be reflected in district plan provisions for each rezoning request.”*

7 Commissioners requested Mr Aramowicz, Mr Roxburgh, Mr O’Neill, Mr Hopkins, Mr Sookdev, Mr McLeod and Mr Mars attend the conferencing. Mr McLeod was unable to attend.

MATTERS THAT THE EXPERTS AGREE and DISAGREE ON:

7 Please refer to the attached table which sets out the agreed positions, and remaining areas of disagreement.

Signatories



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John Aramowicz



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James Hopkins



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Cameron Mars

Eoghan O'Neill

Colin Roxburgh

Signatories

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John Aramowicz

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James Hopkins

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Cameron Mars

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Eoghan O'Neill

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Colin Roxburgh

Signatories

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John Aramowicz

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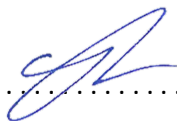
James Hopkins

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Cameron Mars

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Eoghan O'Neill


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Colin Roxburgh 12/09/2024

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James Hopkins

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Cameron Mars

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Eoghan O'Neill

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Colin Roxburgh

A handwritten signature in black ink. It features a stylized, circular flourish on the left, followed by the name 'Sookdev' written in a cursive script. To the right of the name is another circular flourish containing the initials 'DS'. The entire signature is underlined with a single horizontal stroke.

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Danash Sookdev 12 – 09 - 2024

EXPERT CONFERENCING STREAM 12C: WASTEWATER

Issue	Commissioner’s Question	Agreed positions	Remaining disagreements
Expert conferencing is required on the cumulative effects of all the requested rezonings, including the Ohoka rezoning addressed in Hearing Stream 12D.			
<p>Wastewater</p>	<p>Taking into account that some areas are using a Septic Tank Effluent Pumping system and are connected to the Mandeville Area Wastewater Scheme, and others are connected to the Waimakariri wastewater network, is there sufficient wastewater capacity to accommodate additional demand in the Swannanoa / Mandeville / Ohoka area? Please explain how the two systems operate, the capacity in each, and whether additional demand can be accommodated.</p>	<p><u>How the current system operates</u></p> <p>The Mandeville Area Wastewater Scheme is primarily a Septic Tank Effluent Pumping (STEP) system which mostly services RES3 and RES4 areas in Mandeville and Swannanoa. The STEP systems are all connected to wastewater reticulation. I&I is an issue with the STEP system across Mandeville due to high groundwater and potential ponding over septic tanks.</p> <p>There is a pump station on Bradleys Road which then pumps wastewater from this area to the Rangiora WWTP. This ultimately discharges to the ocean outfall.</p> <p>Ohoka is a low-pressure sewer system that connects partway along the Bradley’s Road rising main, with waste pumped to the same Rangiora WWTP.</p> <p>East Woodend is not part of either system. There are no capacity constraints in that area.</p> <p><u>Capacity in the system</u></p> <p>A model of the current scheme was undertaken by Council in 2021, which allowed for the development areas proposed by Council in the PDP. This model</p>	<p><u>Use of “off-peak” hours to pump</u></p> <p>(CR, JA) Based on calculations by Council engineers, there is no unallocated design capacity in the current Mandeville WW system to support additional rezoning sought by the 12C submitters in the long-term. The current wastewater (WW) system has been designed, sized and constructed to service the existing and proposed zoning identified by the PDP.</p> <p>The current design capacity of the Mandeville WW system is limited by the size of the existing pumps at the Bradleys Rd pump station, and the pressure rating of the existing pipe between the pump station to Rangiora.</p> <p>In addition, the Bradleys Road pump station occasionally operates at capacity for extended periods due to the effects of stormwater and/or groundwater inflows, meaning the submitter’s proposals to add extra connections and to discharge the additional flow from for the 12C submissions by pumping during “off-peak” times would not be reliable and would almost certainly increase the extent of issues (ie WW overflows) experienced by both existing and future</p>

