

**BEFORE INDEPENDENT HEARING COMMISSIONERS APPOINTED BY THE
WAIMAKARIRI DISTRICT COUNCIL**

IN THE MATTER OF

The Resource Management Act 1991 (**RMA** or
the Act)

AND

IN THE MATTER OF

Hearing of Submissions and Further
Submissions on the Proposed Waimakariri
District Plan (**pWDP** or **the Proposed Plan**)

AND

IN THE MATTER OF

Hearing of Submissions and Further
Submissions on Variations 1 and 2 to the
Proposed Waimakariri District Plan

AND

IN THE MATTER OF

Submissions and Further Submissions on the
Proposed Waimakariri District Plan by **Mark
and Melissa Prosser**

**EVIDENCE OF DANASH SOOKDEV
ON BEHALF OF MARK AND MELISSA PROSSER**

DATED: 5 MARCH 2024

Presented for filing by:
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INTRODUCTION

- 1 My name is Danash Sookdev.
- 2 I am a Lead Civil Engineer in the Land and Water Infrastructure delivery team at the Christchurch office of Aurecon in Christchurch. I have contributed to land development projects across New Zealand in Land and Water Infrastructure delivery in Auckland, Hawke's Bay and Christchurch for clients in both the private and public sectors. I have designed roading, water, stormwater and wastewater infrastructure and acted as engineer and engineer representative for several land subdivision projects with the most recent being Te Whariki in Lincoln for Ngai Tahu.
- 3 I have more than 28 years' experience in structural design and civil engineering projects delivering projects of varying size and complexity abroad and in the recent years in New Zealand.
- 4 I hold the qualifications of BSc (Hons) Applied Science from Pretoria University and am a Chartered Professional Engineer (CPEng), with specialisation in Land Development.
- 5 This evidence is in support of Mark and Melissa Prosser's (Ohoka Farm Holdings Limited, **OFHL**) submission on the Proposed Waimakariri District Plan (**pWDP**). My role has been to assess the appropriateness of the proposed rezoning of approximately 73ha of land at Mandeville to Large Lot Residential (**LLR**) Zone from an infrastructure servicing perspective, specifically water and wastewater.
- 6 I have read the Environment Court's Code of Conduct and agree to comply with it. My qualifications as an expert are set out above. The matters addressed in my evidence are within my area of expertise, however where I make statements on issues that are not in my area of expertise, I will state whose evidence I have relied upon. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in my evidence.

SCOPE OF EVIDENCE

- 7 In my evidence I present my assessment of the water and wastewater considerations of Mark and Melissa Prosser's rezoning submission under the pWDP.
- 8 My evidence considers the following:
- (a) Site context including surface water and groundwater;
 - (b) Existing water and infrastructure supply provision for the Site;
 - (c) Anticipated water and wastewater demand from Large Lot Residential (LLR) zoning and future development of the Site, including firefighting provision;
 - (d) Communication and correspondence undertaken regarding potential site servicing options;
 - (e) Assessment of the servicing considerations for the Site noting the groundwater levels and groundwater resurgence, including a high-level assessment of potential water and wastewater servicing options; and
 - (f) A summary of additional work that will be undertaken to further investigate and confirm the suitability of the options identified to service the site from a water and wastewater infrastructure serviceability point of view.
- 9 In preparing my evidence I have reviewed the following documents and evidence:
- (a) OFHL's submission on the pWDP, including the Services Report, Ohoka Farm, Ashworths Road, Prepared for Ohoka Farm Holdings Limited, 502044, Eliot Sinclair, 20 July 2021 (referred to as 'ES Services Report');
 - (b) The proposed Outline Development Plan (**ODP**) for the Site (Mandeville North-East Development Area Outline Development Plan - 524072-W00001-DRG-US-0002, dated 28 November 2023);

- (c) The indicative subdivision concept layout for the Site (Concept Layout Plan Proposed Subdivision of Lot 6 DP 2038 & Lot 8 DP 314202- 524072-W00001-DRG-US-0001, dated 28 November 2023);
 - (d) WDC Memo 'Mandeville Wastewater Modelling – Rezoning Ohoka Utilities Area' File No: SEW-03-20-06/ 211124188129, dated 24 November 2021 (**Attachment 1**);
 - (e) the 20-lot rural Subdivision consent (RC205106 and RC205107) approved for the site;
 - (f) various emails between Aurecon and WDC; and Aurecon and ECan referred to in the correspondence section below; and
 - (g) the statements of evidence of OFHL's technical experts regarding geotechnical, contamination, stormwater and flooding matters.
- 10 To assist the Panel in its consideration of my evidence, I have included a series of Figures and Tables that I will refer to where these assist to outline my views and analysis.

SUMMARY OF MY EVIDENCE

- 11 Given this is a rezoning request, my evidence has focused on whether there are any insurmountable water and wastewater servicing reasons that might arise from the increased demand on the water and wastewater network that would impede the Site from being rezoned to LLR under the pWDP. In my experience, I conclude that:
- (a) Water supply for the site can be provided through a restricted supply with on-site firewater storage on each site. There are two potential connection points to the WDC Mandeville-Fernside Rural Restricted Water Supply Scheme (the nearby DN63 on Dawsons Road and a DN150 further away), indicating that feasible solutions to provide 2.7l/s of demand to the Site. Alternatively, water supply could be serviced via extraction from groundwater.
 - (b) Firefighting provision for future LLR development could be serviced by connection into the WDC water supply scheme or via individual tanks located on each lot.

- (c) Wastewater for 20 lots from the Site has already been accepted and accounted for by the Council system as part of approved rural subdivision consent (RC205106 and RC205107). Wastewater servicing could also be provided via a Low Pressure Sewer System (**LPSS**) to service the remaining approximately 95 LLR lots. Alternatively, the Site could be serviced by gravity collection of wastewater flows generated for 115 lots which would be pumped from an on-site pump station via a new approximately 1.8km rising main to the Bradley's Road pump station. Options to provide storage and off-peak discharge from each of these systems could be used to manage potential capacity constraints if required.
- 12 Overall, I consider that there are a range of feasible options that would enable the proposed rezoning and future Site development to be serviced from a wastewater and water supply perspective. Further investigation will be done in the next month, with the findings filed as part of supplementary evidence in due course to provide greater certainty on each of the options identified above.

THE RECEIVING ENVIRONMENT

- 13 The Site is legally described as Lot 6 DP 2038 (2 Ashworths Road) and Lot 8 DP 314202 (9 Achens Road). It is approximately 74 hectares in area, currently zoned rural and located on the northern outskirts of the township of Mandeville North in North Canterbury.
- 14 An existing subdivision consent granted October 2020 provides for a 20-lot subdivision of the Site to 4 ha lots (RC205106 and RC205107 refer Attachment 2).
- 15 The Site Description is broadly summarised as below:
- (a) *Location and surrounds:* the Site is currently grazed, cropped and irrigated with surrounding land uses including rural production land, rural residential and residential;
- (b) *Topography:* the Site is generally flat falling to the east/south east.
- (c) *Site soils and Geology:* the site typically comprises a thin layer of surficial silt material, overlying natural sandy gravels.

- (d) *Surface Water*: The Site has several water courses and springs within or surrounding it as described in the ES Services Report and Mr Delagarza's stormwater evidence.
- 16 As outlined in Mr McPherson's geotechnical evidence, groundwater is likely to be around 1 m below ground level (**bgl**).
- 17 The Mandeville area is also subject to groundwater resurgence during high rainfall periods and during periods of prolonged rainfall. This can lead to rising groundwater levels and leaking shallow semi-confining layers.
- 18 The site is currently serviced for irrigation water supply by 2 existing bores onsite: M35/4239 and M35/4238 (**Attachment 3**), with the corresponding resource consent to take water CRC182271 (**Attachment 4**). The total volume of water that can be taken and used under this consent may not exceed 554,750 m³ annually and water is only to be used for irrigation. Whilst CRC182271 to take groundwater for irrigation expires 22 May 2024, an application for renewal was lodged with ECan 28 November 2023.
- 19 Lastly, the Site is located within the Eyre Groundwater Allocation Zone. As of 8 December 2023, Environment Canterbury confirmed via electronic mail that the zone has approximately 97.3 million m³/year allocated out of a limit of 99.07 million m³/year, and that as there are additional consents lodged for processing, the allocation zone is currently considered fully allocated.

THE PROPOSAL

- 20 OFHL is seeking to rezone 2 Ashworths Road from RLZ to LLRZ in the pWDP, with future development subject to an outline development plan (ODP) (Figure 1). The rezoning would enable development of the Site to a minimum allotment area of 2,500m², with an average allotment area of 5,000m².

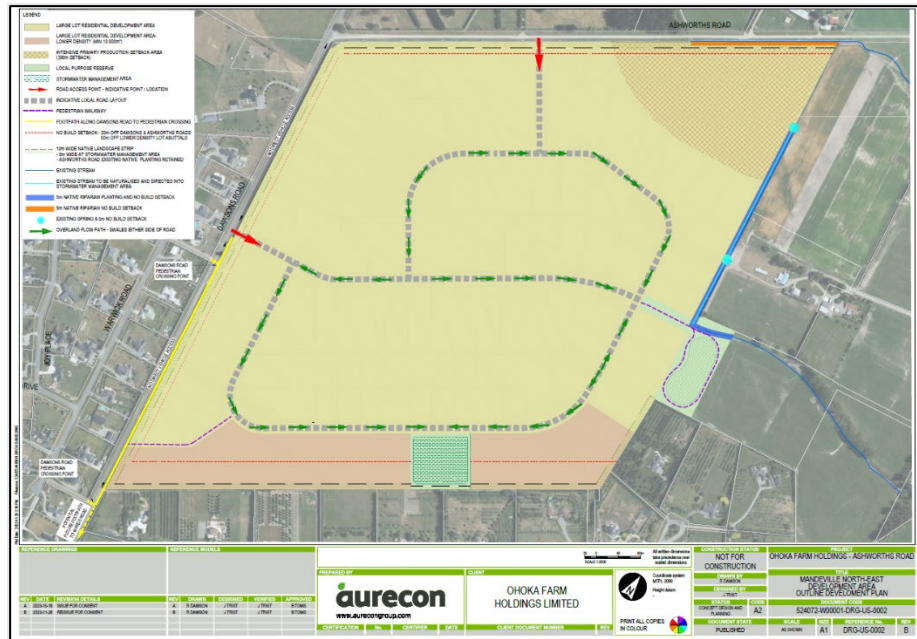


Figure 1. Outline Development Plan

21 An Indicative Concept Lot layout plan has been prepared to illustrate LLR zone-enabled development of the Site (Figure 2), which shows an approximate yield of 115 lots / dwellings. I have used this indicative layout and yield to inform my servicing assessment.

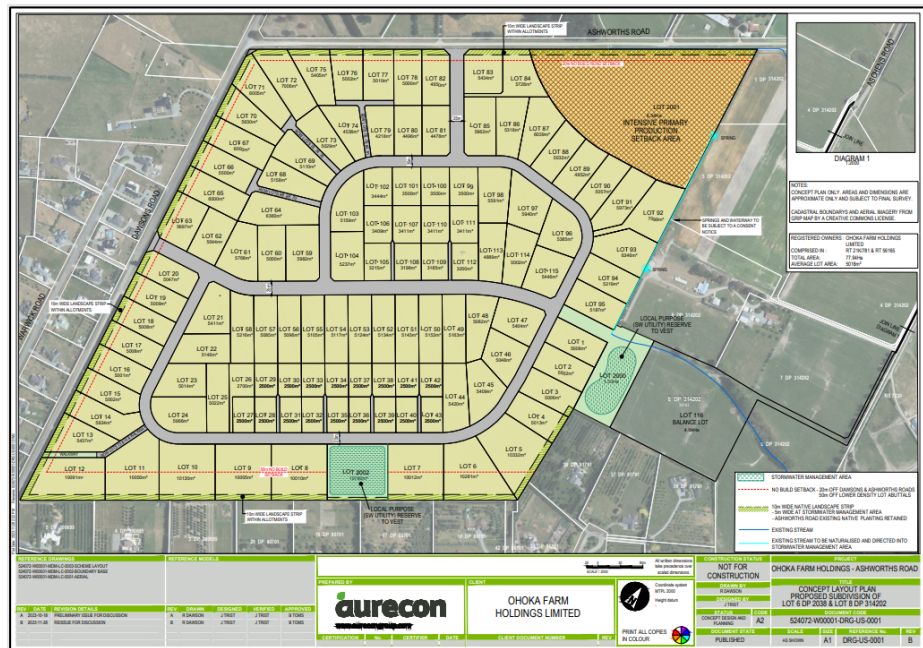


Figure 2. Indicative Concept Lot Layout Plan

WORK COMPLETED TO DATE

22 I understand the following work has been undertaken prior to my involvement with OFHL's submission.

- (a) Modelling of the Wastewater Network: I understand that Beca undertook modelling of the wastewater network in the vicinity of the Site and confirmed that there is capacity for the development of the Site. I am yet to see the outcomes of this modelling.
- (b) A Services Report (**the ES Report**) was prepared by Elliot Sinclair in July 2021 to support the submitters submission on the pWDP seeking the rezoning of the property. This can be broadly summarised as providing commentary on the servicing requirements for earthworks, roading, the existing water race, stormwater (including flood management), wastewater, water supply and utility services. Specifically in relation to water supply and wastewater I note the following:
- i. *Water Supply:* the report identifies that there is no potable water supply to the site but there are two consented irrigation wells. Two options are identified (connection to the Council water supply scheme or the establishment of a new onsite community supply scheme) for providing water supply to a rezoned Site and future LLR development.
 - ii. *Wastewater:* the report identifies that the site lies outside, but adjacent to, the Mandeville Wastewater Scheme. It outlines that additional wastewater modelling is required to confirm wastewater servicing options for the Site but suggests that either a (Septic Tank Effluent Pumping) STEP or Low Pressure Sewer (LPS) system would be appropriate.
- (c) WDC produced a Memo (Attachment 1) in November 2021¹ updating the Mandeville area wastewater model to understand what the impact of rezoning the Ohoka Utilities and Ohoka Downs areas as large lot residential would be.

¹ Mandeville Wastewater Modelling – Rezoning Ohoka Utilities Area SEW-03-20-06/211124188129, dated 24 November 2021

CORRESPONDENCE ON SERVICING OF THE SITE

- 23 The following summarised correspondence with WDC and ECan prior to my involvement with OFHL's submission:
- (a) Correspondence from WDC via email (10 November 2023)² which outlined:
 - (i) The wastewater system does not have capacity to support development of the size proposed. Private Plan Change 31 PC31 by Rolleston Industrial Developments Limited was not included in wastewater modelling undertaken by WDC and there is no capacity for a development of that scale either.
 - (ii) There is some limited short-term capacity, but this is intended to service the existing areas of Mandeville. Any additional growth needs to install servicing/upgrades.
 - (iii) In terms of water, WDC growth modelling assumed this location would develop in the next 3 years but only as 4ha lots.
 - (b) Correspondence from WDC via email (16 November 2023)³ which outlined:
 - (iv) The Mandeville-Ohoka wastewater scheme services the surrounding rural-residential and residential zoned properties in Mandeville and Ohoka. The wastewater is conveyed to the Rangiora WWTP for treatment before being discharged to the Ocean Outfall;
 - (v) WDC would be unlikely to accept additional STEP connections in this area. If the Site was serviced by a LPS system this would not require any additional pre-treatment.

² Correspondence from Jennifer McSloy 10 November 2023 via email regarding water and wastewater servicing of the site.

³ Correspondence from Jennifer McSloy 16 November 2023 via email regarding water and wastewater servicing of the site.

(vi) WDC advised it would not be possible to connect a LPS system into the STEP reticulation. The STEP connections would need to be converted over to LPS or the connection be made downstream of the Bradleys Road pumpstation (which is LPS system from that point downstream)

(c) WDC would not provide specific feedback relating to servicing options of the Site without specific evidence to outline the feasibility of each option (WDC would respond to rezoning evidence following submission as part of the pWDP).

24 Correspondence with Environment Canterbury Regional Council (ECan) has outlined potential water and wastewater servicing options for the Site. ECan advised a pre-application meeting would be required to discuss any option in further detail.

25 Further correspondence and discussion will occur with both WDC and ECan in the next month in relation to the servicing options identified below.

WATER SERVICING ASSESSMENT

26 My assessment of water servicing for the Site as a large lot residential development is structured as follows:

- a) The existing water supply provision for the Site;
- b) The water supply provision for the approved 20 rural lot subdivision;
- c) Water supply demand considerations for the proposed large lot residential rezoning and subsequent development; and
- d) Water supply servicing options.

Existing Water Supply Provision for the Site

27 The Site is not currently serviced for water supply by the WDC water supply infrastructure network. Additionally, the development Site is located adjacent to the Mandeville-Fernside Water Supply Scheme which is a restricted rural water supply scheme supplying connected properties with 2,000L/day and has limited firefighting capacity. I will engage further with WDC to understand their Mandeville-Fernside Water Supply Scheme and considerations for LLR Zone-enabled development

Water Supply Provision for the approved 20 rural lot subdivision

28 Subdivision consent (RC205106 and RC205107) approved for the Site (refer Attachment 2) grants approval for the provision of water supply to service 20 4ha lots from the restricted WDC Ohoka water supply network with the proviso that 20 m³ onsite storage be provided for each lot prior to the granting of building consent.

Water Supply Demand Considerations

29 There are two demand considerations that need to be considered for the servicing of the Site for Large Lot Residential development, with a future yield of approximately 115 lots. These are discussed below but summarised as:

- a) Onsite Demand; and
- b) Fire Fighting Flow and Pressure Requirements

30 I have quantified water on site demand for a proposed development yield of 115 lots as indicated in Table 1 below which excludes provision for firefighting. This has been based on allocating the minimum requirement of 2 m³/day/lot (0.023 l/s/lot) in accordance with the WDC restricted water supply limits⁴. This results in requirement of 2.66 L/s for the overall site.

Table 1. Water Supply Demand for the Site on a Restricted Water Supply Scheme

Description	Area (ha)	No. of Dwellings	Flow per lot (m ³ /day)	Flowrate (L/s)
Section 1 – Lot 1 to 20	14.2376	20	2	0.4630
Section 2 – Lot 21 to 47	9.3040	27	2	0.6250
Section 3 – Lot 48 to 58	5.6418	11	2	0.2546
Section 4 – Lot 59 to 82	8.8999	16	2	0.3704
Section 5 – Lot 64 to 81	3.9385	8	2	0.1852
Section 6 – Lot 96 to 111	4.9661	12	2	0.2778
Section 7 – Lot 104 to 115	3.3372	8	2	0.1852
Section 8 – Lot 83 to 95	7.3345	13	2	0.3009
Totals	57.6596	115	-	2.6620

⁴ WDC Engineering Code of Practice, Part 7: Water Supply, clause 7.5.4

- 31 Fire protection for the development will need to be provided in accordance with SNZ PAS 4505 - New Zealand Fire Service Firefighting Water Supplies Code of Practice and the WDC Engineering Code of Practice, Part 7: Water Supply. This will necessitate engaging with FENZ and ensuring they are comfortable with the proposal and that adequate provision is made for LLR Zone-enabled development.
- 32 The storage requirements would be in accordance with Table 2 below, which will again be subject to discussion with FENZ.

Table 2. Firefighting Storage Requirements

Storage Requirements to meet 3 hours supply m³	270
Fire Water Classification	FW2
Required Flow (L/min)	750
No. of hydrants	2
Total Flow Required (L/min)	1500
Duration (mins)	180
Total Flow Required (m ³ for 3 hours)	270
Storage Hours Requirements	48
Dwelling Safety Factor	1
Dwelling	2.7

Water Supply Servicing Options and Considerations

- 33 The ES Services Report identifies two potential water supply options for servicing the Site. I have also identified a third.

Connection to the WDC Mandeville-Fernside Rural Restricted Water Supply Scheme

- 34 The Site and future LLR development could be serviced via the WDC owned Mandeville-Fernside Rural Restricted Water Supply Scheme. Connection would be to the existing DN63 MDPE pipe to the west of the site on Dawsons Road. A new pipe reticulation system (DN63 MDPE or similar) would be installed within the development, with a restrictor fitted at each lot to restrict the flow to each landowner but maintain even distribution over 24 hour period (limiting daily water allocation to 2m³ via a continuous trickle supply and meaning the total flow demand for the 115 lots would be a maximum of 2.66 litres/sec at any time).
- 35 A connection into the existing DN150 MDPE located approximately 1.5 kilometres south of the Site at the corner of Tram Road and Bradley Road

provides a further option to connect to the WDC Water Supply Scheme. If there was a wider benefit of extending the larger main, there may be opportunity for cost sharing with WDC.

Establishment of a new community water supply scheme onsite

- 36 A second option would be to service the proposed development with groundwater with treatment to provide nitrate nitrogen reduction. This approach would effectively establish a new community water supply scheme onsite with the infrastructure for extraction, treatment, and conveyance of water to each of the proposed development dwellings. The source of water supply for this scheme would be from the existing wells (which currently have consent to take/use groundwater for the purpose of irrigation (CRC182271).
- 37 RC182271 authorises a total of 46 litres per second and an overall annual volume of 554,750 cubic metres. In contrast the establishment of a new water supply scheme onsite would require 2.66L/s (229,824 cubic metres), as outlined in Table 1.
- 38 This option would likely require the existing bores to be relocated to be more centrally located within the Site. As the existing concentration of nitrate nitrogen in the groundwater in the proximity of the development site is elevated, new bores would be required to be sunk to a depth that ensures that nitrate nitrogen levels meet the requirements of Tuamata Arowai (the new national water servicers regulator).
- 39 CRC182271 is due to expire 22 May 2024, but an application for renewal has been lodged with ECan. As the consent is for the purpose of taking water for irrigation, not for drinking water, this approach would require the existing groundwater take consent CRC182271 to be surrendered or transferred to a new consent for the purposes of drinking water. The transfer of the existing groundwater take would require the surrender of a portion of the existing allocation given the Site is within an over allocated groundwater zone. High level calculations shown in Table 1 indicate that even if a reduction in take imposed on bore M35/4238 (over the consented take), the reduced groundwater take would be able to meet the water supply servicing requirements of the proposed development.
- 40 The Supreme Court decision 20 November 2023 upheld the Court of Appeal's ruling that ECan decisions to approve a change in the consented use of water

to enable water bottling (without consideration of the 'taking' of water at the same time) was unlawful. As a result, there is no ability to transfer or change use of an existing water consent for a different use without also effectively reapplying for the consented take (for the new use) at the same time. ECan are yet to provide formal guidance as to any implications (if any) that this may have for the transfer of water permits to drinking water.

41 Regardless, Policies 4.49 and 4.50 of the Canterbury Land and Water Regional Plan (CLWRP) allow a pathway for the allocation of groundwater for community supply purposes even where the groundwater allocation limit is exceeded for the applicable allocation zone, with Rule 5.115 of the CLWRP provides for the take and use of water for a community water supply⁶ from groundwater as a restricted discretionary activity.

42 This option requires further discussion with ECan that they would be agreeable to the transfer of the water take from onsite farming use and irrigation to drinking water.

43 The new community water supply scheme could be either Council owned and operated, or privately owned and operated.

Transfer of Existing Consent to WDC

44 A third approach would be to transfer the existing CRC182271 consent to take groundwater to WDC in exchange for the development to be serviced for water supply from WDC water supply infrastructure network. As with the above approach, given the Eyre Groundwater Allocation Zone is overallocated, it is expected that a portion of the existing consented allocation would be required to be sacrificed and consent would need to be sought for a change in use (irrigation purposes to drinking water).

Firefighting Provision

45 Two options are considered appropriate to meet firefighting demand for the Site:

- a. Fire water supply can be combined with the potable reticulated council supply and fire hydrant provision; or
- b. Individual storage tanks located on every lot.

46 A third option would be the provision of a separate water line established as part of the development for firefighting only. Fire hydrants could meet

firefighting demand supplied from an onsite storage reservoir with water sourced from the existing wells. Groundwater extracted for firefighting purposes can be untreated and is not required to be subject to any Nitrate Nitrogen removal, Permanent signs would need to indicate that this water was for firefighting purposes only. The storage tank would be required to be sized to meet storage requirements for a reticulated system of three hours minimum giving a volume of 270 m³ (in accordance with the NZ PAS 4509:2008 Firefighting Water Supplies Code of Practice and the WDC Code of Practice) .

Summary of Water Supply Servicing Considerations

- 47 In summary, if a restricted supply with on-site firewater storage on each site is proposed, then the peak flow demand for water would be minimal. There are two potential connection points to the WDC Mandeville-Fernside Rural Restricted Water Supply Scheme (the nearby DN63 on Dawsons Road and a DN150 further away), indicating that solutions to provide 2.7l/s of demand to the Site are likely to be available.
- 48 Additional investigations and correspondence with WDC in the next month will help better refine the water supply servicing options for the Site.