		<p>indicates that the scheme currently meets at least a 1 in 5-year level of service with full development under both plans (operative and proposed) without any tanks overflowing, and that the critical event has a 48-hour duration.</p> <p>However, it does not meet a 1 in 50-year level of service. Storm events greater than 1 in 5 years have resulted in the system becoming overloaded for extended periods. Residents have reported to Council they have not had wastewater service for an extended period of time. The raw flow data from the Bradley’s Road pump station shows in late July/early August 2022 the system was operating at or near capacity for approximately two weeks.</p> <p><u>Upgrades required to service additional growth</u></p> <p>It is expensive to resolve the I&I issues in the existing Mandeville system.</p> <p>However, it is technically feasible to find another solution. A new rising main would be required from the Bradleys Road pump station. Under Stream 12D, the developer is proposing a new pump station and a 7.1km rising main to the Rangiora WWTP. For this to also service Stream 12C rezonings in the Mandeville/Ohoka area, this would need to be upsized and extended to service them.</p> <p>The project to install the rising main would need to be developer or Council led. Where multiple parties are involved, Council usually takes the lead and recoups</p>	<p>residents that discharge to the current Bradleys Road Pump system during times of high inflow and infiltration.</p> <p>However, WDC accept that given the rate of subdivision that has occurred historically in the Mandeville area, and the extent of existing development, there is currently a small amount of un-utilised capacity in the Mandeville-Ohoka WW system. WDC agree it would be a reasonable compromise to allow the unused capacity to be used in the short term to facilitate growth by allowing a temporary connection for Ohoka 12D, providing of course that capacity to service the Mandeville area is reinstated before it becomes capacity-constrained.</p> <p>The short-term spare capacity is within the Bradleys Rd-Rangiora WW rising main (well-downstream of the Bradleys Rd pump station) where Council estimate there is short-term capacity for approximately 219 – 250 lots (as was identified in Stream 12D). The reason the short-term discharge from 12D can be accommodated by the existing rising main is that the pressure caused by the pumped wastewater reduces as it flows along the pipe. At some point the pressure caused by the Bradleys Rd pump station will have reduced sufficiently, allowing additional wastewater from the 215-250l lots of 12D to be accommodated by the pressure rating of the existing pipe.</p>
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		<p>costs through Development Contributions. This is currently not budgeted for by the Council.</p>	<p>The permanent WW solution for 12D will require a dedicated trunk main to Rangiora be built in due course to achieve the capacity needed for the 12D area, thereby reinstating full capacity to the Bradleys Rd-Rangiora rising main.</p> <p>In relation to the Mandeville area, if the rezoning that is being sought by the submitters was approved by the Commissioners, a new pump station and rising main would need to be constructed between Mandeville-Rangiora to provide adequate WW capacity. No provision for this has been made in the current WDC 50yr growth plan.</p> <p>(DS) I disagree with the above and highlight again that pumping of wastewater during “off peak” periods will work but maintain that temporary retention of wastewater for 48 lots on site during periods of inundation and infiltration will be provided.</p> <p>In Mr O’ Neill’s Statement of Evidence dated 5 March 2024, paragraphs 46, 47, 48 and 49 he refers to analysis of historical Bradley’s Road pumped wastewater flows with SCADA data supplied by WDC. He concludes that the pump station operating at the peak 1740 m³/day flow was operational for 17 hours; suggesting that there’s still at least 7 hours remaining from the 24 hours pumping indicated in our meeting. This indicates availability of spare capacity.</p>
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			<p>(EON) With respect to Mr Sookdev’s above reference to my Stream 12D evidence dated 5 March 2024, I note the following comments.</p> <p>The reference in paragraph 49 of my evidence, dated 31st July 2022, that “<i>there were still approximately 7 hours when the main Bradleys Road pump station was not operational</i>”, is specifically referring to an observation of the raw pump station data on that particular day. It was not, nor should it be taken to be, an indication of the minimum available pumping capacity within Bradleys Rd pump station.</p> <p>My Stream 12D evidence continues, in paragraphs 50 to 53, to consider a conservative assessment of what potential capacity may be available within the Bradleys Rd pressure main to facilitate the <u>temporary</u> connection of a future pump station to service the Stream 12D Ohoka site. This assessment conservatively assumed that only 4 hours of potential pumping time was available within the existing pressure main from the Bradleys Rd pump station. Through the Stream 12D conferencing, it was agreed that this capacity was only temporarily available within the pressure main as further, already zoned, development would eventually use this.</p> <p>However, as noted above in Mr Roxburgh’s statement, it was generally agreed that there was some potential for a portion of this capacity to be used, on a temporary basis to facilitate initial</p>