WASTEWATER SERVICING ASSESSMENT

- 49 My assessment of water servicing for the Site as a large lot residential development is structured as follows:
- a) The existing wastewater supply provision for the Site;
 - b) The wastewater supply provision for the approved 20 rural lot subdivision;
 - c) Wastewater supply demand considerations for the proposed large lot residential rezoning and subsequent development; and
 - d) Wastewater supply servicing options and considerations.

Existing Wastewater Supply Provision for the Site

- 50 The ES Services Report confirms the Site is not currently serviced by the WDC wastewater network.
- 51 The Site is located adjacent to the existing Mandeville Wastewater Scheme that consists of a STEP system whereby raw sewerage is collected and stored

onsite in privately owned septic tanks. The sewerage is then conveyed from private sites to the Bradleys Road Pumpstation where it is then pumped to the Rangiora Wastewater Treatment Plant (**RWWTP**) for treatment.

52 Figure 3 provides an overview of the existing wastewater infrastructure in the vicinity of the Site.

53 There are no existing wastewater lines available at the perimeter of the Site, with the closest possible points of connection are the DN180 pressure main on Dawsons Road or the Bradley's Road pumpstation.

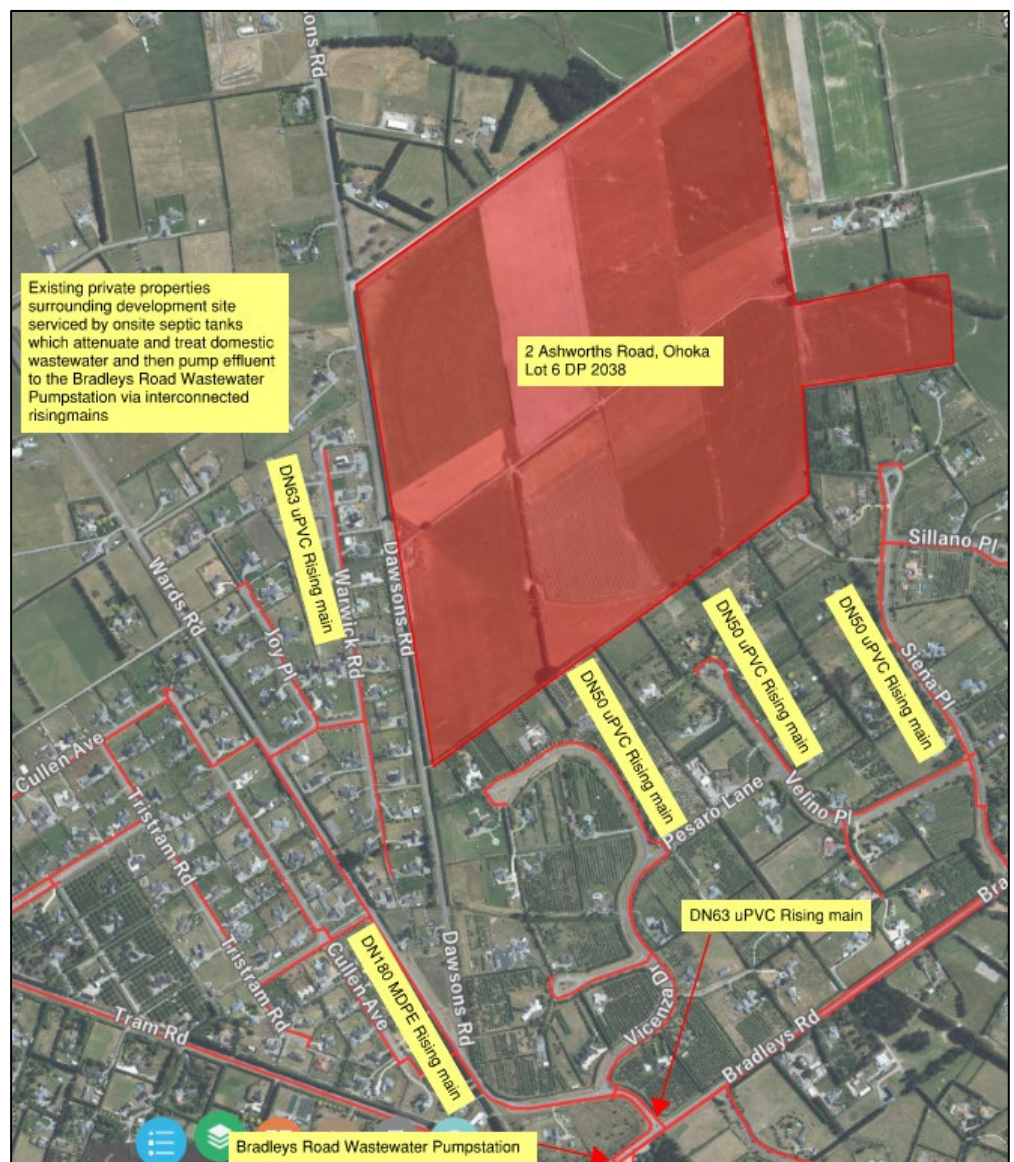


Figure 3. Existing Wastewater Infrastructure in the vicinity of the site Ref.: WDC 3 Waters Utilities, 2023)

- 54 A WDC Memo dated 24 November 2021⁵ on the Mandeville Wastewater Modelling – Rezoning Ohoka Utilities Area outlined that the Mandeville wastewater model was updated assuming that the Ohoka Utilities and Ohoka Downs areas rezoned as large lot residential areas. In the Mandeville – Ohoka Scheme 286 lots were added based on maximum allowable intensification under large lot residential zoning and provisions in the pWDP and Inflow and Infiltration was set to match code of practice levels. It was found that the current network could not meet a 1 in 5-year level of service with this intensification.
- 55 The Memo outlined two approaches for upgrades to the Mandeville – Ohoka Scheme:
- a) The Mandeville Ohoka Scheme is kept as a STEP system with the internal reticulation upgraded and the Bradleys Rd pumping station upgraded to be able to deliver 30 l/s at 100 m; or
 - b) This area is changed to a LPS system with some internal reticulation upgrades but without an upgrade to the Bradleys Rd pumping station.

Wastewater supply provision for the approved 20 rural lot subdivision

- 56 Subdivision consent was granted October 2020 authorising the subdivision of the Site to create 20 4ha lots (RC205106 and RC205107 refer Attachment 1). Consequently, this provides for the wastewater servicing of 20 connections into Council's system (refer Figure 4). The conditions of the subdivision consent note that the wastewater servicing for the 20 lots would be via installation of an onsite LPS into Dawsons and Ward Roads System (LPS) on each individual private lot.

⁵ WDC Memo 'Mandeville Wastewater Modelling – Rezoning Ohoka Utilities Area' File No: SEW-03-20-06/ 211124188129, dated 24 November 2021

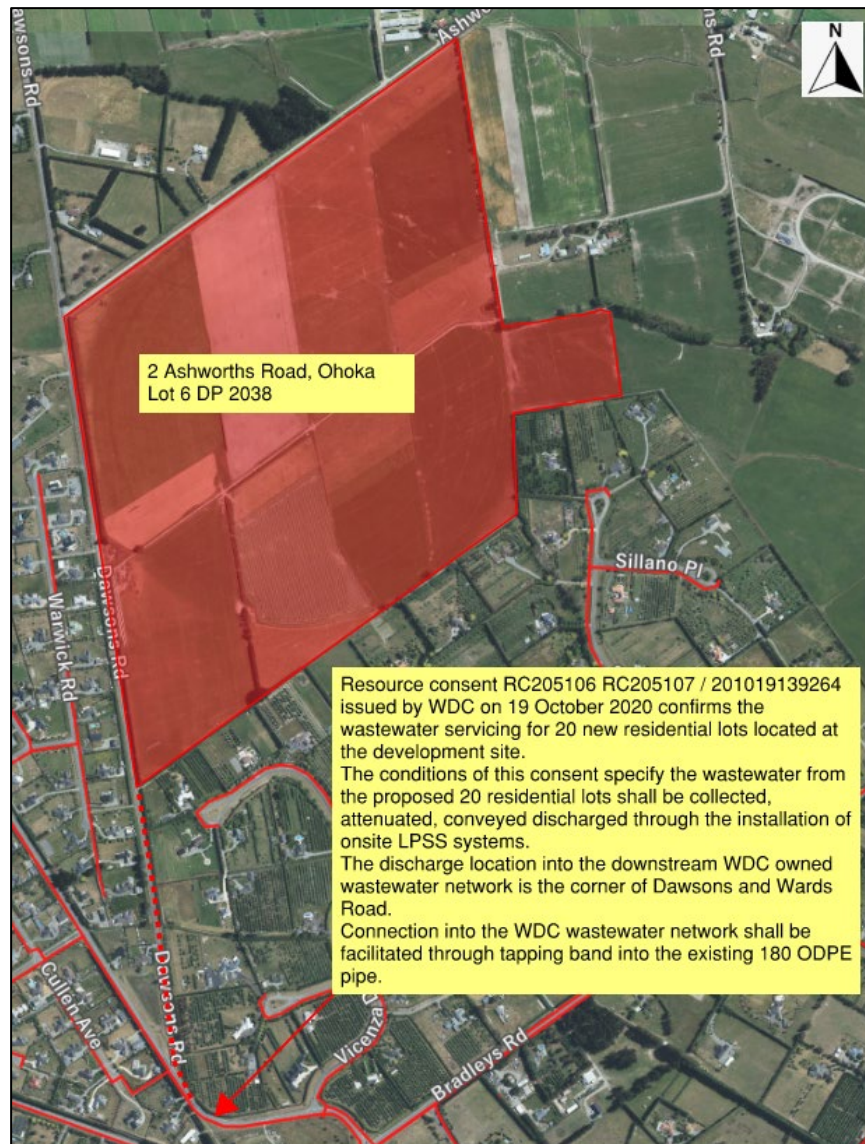


Figure 4. Sketch illustrating the wastewater servicing arrangement under existing Resource Consent RC205106 RC205107 / 201019139264 for the proposed development of 20 residential lots (Ref.: WDC 3 Waters Utilities, 2023)

Wastewater Demand Considerations

- 57 Tables 3 and 4 illustrate the total Peak Wet Weather Flows (PWWF) for wastewater based on a total development yield of 115 LLR lots. Applying the design parameters of the WDC Code of Practice (Section 6.5) of 2.7 persons per lot with daily wastewater quantity allowance per person of 250 litres and a peaking factor for the Peak Dry Weather Flow and Peak Wet Weather Flow of 2.5 and 3.2 respectively, the resultant quantity of PWWF for the Site would be 621 kilolitres per day or 7.2 litres per second.

Table 3. Wastewater flow calculation for proposed development.

Description	Area (ha)	No. of Lots	Average Dry Weather Flow ADWF (m ³ /day)	Peak Dry Weather Flow PDWF (m ³ /day)	Peak Wet Weather Flow PWWF (m ³ /day)
Section 1	14.2376	20	13.5	33.75	108.00
Section 2	9.3040	27	18.23	45.56	145.80
Section 3	5.6418	11	7.43	18.56	59.40
Section 4	8.8999	16	10.80	27.00	86.40
Section 5	3.9385	8	5.40	13.50	43.20
Section 6	4.9661	12	8.10	20.25	64.80
Section 7	3.3372	8	5.40	13.50	43.20
Section 8	7.3345	13	8.78	21.94	70.20
Totals	57.6596	115	77.63	194.06	621.00

Table 4. Global factors for wastewater calculations

Description	Quantity	Unit
Factor of Safety Dwellings	1	-
Q Residential	250	L/person/day
Density	2.7	person/lot
Dry Weather Peaking Factor	2.5	-
Wet Weather Peaking Factor	3.2	-

Wastewater Servicing Considerations

58 With reference to the ES Services Report, two options were identified for wastewater supply servicing for the Site. I have also identified a third option.

Gravity collection wastewater network to WDC network

59 The first option would service the proposed development through provision of a gravity collection wastewater network which conveys and discharges the development wastewater flows into the downstream WDC owned wastewater network. There may also be the option to consider inclusion of SCADA controlled in-line storage and network interlocking which would provide WDC the ability to remotely control the storage and the downstream discharge into

the WDC owned wastewater network. Consequently, development flows can be held back should this network be constrained and then released when this constraint has eased. Whilst not an approach previously used in the Waimakariri District this is a solution used elsewhere, including Queenstown Lakes District (Coneburn development).

Gravity collection wastewater network to an on-site pump station and then WDC network

- 60 The second option would service the proposed development through provision of a gravity collection wastewater network which collects, conveys, and discharges the development wastewater into an on-site pump station. From this pump station, wastewater would then be pumped from the development to the downstream WDC owned wastewater network.
- 61 The development pump station would need to include an onsite storage chamber and odour treatment. Odour treatment and corrosion protection would also need to be provided at the location of the downstream discharge into the WDC owned and vested wastewater network.
- 62 This approach would provide WDC with the ability to remotely control through SCADA the onsite storage and downstream discharge into the WDC owned wastewater network. Consequently, development flows could be held back when this network is constrained and then released when this constraint has eased thereby not exacerbating the downstream network constraints.

Low Pressure Sewer System

- 63 This option would involve the provision of an onsite LPS system (comprising a pump and storage chamber with a storage capacity of 24 to 48 hours), which collects, attenuates and discharges (during off peak times if necessary) into the WDC owned wastewater network. Future lot owners would be required to install the required onsite wastewater reticulation on their individual lots to effectively capture domestic wastewater discharge. This onsite infrastructure would include the boundary kit which consists of an isolating valve, non-return valve and inspection tee onsite pump and storage tank. The collected wastewater would be conveyed to a new pressure sewer main located in the road reserve via the boundary kit located at the boundary of each connected development lot. The pressure sewer main would then convey the wastewater

and discharge to the WDC owned wastewater network at Dawsons Road or directly to the Bradleys Road pump station.

64 Ongoing operation and maintenance of the infrastructure installed on the private lots would be the responsibility of the individual lot owners. Ongoing operation and maintenance of the infrastructure located in road reserve would be the responsibility of WDC.

65 WDC could remotely control the onsite storage and pump sets to control when the flows can be discharged into the downstream WDC owned wastewater network. The benefit of this approach is that it would give WDC control over development flows by attenuating in onsite storage chambers. This approach is routinely implemented by Christchurch City in their LPS catchments.

Summary of Wastewater Supply Servicing Considerations

66 Overall, I consider that wastewater servicing for LLR Zone-enabled development of the Site is viable by connecting into individual households into a LPS System or an on-site pump station at the development, and construction of a rising main for approximately 1.8 kilometres to the Bradleys Road pumpstation.

ADDITIONAL CONSIDERATIONS

67 Based on my experience I have identified several options for both the water and wastewater servicing of the Site. Further work will be undertaken in the next month and shared as a technical report with Council (and filed as supplementary evidence in due course) to further refine the appropriateness of each option.

CONCLUSION

68 Overall, I conclude that there are several water and wastewater servicing options available to service the Site to enable development in accordance with the LLR Zone. Whilst not located within the MGB, options are available to service the Site with water and wastewater without adverse effects on the receiving environment or operation of the existing WDC infrastructure system.

69 In summary, I conclude that:

- a) The additional water demand potentially generated by LLR development of the Site is 2.66 litres per second or 230 000 litres per day. This can be serviced through connection into the WDC owned Mandeville-Fernside Water Supply Scheme via connection into the existing DN63 MDPE pipe to the west of the site on Dawsons Road.
- b) The additional wastewater demand potentially created by future LLR development of the Site would be 7.2 litres per second or 621 000 litres per day for the Peak Wet Weather Flow condition whereas the Peak Dry Weather Flows accounts for 2.25 litres per second or 194 000 litres per day. I have identified three options to serve the additional wastewater generated.

70 Overall, whilst further work will refine the options presented in my evidence, I consider the requested rezoning appropriate from a water and wastewater servicing perspective.

71 Thank you for the opportunity to present my evidence.

Danash Sookdev

5 March 2024

ATTACHMENT 1:

**WDC MEMO, 'MANDEVILLE WASTEWATER MODELLING – REZONING
OHOKA UTILITIES AREA' FILE NO: SEW-03-20-06/ 211124188129, 24
NOVEMBER 2021**

WAIMAKARIRI DISTRICT COUNCIL

MEMO

FILE NO AND TRIM NO: SEW-03-20-06/ 211124188129

DATE: 24 November 2021

MEMO TO: Kalley Simpson, 3 Waters Manager

FROM: Alex Meredith

SUBJECT: Mandeville Wastewater Modelling – Rezoning Ohoka Utilities Area

1. Summary and Recommendations

This study updated the Mandeville area wastewater model to understand what the impact of rezoning the Ohoka Utilities and Ohoka Downs areas as large lot residential would be. Results show that a 1 in 5 year level of service cannot be achieved in the current network with this intensification. Two options were considered to allow the network to meet a 1 in 5 year level of service:

1. Retaining and upgrading the existing STEP system by making both reticulation upgrades and an upgrade to the Bradleys Rd pumping station to improve level of service
2. Replacing the STEP system in Ohoka Utilities and Ohoka Downs with a new LPSS system (E/One or equivalent), together with some reticulation upgrades but without the need for an upgrade to the Bradleys Rd pumping station

Based on these options some conclusions were made

- More reticulation upgrades may be required if the STEP system was retained but as the pressure class of the current reticulation is unknown it is possible the full reticulation would need to be upgraded for a LPSS system
- A LPSS system would have a lower operational cost but the up-front cost would be greater to retrofit the system
- The STEP system upgrades could be carried out over time as growth occurs where many of the LPSS upgrades would be required all at once when the system is converted
- Both options would allow the 1 in 5 year level of service is currently being achieved.

It is recommended that:

- The 3 Waters Manager receives this report
- This report be considered in decision making around the zoning of the Ohoka Utilities and Ohoka Downs areas
- If these areas are rezoned large lot residential then the two options proposed should be considered further including a net present value calculation to understand financial viability

2. Background

The Mandeville Area Wastewater Scheme is primarily a Septic Tank Effluent Pumping (STEP) system which mostly services Large Lot Residential and Settlement Zones in Mandeville, Swannanoa and Ohoka. A model of the current state of this scheme was completed in August 2021 (TRIM 210813133061) and this was updated to take into account growth under the current District Plan (TRIM 210908143533) and the proposed district plan (TRIM 211115181977). This model shows that the scheme currently meets at least a 1 in 5 year level of service with full

development without any tanks overflowing and that the critical event has a 48 hour duration. However, it does not meet a 1 in 50 year level of service.

The Ohoka Utilities Area, which is serviced by the Mandeville STEP system, is currently zoned rural lifestyle and is adjacent to the large lot residential areas in Mandeville. Landowners in this area have questioned whether they could be rezoned as large lot residential as this would allow them to subdivide down to significantly smaller lot sizes. The adjacent Ohoka Downs subdivision has also been considered for further development in this study. It is believed that the rezoning of these areas could potentially have a large impact on the wastewater network. The scope of this work is therefore to update the model to account for this potential growth and undertake a system performance analysis on the updated model, determining whether any upgrades would be required in order to service this growth.

3. Model Update

3.1. Additional Lots Zoning

Additional lots were added in the Ohoka Utilities and Ohoka Downs areas to the future, fully developed model based on maximum lot yield under the large lot residential subdivision rules in the proposed district plan. A comparison of minimum and average parcel sizes between large lot residential and rural lifestyle zones are shown in Table 1. This shows that lots could be up to eight times smaller under large lot residential zoning. It is unlikely any new lots could be developed under the proposed rural lifestyle zoning as most lots in this area are already smaller than the minimum lot size under these subdivision rules.

Figure 1 shows the current zoning under the proposed district plan with a dashed line outlining the area considered in this study.

Table 1: Minimum and Average Allotment Sizes under Proposed District Plan

Zone	Minimum Allotment Size (m²)	Minimum Average Allotment Size within Subdivision (m³)
Large Lot Residential	2,500	5,000
Rural Lifestyle	40,000	40,000

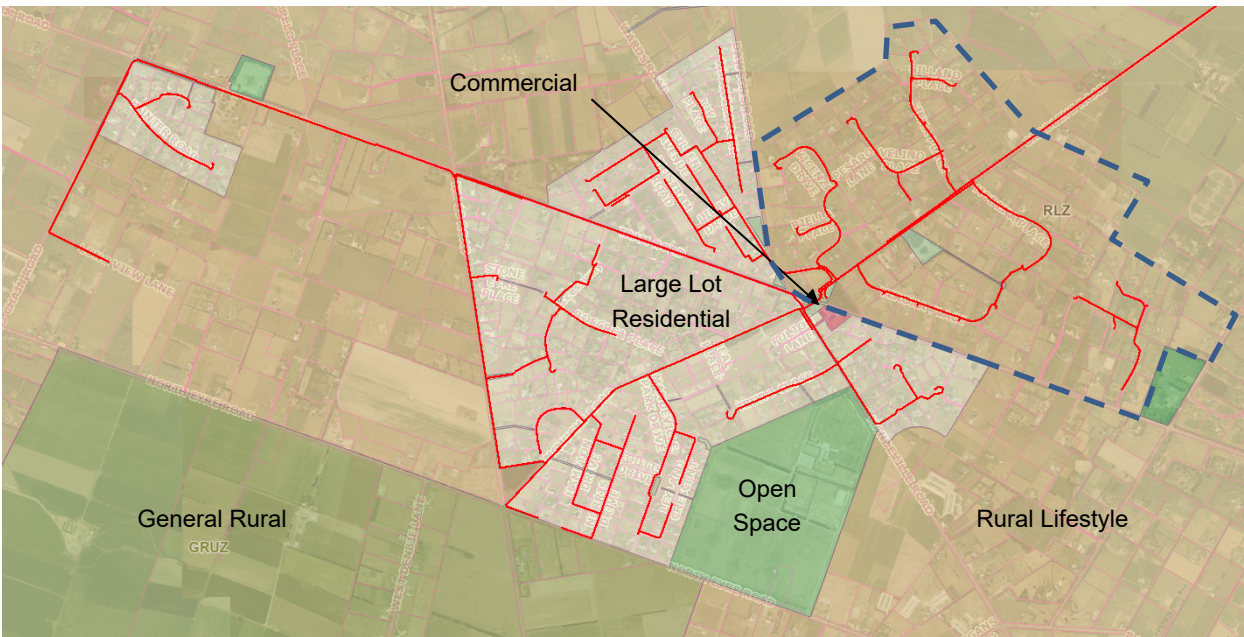


Figure 1: Swannanoa and Mandeville Land Zones under Proposed District Plan

3.2. Additional Lots Summary

Table 2 summarises the additional lots added to produce the new development model. On average each lot in this area could be divided into approximately 3, though this was calculated on a lot by lot basis. Wet weather flow loads for the additional lots were added to match those present in the western catchments in the Rangiora future model as outlined in the previous future Mandeville model build report.

Table 2: Additional lots added for future development model

Area (Previous zoning)		Existing Lots	Future Lots under Proposed District Plan	Additional Lots	Total Lots with Ohoka Utilities Intensification
Mandeville Area	Swannanoa Large Lot Residential	29	44	0	44
	Mandeville Large Lot Residential	406	598	0	598
	Rural – Ohoka Utilities & Ohoka Downs	113	136	286	422
	Rural - Other	0	0	0	0
Total Mandeville STEP Sewer		548	778	286	1064
Ohoka Area	Ohoka Settlement	8	94	0	94
	Ohoka Large Lot Residential	10	186	0	183
	Rural	3	3	0	3
Total Ohoka LPS Sewer		21	283	0	283
Total Mandeville-Ohoka Scheme		569	1061	286	1347

4. Results

4.1. System Performance during Critical 1 in 5 Year Event

Figure 2 shows the minimum available freeboard in each tank in a 1 in 5 year, 48 hour rainfall event (where freeboard < 0 shows overflowing tanks). It can be seen that the intensification of this area causes a number of tanks in the Ohoka Utilities Area to begin to overflow and a number more to come close to overflowing in a 1 in 5 year rainfall event.

Figure 3 shows the tank depth with time at Bradleys Rd during the 1 in 5 year, 48 hour rainfall event where the rainfall event is run 4 times as described above. In every event the tank briefly overflows during the event peak. Therefore, the Bradleys Rd pumping station would be undersized for a 1 in 5 year event if the Ohoka Utilities Area became fully developed as a large lot residential zone.

Two different options are considered for upgrades to ensure that the network could meet a 1 in 5 year level of service with the additional development

1. Upgrading the internal reticulation in the Ohoka Utilities area and the Bradleys Rd pumping station, keeping the Ohoka Utilities area as a STEP system
2. Converting the Ohoka Utilities Area to a LPSS system connecting downstream of the Bradleys Rd pumping station

Results from these simulations are shown in the following sections. As a comparison for required pipe upgrades, Figure 4 shows current diameters. It should be noted that the Ohoka Downs connection is assumed as these properties are currently on a private scheme.