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			<p>development within the Stream 12D Ohoka site. This would be via a new pump station which would be initially connected to the existing pressure main and would eventually connect directly to Rangiora WWTP via a duplicate pressure main.</p> <p>(DS) There could be capacity in the system to pump off-peak from an additional unknown number of lots. On-site storage for prolonged period would be required during periods when I&I is in effect</p> <p>(CM) There does not appear to have been sufficient investigation and modelling carried out to confirm the effects of storage and off peak pumping. Until this is carried out then such an approach cannot be discounted.</p> <p>(DS) I am in agreement with above statement by (CM) and request that WDC make the model available as discussed in our conferencing meeting.</p> <p>(DS) A pressurised sewer system is proposed which operates as a closed system and is not subjected to any I & I effects. Any likely prolonged storage can be mitigated by chemical dosing and forced ventilation at the storage source.</p> <p>Other odour control measures are available, the sizing and further details is normally carried out at detailed design stage.</p>
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			<p>(CM) Council has stated that the Mandeville Network is not currently meeting the 1 in 50 year level of service and that the system is inundated during the 1 in 5 year storm event. Council appears to be using stormwater terminology to describe the wastewater network. Wastewater networks are based on set flows and peaking factors, not on rainfall return periods. The Engineering Code of Practice requires the design life of a wastewater network “to have a useful asset life of at least 100 years”.</p> <p>(CM) No provision has been made for an upgrade to the Mandeville Wastewater Management Scheme to fix the current I&I issues associated with the STEP network. Council has stated that the current scheme has sufficient capacity to cater for the current zoning (which would allow additional lots if developed) yet has also stated that due to the I&I issues the current network capacity is exceeded (with pumps running 24/7 sometimes for up to two weeks) during 1 in 5 year storm events and beyond (with current residents complaining of wastewater issues). Therefore, if the current network capacity is exceeded during the 1 in 5 year storm event due to stormwater and groundwater infiltration and if there are no plans to fix or this issue, then the current system does not have capacity to service any additional Lots regardless of the current zoning. Logic suggests that any additional connections from the current zone into the network would act to further overload the network during a 1 in 5 year storm</p>
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			<p>and above. To fix the current Mandeville wastewater network issues, the existing STEP network will require replacement and Council has stated they would prefer it be replaced with a Low Pressure Sewer (LPS) scheme, this will require the existing Mandeville reticulation to be replaced due to pressure differences between STEP and LPS networks. The proposed 12C rezoning within the Mandeville area can be serviced for wastewater by bypassing the Mandeville Scheme if a new main and associated pump station/s are installed (including any LPS reticulation required from each plan change area).</p> <p>If all 12C sites within the Mandeville area are allowed to be rezoned, this will increase the financial viability for a new main and spread the expenditure amongst developers making any such scheme more realistic. Developers will also partially start replacing the existing reticulation as they will be required to run new pressure reticulation from their respective subdivision areas, which can be upsized to cater for additional loading should the current STEP networks be replaced by LPS. However, without re-zoning, Mandeville will continue with its current wastewater issues, with no plans for remediation or upgrades, and little incentive for future developers to become involved.</p>
Wastewater	If it is identified that there would be adverse cumulative effects and	As above, a new duplicate system would be required to service the proposed rezonings to take the	(DS) With only 48 lots requiring to be serviced for wastewater for the Mark & Melissa Prosser Stream 12C submission, I strongly believe that there is

	<p>that demand exceeds capacity, what might the triggers be for upgrades or new infrastructure to be provided, how could these be reflected in district plan provisions for each rezoning request.</p>	<p>wastewater to the Rangiora WWTP. Beyond this point, there are no capacity issues identified.</p> <p>The trigger would be the first area applying for resource consent. The project would be dealt with through a combination of the Development Contribution policy, schedules and private developer agreements.</p>	<p>capacity to treat 98m³/day or 1.1l/s of wastewater, leading a pressure pipeline from the development directly to the Bradley's Road pumpstation</p>
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