4.2. Retaining existing STEP system and upgrading Bradleys Rd Pumping Station

- Figure 5 shows the internal upgrades required to ensure that none of the septic tanks would overflow in a 1 in 5 year rainfall event.
- Alongside these, the Bradleys Rd pumps would need to be upgraded such that they could provide a flow of 30 l/s up to a maximum pressure of 100 m.
 - The rising main is PN12.5 so this pressure would be allowable
- One advantage of this option is that the reticulation upgrades could be staged as growth occurs and that the upgrades would be relatively straightforward
- The downside to this is it retains a large number of step connections which can be more costly to operate long term than LPSS connections and that it would require an upgrade to the Bradleys Rd pumping station

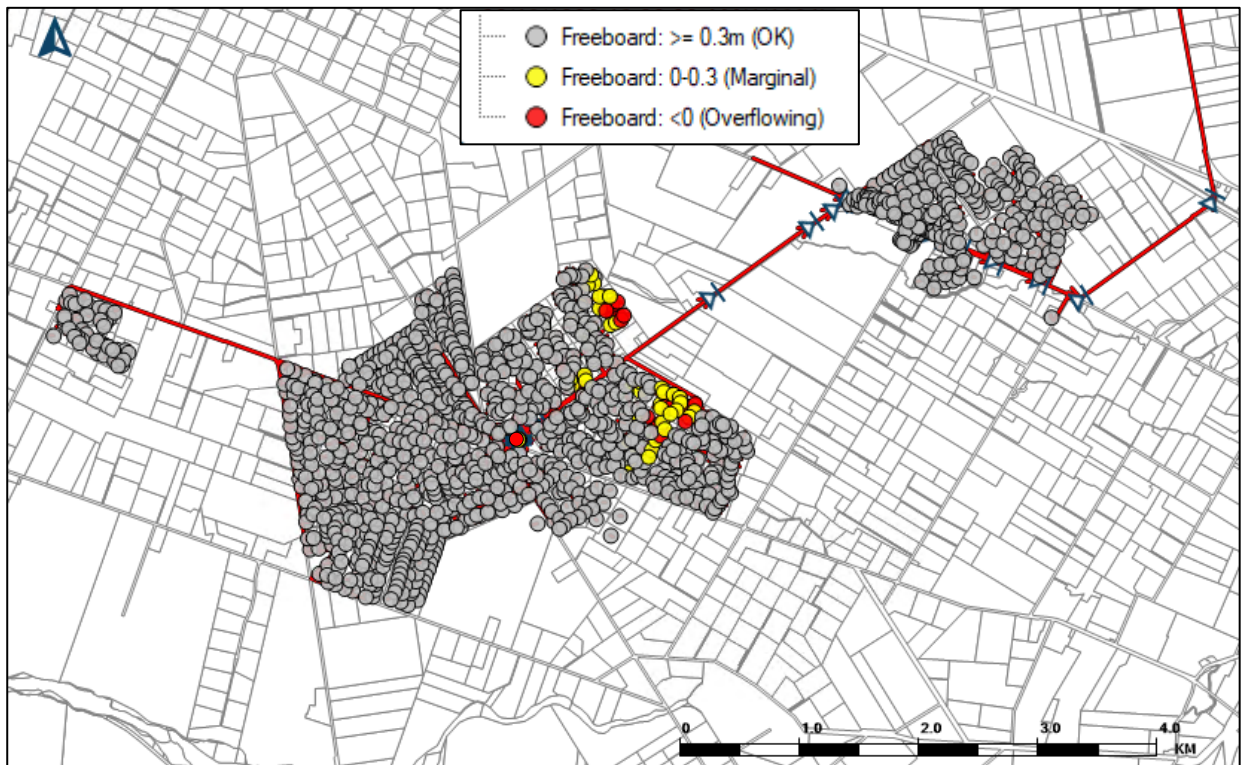


Figure 2: Tank Freeboards in 1 in 5 year, 48 hour rainfall event

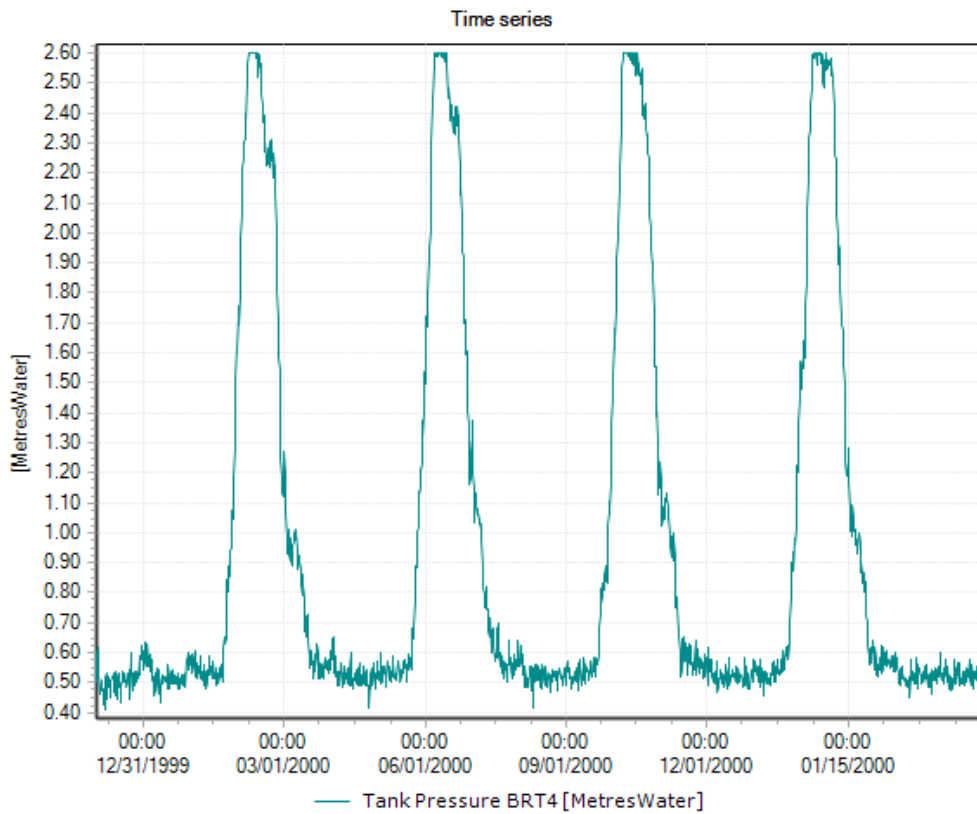


Figure 3: Bradleys Rd tank depth with time during 1 in 5 year, 48 hour rainfall event

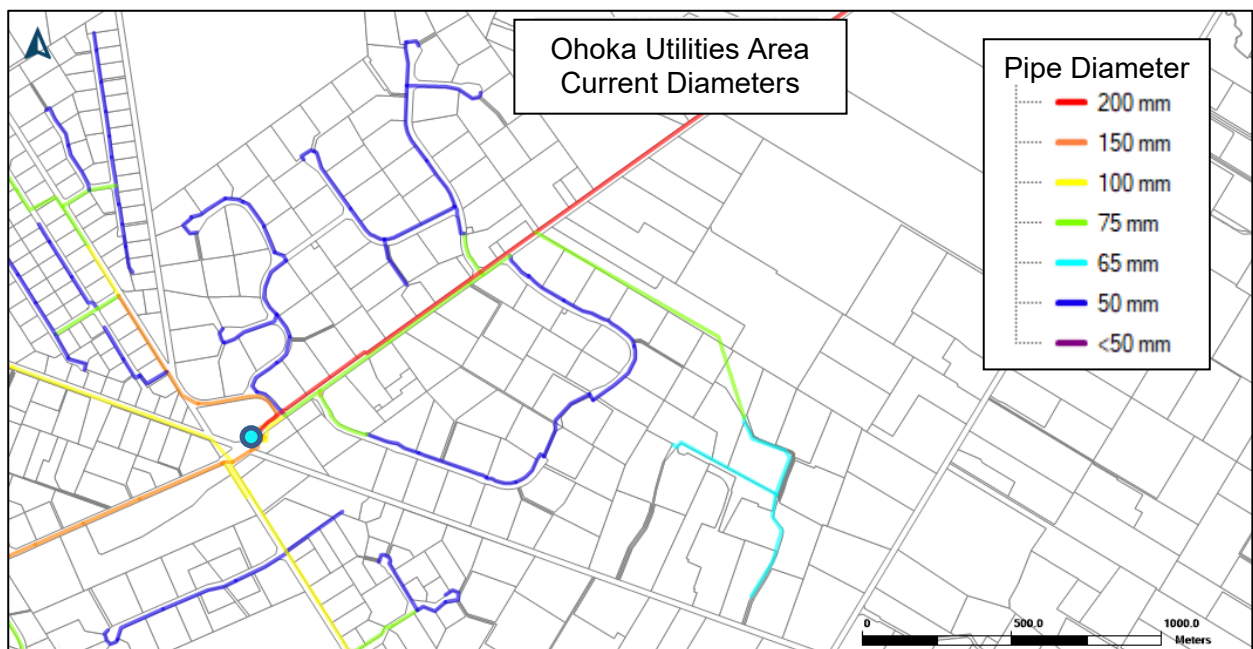


Figure 4: Current Pipe Diameters in Ohoka Utilities Area

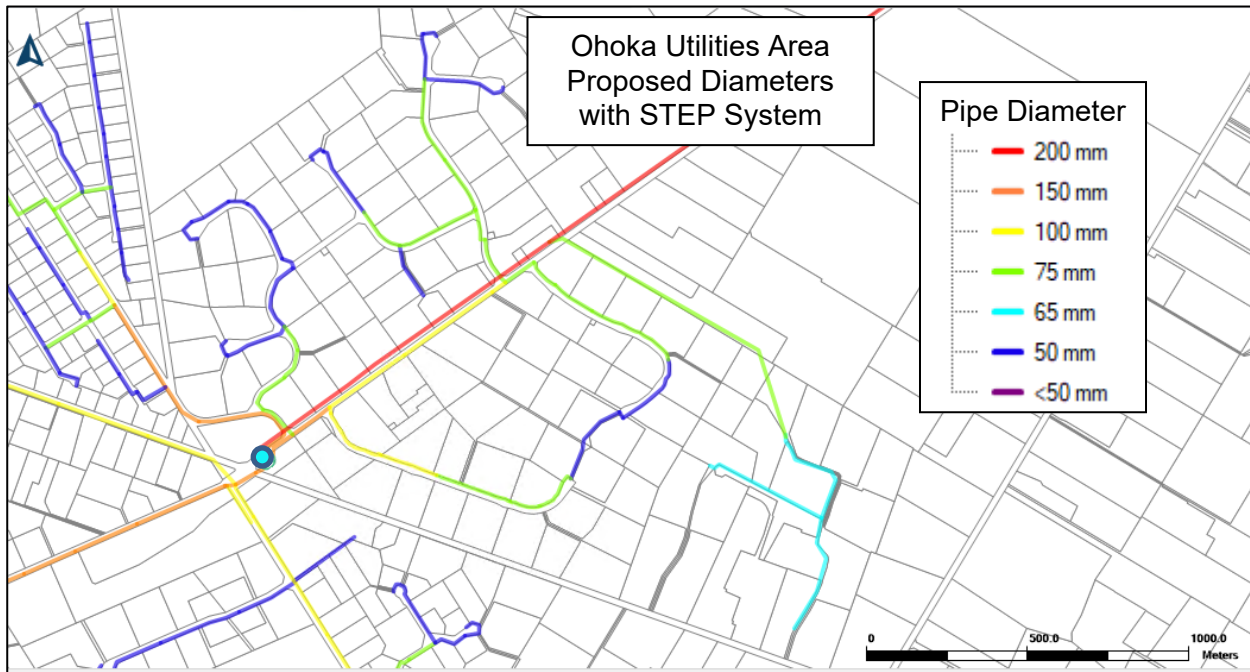


Figure 5: Required Pipe Diameters for Growth of STEP System in Ohoka Utilities Area

4.3. Conversion of Ohoka Utilities Area to LPSS

Modelling showed that even with the Ohoka Utilities Area converted to LPSS and connected to the rising main downstream of the Bradleys Rd pumping station the LPSS pumps would struggle to generate enough pressure to pump into the rising main. Therefore some pipe upgrades would be required. These are shown in Figure 6. Some further considerations are as follows

- The majority of internal pipes in the Ohoka Utilities area are likely to need replacing for this option due to a larger pressure class required for LPSS compared to STEP connections
- The Bradleys Rd pumping station would not need to be upgraded for this option
- This option has the advantage that the number of STEP connections, which can be costly to operate, would be reduced
- The main disadvantage of this option is if the system was to be converted to LPSS a large amount of capital works would need to be done up front

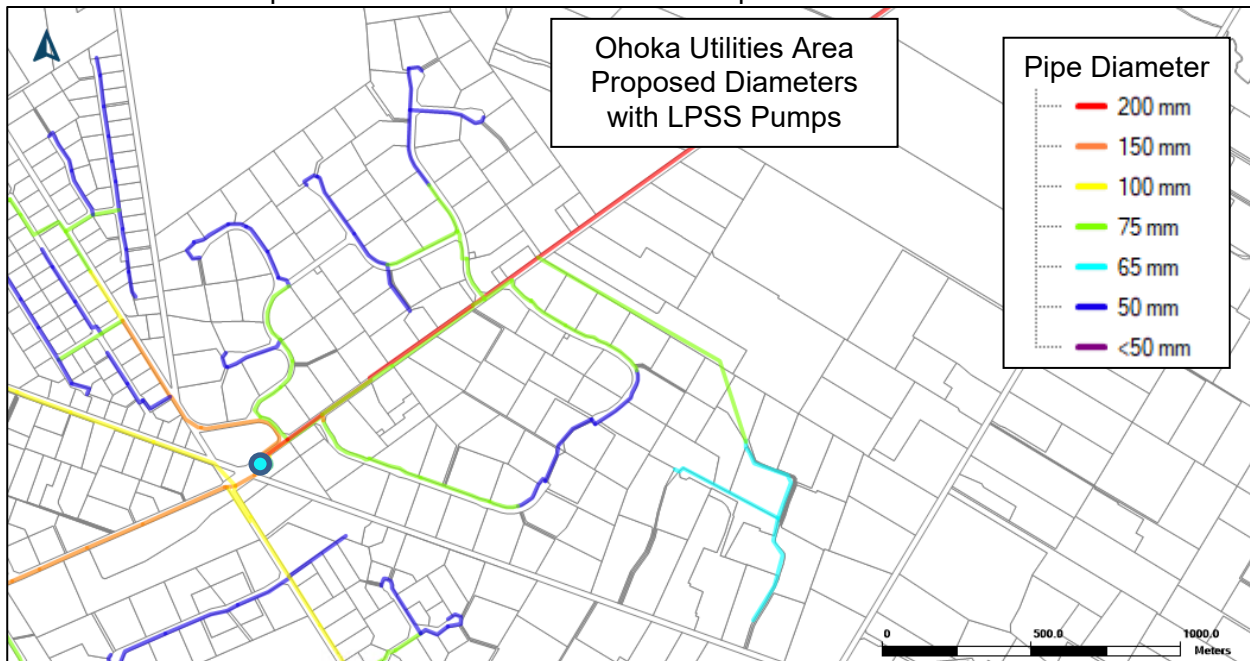


Figure 6: Required Pipe Diameters for LPSS System in Ohoka Utilities Area

5. Conclusions

The Mandeville wastewater model was updated assuming that the Ohoka Utilities and Ohoka Downs areas are rezoned as large lot residential areas. Lots were added based on maximum allowable intensification under large lot residential rules outlined in the proposed plan and I&I was set to approximately match code of practice levels. It was found that the current network could not meet a 1 in 5 year level of service with this intensification.

Two options were presented which would allow the area to meet a 1 in 5 year level of service

1. This area is kept as a STEP system with the internal reticulation upgraded and the Bradleys Rd pumping station upgraded to be able to deliver 30 l/s at 100 m
2. This area is changed to a LPSS system with some internal reticulation upgrades but without an upgrade to the Bradleys Rd pumping station

Some conclusions can be made based on this analysis

- More reticulation upgrades may be required if the STEP system was retained but as the pressure class of the current reticulation is unknown it is possible the full reticulation would need to be upgraded for a LPSS system
- A LPSS system would have a lower operational cost but the up-front cost would be greater to retrofit the system
- The STEP system upgrades could be carried out over time as growth occurs where many of the LPSS upgrades would be required all at once when the system is converted
- Both options would allow the 1 in 5 year level of service is currently being achieved.

ATTACHMENT 2:

20 LOT RURAL SUBDIVISION CONSENT (RC205106 AND RC205107)

Our Reference: RC205106 RC205107 / 201019139264
Valuation Reference: 2174030800

19 October 2020

Ohoka Farm Holdings Limited
C/- Eliot Sinclair & Partners Limited
PO Box 9339
Tower Junction
CHRISTCHURCH 8149

Dear Claire

**DECISION ON RESOURCE CONSENT APPLICATION
OHOKA FARM HOLDINGS LIMITED - 2 ASHWORTH'S ROAD, OHOKA**

Please find enclosed a copy of the decision reached by the Plan Implementation Manager under delegated authority from the Council on the above application.

We also enclose information relating to rights of appeal, lapsing of consent (where applicable), and other legal requirements.

Yours faithfully



Kate Bonifacio
RESOURCE MANAGEMENT PLANNER

Encl

CC
Ohoka Farm Holdings Limited
PO Box 36401
Merivale
Christchurch 8146

WAIMAKARIRI DISTRICT COUNCIL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of an application lodged by **Ohoka Farm Holdings Limited** for a resource consent under Section 88 of the aforementioned Act.

APPLICATION

The applicants sought a resource consent to undertake a twenty allotment rural subdivision of the properties situated at 2 Ashworths Road, 9 and 17 Aschens Road, Mandeville.

Proposed Lots 1 to 20 each meet the minimum area requirement of at least 4 hectares and all allotments will be vacant. All allotments can achieve the minimum 120m x 120m shape factor.

Proposed Lot 21 will be vested as a Local Purpose (Accessway) reserve to provide an opportunity for public pedestrian, cycle and horse riding access between the development and Ashworths Road.

Proposed Lot 22 will be vested as legal road and will provide access to the majority of allotments in the development. A culvert will be required to be installed in order to construct the road over the existing watercourse.

The intersection of Lot 22 will be approximately 650m from the intersection with Ashworths Road. This is short of the 800m spacing that is required by the District Plan.

Lot 23 is 16m² and is proposed to be vested in Council as a legal road as corner rounding on the north western edge of Lot 18 and the existing Ashworths/Dawsons Road intersection.

A duration of 10 years was sought in the original application for both consents. The applicant was advised by Ms Wendy Harris, Resource Consents Team Leader, on 09 October 2020 that case law indicates that extensions of time for longer periods should only be granted where there are exceptional circumstances. There does not appear to be any exceptional circumstances, in this instance. The applicant was also advised by Ms Harris that the District Plan Review will be notified in March 2021, and that an extension of time to 10 years would pre-empt the District Plan Review.

Accordingly, Ms Harris advised the applicant that for the above reasons, Council considers it more appropriate to grant the consent for the standard 5 year period. If the applicant gets near the end of the 5 years and the 223 hasn't been signed, they can apply for an extension of time under Section 125. At this point in time, Council can look at how much progress has been made, and assess the effects of the extension on the objectives and policies that are in place, at that time.

The applicant advised on 12 October 2020 that they wished to amend their application to

withdraw the request for an extended duration of consent.

DECISION

The Planning Manager, on the 19th October 2020, approved:

Subdivision Consent

THAT pursuant to Section 104B of the Resource Management Act 1991, consent be granted to subdivide Lot 6 DP 2038, Lot 5 DP 314202 and Lot 8 DP 314202, at 2 Ashworths Road, Ohoka, as a discretionary activity subject to the following conditions which are imposed under Section 108 of the Act:

1. Application Plan

1.1 The activity shall be carried out in accordance with the attached approved application plans, stamped RC205106 and RC205107 unless varied by the conditions below.

2. Standards

2.1 All stages of design and construction shall be in accordance with the following standards (and their latest amendments) where applicable:

- Waimakariri District Council Engineering Code of Practice
- Waimakariri District Council Stormwater Drainage and Watercourse Protection Bylaw (2018)
- Erosion & Sediment Control Toolbox For Canterbury
- NZS 4404:2010 Land Development and Subdivision Infrastructure
- NZS 4431:1989 Earthfill for Residential Development
- NZS 6803:1999 Acoustics for Construction Noise
- New Zealand Pipe Inspections Manual AS/NZS 2845.1:2010 Water Supply: Backflow Prevention Devices: Materials, Design and Performance requirements.
- New Zealand Drinking Water Standards 2005 (Revised 2018)
- NZ Pipe Inspection Manual
- Waimakariri Stormwater Bylaw (2011)
- MOTSAM Manual of Traffic Signs and Markings
- New Zealand Transport Agency Standards
- New Zealand Industry Standard: Field Testing of backflow prevention devices and verification of air gaps.

3. Easements

3.1 All services, including open drains and access ways, serving more than one lot or traversing lots other than those being served and not situated within a public road or proposed public road, shall be protected by easements. All such easements shall be granted and reserved.

4. Finished Floor Levels

4.1 The Consent Holder shall ensure that the minimum floor level of any new

dwellinghouse erected on proposed Lots 1 to 20 is:

- set no lower than 400mm above undisturbed ground at any point intersecting the building footprint and located outside Councils mapped 1 in 200 year (0.5% AEP) Flood Hazard Areas.
- set no lower than 400 mm above the modelled 1 in 200 year (0.5% AEP) Flood Depth where the building footprint is located within a Low (Green) Flood Hazard Area.
- set no lower than 500 mm above the modelled 1 in 200 year (0.5% AEP) Flood Depth where the building footprint is located within a Medium (Blue) Flood Hazard Area.
- Building is prohibited in a High (Red) 1 in 200 year (0.5% AEP) Flood Hazard Area

4.2 Condition 4.1 as it applies to Lots 1 to 20 inclusive shall be subject to a consent notice pursuant to Section 221 of the Resource Management Act 1991 and shall be registered on the Records of Title of Lots 1 to 20 inclusive.

5. Water Supply

5.1 The Consent Holder shall apply to the Waimakariri District Council to provide connections to the existing water supply to meet the following minimum standards for Lots 1 to 20 inclusive.

- Separate 15mm internal diameter laterals from the main to the toby box;
- The installation of 50mm (DN63) PN 12.5 PE sub mains;
- Toby boxes, restrictors and valves installed at the road frontage as per Engineering Code of Practice Standard Drawing 600-413B;
- Individual minimum 20mm internal diameter laterals from the toby box to the storage tank, which shall be located a minimum of 1m within the main body of the lots;
- A supply of a minimum of 2.0m³/day of water, including pipework, restrictors, fittings and storage tanks with a minimum capacity of 4,500 litres;
- Storage tanks shall be constructed in accordance with WDC Engineering Code of Practice Standard Drawing 403 and shall ensure an air gap separation is achieved of at least twice the inlet pipe diameter between the inverts of the inlet pipe and the overflow pipe;
- No connections to the laterals are permitted upstream of the tanks.

5.2 As the network utility provider, the Council's Water Unit at the Consent Holder's expense shall carry out all connections to the existing public water supply.

5.3 The Consent Holder shall supply a domestic water supply to Lot(s) 1 to 20 inclusive from the Ohoka water supply. This is a restricted flow supply.

5.4 The Consent Holder shall apply to Council's Water Asset Manager for approval to connect to the Council's existing water reticulation. The approval shall be given before works commence on Council's reticulation.

6. Power and Telephone

6.1 The Consent Holder shall provide evidence in writing from the relevant service utility provider (s) that existing electrical and telephone reticulation has the capacity to provide service connection to Lots 1 to 20 inclusive. If wired telecommunication reticulation is unavailable or extension of wired reticulation is shown to be cost prohibitive, the Consent Holder shall provide evidence in writing from a service provider of their choice, that Broadband has capacity to provide a service connection to Lots 1 to 20 inclusive.

7. Waste Water

7.1 The Consent Holder shall submit to Council for approval specific design for the disposal of wastewater from future dwellinghouses on Lots 1 to 20 inclusive based on the following:

- Connection of a pressure main servicing the development can be accommodated by tapping band to the DN180 PE Pressure Main at the Dawsons Road to Wards Road intersection.
- A flushing point will need to be installed at this location to periodically drive water under pressure to mobilise any solids settled in the DN180 pipe. This will likely require a new sluice valve to be installed to ensure flow is directed to the Bradleys Road pump station.
- Boundary kits will need to be installed under the consent and EOne/Aquatech pumping systems will need to be consent noticed on each title. These systems will be owned by the property owner.
- All the above will be subject to your consultant design and Council approval.

7.2 The Consent Holder shall apply to Council's Wastewater Asset Manager for approval to connect to the Council's existing sewer reticulation. The approval shall be given before works commence on Council's reticulation.

7.3 Connections to the existing Council reticulation shall be carried out by a Council approved contractor at the expense of the Consent Holder following application to the Council.

7.4 The Consent Holder shall install a boundary connection for a Simplex (Domestic) EOne or Aquatec Grinder Pump Station on Lots.1 to 20 inclusive. The connection shall include a lateral with a stainless steel swing check valve, stainless steel flushing tee point and a stainless steel ball isolating valve inside a standard PE valve box.

7.5 Prior to the habitation of a dwelling house on Lots 1 to 20 the Consent Holder shall install a wastewater pump station which meets the following minimum requirements:

- Installation of a Simplex (Domestic) EOne or Aquatec Grinder Pump

station, or Council approved equivalent for Lots 1 to 20.

- The wet well lid, vent and openings are above the surrounding ground level to prevent inundation by a 2%AEP (50 year flood event). The design level for Lots 1 to 20 shall be provided by the landowner as part of the Building Consent process.
- The design of the reticulation system shall be certified by the manufacturer of the onsite grinder pumps as being fit for purpose and shall be submitted to the Council for approval as part of the Building Consent process.
- The property owner of Lots 1 to 20 shall provide the Council with a Certificate, signed by the installer, stating that the pump station has been supplied, installed and commissioned in accordance with the manufacturer's recommendations.
- The property owner shall have a maintenance contract with a contractor who has been certified by the pump station manufacturer, to inspect and maintain the pump station on an annual basis.
- The on-site pump station, pipes and the boundary connection, excluding the stainless steel ball isolating valve shall be the responsibility of the landowner. This is as shown on WDC SD600-355B Issue B.

7.6 Condition 7.5 applies to Lots 1 to 20 inclusive, and shall be subject to a consent notice, pursuant to Section 221 of the Resource Management Act 1991 and shall register on the Records of Title for Lots 1 - 20 inclusive.

8. Stormwater

8.1 The Consent Holder shall design and provide the stormwater reticulation to accommodate a 20% A.E.P (1 in 5-year) storm derived from rainfall figures for the site location from NIWAs HIRDS Version 4 with RCP 8.5, 2081 - 2100 climate change scenario.

8.2 The Consent Holder shall provide for Council approval a stormwater disposal system for all lots (including any rights of way). Plans and calculations are to be provided to Council and no work may commence until the plans and calculations have been approved by Council.

8.3 The Consent Holder shall provide for secondary flow paths with a design capacity to accommodate flows from a 2% AEP event from the subdivision. The design of the overall stormwater system shall also include consideration of secondary flow paths for events greater than the 2% AEP event.

8.4 The stormwater runoff from the roofs of structures on Lots 1 to 20 shall discharge to an individual soak pit on each lot designed and constructed to infiltrate roof water generated by a 10 minute 10% AEP event with a Factor of Safety of 3 applied to the site soils infiltration rate. The Consent Holder shall demonstrate that a suitable design for individual soak pits is achievable at the time of engineering approval.

8.5 Stormwater swales used to convey stormwater generated from roads and right of ways from within the proposed subdivision shall be designed as follows:

- To convey as a minimum the 20% AEP (1 in 5 year) critical duration;
- To convey and provide attenuation storage for the 2% AEP critical duration

Plans and calculations for the above shall be submitted to Council for approval. No works may commence until engineering approval has been granted.

- 8.6 Condition 8.4 applies to Lots 1 to 20 inclusive, and shall be subject to a consent notice, pursuant to Section 221 of the Resource Management Act 1991 and shall register on the Records of Title for Lots 1 - 20 inclusive.

9. Earthworks

- 9.1 The Consent Holder shall provide a Producers Statement from a Chartered Professional Engineer confirming that the land on all residential lots is suitable for residential houses and foundations.
- 9.2 The Consent Holder shall ensure all rubbish, organic or other unsuitable material shall be removed off site to an approved disposal facility where this material can be legally disposed of.
- 9.3 The Consent Holder shall ensure earthworks involving reshaping or filling shall not alter natural ground level by more than 300mm where it is carried out within 2 metres of the boundary with any adjacent land in separate ownership and that surface runoff is not altered or impeded at the site boundary.
- 9.4 Where excavated cut material is greater than 200 mm in thickness, the Consent Holder shall undercut and replace with 100 mm minimum of compacted topsoil.
- 9.5 Any areas of fill or earthworks not certified in accordance with NZS 4431 shall, together with sufficient dimensions to locate the feature from property boundaries, be registered on the land transfer title plans and shown on the 'As Built' plans.
- 9.6 The Consent Holder shall ensure stockpiles are located a minimum of 10 metres away from dwellings and are no greater than 3 metres in height. Any stockpile not removed after a period of 1 month shall be grassed to prevent sediment migration.
- 9.7 Where land filling is to be undertaken the areas affected, together with dimensions relative to the created property boundaries, shall be shown on the 'As Built' plans to be supplied to the Council.
- 9.8 During all earthworks the Consent Holder shall employ dust containment measures, such as watering, to avoid off site nuisance effects created by dust.
- 9.9 Where material needs to be imported on to site, the Consent Holder shall provide details of the source and type of material, laboratory tests to confirm mode of compaction, type and frequency of transportation and route used to enter the site to Council, in writing, prior to works commencing.
- 9.10 The earthworks shall not block, alter or redirect existing or natural overland flow paths, and shall not block or redirect drains.

- 9.11 The Consent Holder shall grass each lot at the completion of earthworks, and shall maintain the areas so that any areas of dead grass are replaced immediately, in order to avoid nuisance effects created by dust.
- 9.12 The Consent Holder shall ensure stockpiles have a minimum setback of 5 m from any sensitive areas (e.g. stormwater inlets) and are within a sediment control zone positioned behind the sediment barrier.

10. Environmental Management

- 10.1 Prior to any works commencing on site the Consent Holder shall provide an Environmental Management Plan (EMP) to the Council for approval. The EMP shall detail the methodology of works and the environmental controls in place to limit effects from issues involving flooding, dust, noise and other pollutants.
- 10.2 The Consent Holder shall take measures to control silt contaminated stormwater at all times during earthworks, roading development and installation of underground services. Details of the proposed controls shall be included in an Erosion and Sediment Control Plan (ESCP) which will form part of the Environmental Management Plan to be submitted to Council for approval in writing.
- 10.3 The Consent Holder shall be responsible for installing and maintaining any sediment control devices, protection of the existing land drainage and waterways, and making regular inspections, repairs and changes to the proposed measures as required.
- 10.4 The Consent Holder shall ensure all construction operations shall be limited to 7 am to 6 pm Monday to Saturday. No construction work shall take place on Sundays or Public Holidays.

11. Roading

- 11.1 The Consent Holder shall construct all roading to service the development in accordance with the approved plans and specifications and the requirements set out in the Waimakariri District Council Engineering Code of Practice (Standard Drawing) 600-270 Issue D and 600-273 Issue D noting that a 20m legal width and a 6m sealed carriageway is required.
- 11.2 The Consent Holder shall carry out Benkelman Beam tests or other approved in situ formation bearing tests following completion of the base course layer and prior to sealing. Council shall approve the test results.
- 11.3 The Consent Holder shall provide sealing that comprises a two-wet coat seal system (grade 6 chip over grade 4 chip) over the entire carriageway surface, except for the cul-de-sac heads, which shall be surfaced with minimum 30 mm AC10 over a single hot bitumen Grade 5 chip seal coat.
- 11.4 The Consent Holder shall ensure no excavation commences within a public road reserve without the prior receipt of a Corridor Access Request (CAR) from the Waimakariri District Council.
- 11.5 The Consent Holder shall submit plans of all proposed road markings and traffic control signs for approval as part of the Engineering approval process.
- 11.6 In the event of any works or trenching being required across the frontage of adjacent properties the Consent Holder shall inform the affected occupiers of

those properties, a minimum of 48 hours prior to the commencement of any work.

- 11.7 The Consent Holder shall construct a shared cycle/walkway in Lot 21 of minimum width of 2.5 metres in general accordance with Council's Standard Drawing 600-274 (Issue D).

12. Vehicle Crossing

- 12.1 The vehicle crossing to the rights of way serving Lots 4 to 6 and 9 to 11 inclusive shall be formed and sealed to accord with the requirements of the Waimakariri District Council Engineering Code of Practice Standard Drawing 600-217 Issue D.
- 12.2 The consent holder shall Clegg Hammer test the access to Lots 4 to 6 and 9 to 11 prior to sealing/final surfacing. A measured Clegg Impact Value of at least 25 for residential crossings shall be obtained to assure adequate compaction and pavement strength prior to sealing. Documentation shall be supplied to Council confirming the test results obtained.

13. Traffic Management Plan

- 13.1 The Consent Holder shall submit for approval a Traffic Management Plan detailing traffic control works (including sketch layout and control signs). This plan may be submitted at the time of engineering plan approval and shall be submitted prior to work commencing in road reserves. Management shall be to Level 1, as described in the NZTA Code of Practice for Temporary Traffic Management.

14. Right of Way

- 14.1 The right(s) of way serving Lot(s) 4, 5, 6, 9, 10 and 11 shall be constructed to accord with the Waimakariri District Council Engineering Code of Practice Standard Drawing 600-273 Issue D. Passing bays shall be installed at 90 metre intervals.
- 14.2 On completion of the Right of Way (ROW) works, the Consent Holder shall provide records, certifying that the ROW has been built in accordance with the design and that the works and materials were inspected, audited and tested, to ensure compliance with the quality requirements. Records shall include copies of documentation relating to 'key' hold or witness points e.g. Benkelman Beam results.

15. Accidental Discovery Protocol

- 15.1 Where koiwi tangata (human remains) are suspected:
- a) Steps shall be taken immediately to secure the area in a way that ensures the koiwi tangata are untouched;
 - b) Te Ngai Tuahuriri Runanga, the Police, the Waimakariri District Council and Heritage New Zealand shall be notified;
 - c) The Consent Holder or suitable representatives shall be available to meet and guide kaumatua, Police, Waimakariri District Council and

Heritage New Zealand staff to the site, assisting with any requests that they may make;

- d) Earthworks in the affected area shall remain halted until the Taumatua, the Police and Heritage New Zealand staff have marked off the area around the site and have given approval for earthworks to recommence, including notification that the archaeological provisions of Heritage New Zealand have been met and, if required, an archaeological authority (consent) has been granted by Heritage New Zealand.

15.2 Where suspected urupa, wahi tapu, wahi taonga or any place associated with human activity that occurred before 1900 and is discovered:

- a) Earthworks shall stop immediately;
- b) All machinery shall be shut down immediately;
- c) All persons shall leave the area;
- d) The land owner shall be advised of the discovery;
- e) Heritage New Zealand shall be advised of the discovery and either the Regional Archaeologist of the Heritage New Zealand has confirmed in writing that the archaeologist provisions of Heritage New Zealand do not apply; or the requirements of Heritage New Zealand have been met and, if required, an archaeological authority (consent) has been granted by the Heritage New Zealand;
- f) Where the place is associated with Maori activity that occurred before 1900 the land owner shall consult Te Ngai Tuahuriri Runanga to determine in consultation with the Heritage New Zealand, what further actions are appropriate to safeguard the site or its contents, and to avoid, reduce, remedy or mitigate any damage to the site; and
- g) The Waimakariri District Council shall be notified.

16. Water Races

16.1 If any works are to be undertaken on the water race, the Consent Holder shall confirm in writing that a '*Stockwater Application Form*' for works associated with a water race has been submitted. 'Works' includes constructing a culvert on the water race, planting or building within 10 metres of the water race, diverting water, taking water or constructing a pond by the water race.

16.2 The Consent Holder shall submit plans and calculations to Council for approval for any extensions or alterations to existing water races. No work may commence on water races until engineering approval has been confirmed by Council.

17. Conditions Auditing

17.1 The Council, on an actual cost basis, shall audit compliance with the conditions of consent by both site inspections and checking of associated documentation to ensure the work is completed in accordance with the approved plans and specifications and to the Council's standards. The Council will undertake inspections and checking.

17.2 The Consent Holder shall notify Council at least one working day prior to commencing various stages of the works. This is to enable audit inspections required by the consent to be performed.

17.3 The minimum level of inspection shall be as follows:

Earthworks

- Following stripping of topsoil;
- During progress of the earthworks;
- Prior to filling drainage ditches;
- On completion to final levels;

Roading

- Following shaping of roading sub-grade prior to placement of sub base material;
- Following metalling up, prior to pouring of kerb and any channel;
- Following compaction of base course prior to sealing. The carriageway shall be tested with a Benkelman Beam. The results shall be submitted to Council for approval.

Trenching

- Prior to backfilling of services;
- During compaction of the trench backfilling.

Water

- During installation;
- Testing of mains and laterals;
- Sterilisation of water mains.

Stormwater swales and water races

- On piping works, drains, headwalls and related works;
- On excavation;
- During installation;
- On completion.

Access and Right of Ways

- On completion of excavation to sub-grade;
- Following compaction of base course prior to final surfacing;
- On completion

Whole Works

- Prior to issue of a Conditions Certificate under Section 224(c) of the Resource Management Act 1991;
- One week prior to end of maintenance period (where applicable);
- On completion of maintenance period (where applicable).

17.4 Where repeat inspections are required because of faulty workmanship or work not being ready contrary to the receipt of a notification, such inspections will be carried

out on the same charging basis as the normal inspections.

18. Vesting of Assets

- 18.1 Lot 21 shall be vested as Local Purpose (Accessway) reserve in Waimakariri District Council at the time of the 224(c) Conditions Certificate issue.
- 18.2 Lot 22 and 23 shall be vested Road in Waimakariri District Council at the time of the S224(c) Conditions Certificate issue.

19. Street Names

- 19.1 The Consent Holder shall submit three names for the road signs for each road to the Council for approval and, once approved, shall install the street name signs and poles at all road intersections.

Works Condition

- 20.1 A completion of conditions certificate under Section 224(c) of the Resource Management Act 1991 will not be issued until conditions 1 to 19 above have been met to the satisfaction of the Waimakariri District Council, at the expense of the consent holder.

ADVICE NOTES

- (a) The Consent Holder is advised this consent does not include the stock water race culvert installation as stock water races are managed by Waimakariri Irrigation Limited (WIL). Properties that contain or border a water race are required to submit a Stockwater Application Form to Council prior to the following activities taking place:
- Application to take stockwater for domestic irrigation.
 - Application to plant within 10 metres either side of a water race.
 - Application to erect a building or structures of any kind within 10 metres of a race.
 - Application to put in a pond.
 - Application to put in a culvert on a water race.
 - Application to divert a water race.
- The Consent Holder is advised that Stockwater forms can be sourced from the Council Services Centres or on-line at:
<https://www.waimakariri.govt.nz/home>
- (b) The Consent Holder is required to submit a 'Stockwater Application' Form for works associated with Council or Waimakariri Irrigation Limited water races.
<https://www.waimakariri.govt.nz/home>
- (c) The Consent Holder is advised that Traffic Management Plan forms can be sourced from Council Service Centres or on-line at:
<https://www.waimakariri.govt.nz/home>
- (d) Soil infiltration testing will be required at Building Consent stage to confirm that soakage is achievable given that the property is in an unknown soil infiltration area. If soakage is not achievable then other options to achieve stormwater

neutrality in a 1 in 10 year event will need to be implemented. This may include the requirement for stormwater detention ponds, swales or on site stormwater detention tanks.

- (e) Where the subdivision includes rights of way, the water condition requires the toby boxes to be placed at the rights of way frontage and the separate 20mm laterals laid within the rights of way to the main body of each lot served by the rights of way.
- (f) On rural lots, the service authorities will not install submains to individual lots until the location of the house site is determined. Prospective purchasers of these lots should be advised to contact the relevant service authorities to ascertain the likely costs of servicing any specific lots to the purchaser's requirements.
- (g) Potable water supply tanks shall have an air gap and overflow to provide backflow prevention in accordance with G12/ASI of the Building Code, and shall be water tight to prevent ingress of water or contaminants. Refer Standard Drawing SD600-403 Issue A.
- (h) The requirement for power and telephone to be confirmed as having capacity to service the subdivision does not guarantee that power or telephone connections are provided to potential allotments. On rural lots, the service authorities will not install submains to individual lots until the location of the house site is determined. Prospective purchasers of these lots should be advised to contact the relevant service authorities to ascertain the likely costs of servicing any specific lots to the purchaser's requirements.
- (i) The Erosion & Sediment control Toolbox for Canterbury can be found on the ECan website link <http://esc.canterbury.co.nz/>
- (j) The Consent Holder shall be advised that development contributions apply to this subdivision and that these will be levied in accordance with the Council's Development Contributions Policy. Development Contributions will be advised in a letter separate to the resource consent decision. Payment of development contributions is required prior to the completion of the 224(c) process, under section 208 of the Local Government Act 2002.
- (k) Vehicle crossings for Lots other than 4 - 6 and 9 -11 can be dealt as part of the Building Consent process.
- (l) The Consent Holder is advised that requirements and conditions listed are a statement of the Council's minimum standards. Where the Consent Holder proposes higher standards or more acceptable alternatives these shall be submitted to the Council in writing for approval.
- (m) The consent is a resource consent in terms of the Resource Management Act 1991. It is not a consent under any other Act, Regulation or Bylaw.

Land Use Consent

THAT pursuant to Section 104B of the Resource Management Act 1991 consent be granted to locate an intersection within 650m of the intersection of Dawsons and Ashworths Road being a subdivision of Lot 6 DP 2038, Lot 5 DP 314202

and Lot 8 DP 314202 at 2 Ashworths Road, Ohoka as a discretionary activity subject to the following conditions which are imposed under Section 108 of the Act:

1. Application plan

- 1.1 The activity shall be carried out in accordance with the attached approved application plan stamped RC205106 and RC205107

2. Inspection

Compliance with the above conditions may be verified by inspection by a Council Officer pursuant to Section 35(2)(d) of the Resource Management Act 1991. Should an inspection be required the Consent Holder shall pay to the Council charges pursuant to Section 36(1)(c) of the Resource Management Act 1991 to enable the Council to recover its actual and reasonable costs in carrying out the inspections.

REASONS FOR THE DECISION

Pursuant to Section 113 of the Act the Council was satisfied that:

- No person is deemed to be adversely affected by the proposal.
- The environmental effects will be less than minor.
- All lots meet the minimum area and dimension requirements of the District Plan.
- The provision of sight lines will provide for the safety of road users and the vehicle crossing(s) have been conditioned to meet the Council's formation standards.
- Traffic safety will not be adversely affected by the proposal.
- The activity will not adversely affect the amenity or character of the area.
- There are no natural hazards, other than flooding, which has been satisfactorily addressed, that will result in adverse effects to the safety of people.
- The proposal is in accordance with the Objectives and Policies of the District Plan.

DATED at Rangiora this 19th Day of October 2020



SIGNED by Kate Bonifacio
RESOURCE MANAGEMENT PLANNER

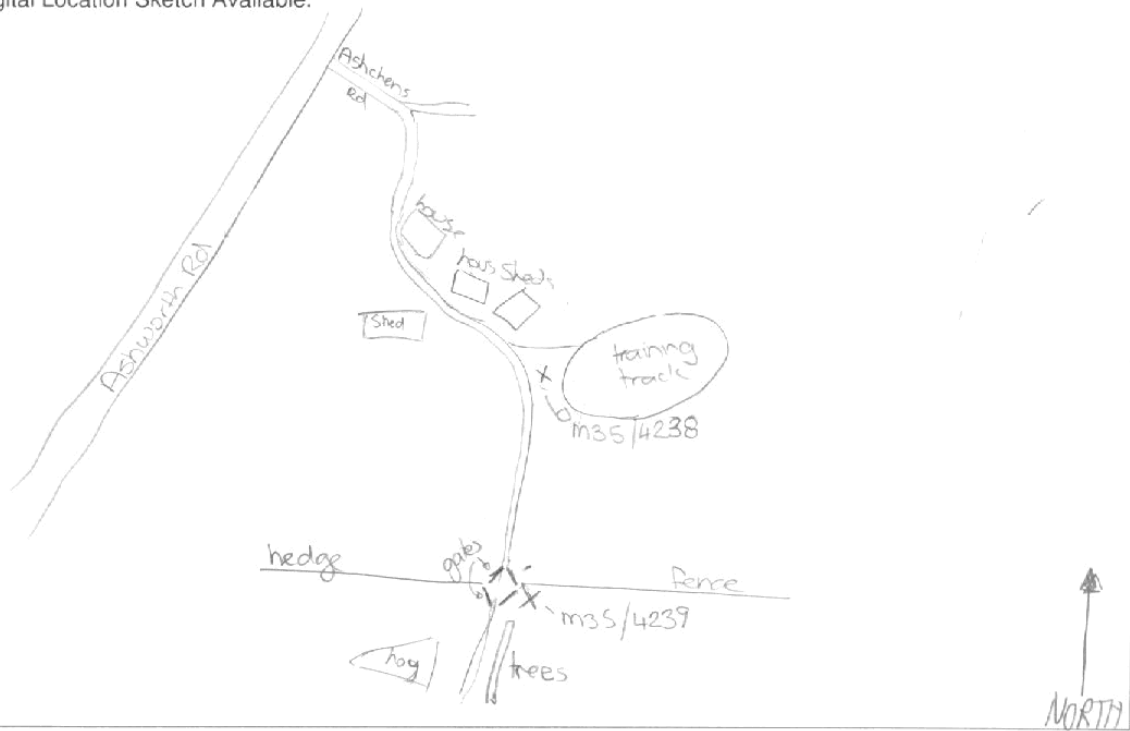
**ATTACHMENT 3:
EXISTING BORE DETAILS**

Bore or Well No	M35/4239
Well Name	ASHWORTH'S RD
Owner	Timperley Enterprises Limited

Well Number	M35/4239	File Number	CO6C/01922
Owner	Timperley Enterprises Limited	Well Status	Active (exist, present)
Street/Road	ASHWORTH'S RD	NZTM Grid Reference	BW23:62352-98401
Locality	Ohoka	NZTM X and Y	1562352 - 5198401
Location Description	BESIDE MAIN STOCK RACE	Location Accuracy	2 - 15m
CWMS Zone	Waimakariri	Use	Irrigation,
Groundwater Allocation Zone	Eyre River	Water Level Monitoring	--
Depth	12.30m	Water Level Count	0
Diameter	203mm	Initial Water Level	
Measuring Point Description		Highest Water Level	
Measuring Point Elevation	37.41m above MSL (Lyttelton 1937)	Lowest Water Level	
Elevation Accuracy	< 0.5 m	First reading	
Ground Level	0.00m above MP	Last reading	
Strata Layers	0	Calc Min 80%	4.16m below MP (Estimated)
Aquifer Name		Aquifer Tests	0
Aquifer Type	Unknown	Yield Drawdown Tests	0
Drill Date		Max Tested Yield	
Driller	J W Horne (& Co)	Drawdown at Max Tested Yield	
Drilling Method	Unknown	Specific Capacity	
Casing Material	STEEL	Last Updated	29 Jun 2023
Pump Type	Centrifugal (Surface)	Last Field Check	19 Nov 1996
Water Use Data	Yes		

use this sketch for M35/4238

No Digital Location Sketch Available.



No screen data for this well

No step tests for this well

Comments

COMMENT DATE	COMMENT
19 Nov 1996	Location verified with GPS, 19/11/96. Near wells 4748, 4238, and 0350. Previous owner R L Reid
10 Jan 2023	Reference Level updated using LIDAR imagery in Dec 2022. The existing RL was 41.26 and the QAR RL was 4. The method of calculating the original RL was: Interpolated DTM. If GL from MP is updated in future please assess if RL also needs to be updated.

ATTACHMENT 4:

ECAN RESOURCE CONSENT CRC182271

Details for CRC182271

RMA Authorisation Number	CRC182271	Client Name	Ohoka Farm Holdings Limited
Consent Location	1 Aschens Road, OHOKA	State	Issued - Active
To	to take and use groundwater		
Commencement Date	05 Dec 2013		
Date This Consent Number Issued	24 Oct 2017		
Expiry Date	22 May 2024		

Please note there has been a change to how we represent the date fields. The 'Date This Consent Number Issued' is the date this version of the consent was issued. The 'Commencement Date' is when the original version of this consent was issued as per [s116 of the Resource Management Act 1991](#).

- **1** Water may only be taken from:
 - a. Bore M35/4238, 1020 millimetres in diameter and 12.2 metres deep, at or about map reference Topo50 BW23:6272-9860 (NZMS 260 M35:72728-60229).
 - b. Bore M35/4239, 203 millimetres in diameter and 12.3 metres deep, at or about map reference Topo50 BW23:6235-9839 (NZMS 260 M35:72350-60020).

- **2** Water may only be taken from:
 - a. Bore M35/4238 at a rate not exceeding 15 litres per second and 12,960 cubic metres in any period of 12 consecutive days.
 - b. Bore M35/4239 at a rate not exceeding 31 litres per second and 26,784 cubic metres in any period of 12 consecutive days.

- **3** The volume of water taken and used under this consent shall not exceed 554,750 cubic metres between 1 July and the following 30 June.

- **4** Water shall only be used for the irrigation of a total of 73 hectares on the area of land shown in attached Plan CRC140973 which forms part of this consent.

- **5** Whenever the flow in the Ohoka Stream, as estimated by the Canterbury Regional Council from measurements at the confluence with the Kaiapoi River, at or about map reference NZMS 260 M35:803-591, for any 24 hour period ending at noon is:
 - a. 800 litres per second or greater, the maximum volume of take during the next 24 hours in terms of bore M35/4238 shall not exceed 12,960 cubic metres;
 - b. Greater than 300 litres per second and less than 800 litres per second, except where (c) applies, the maximum volume of take during the next 24 hours in

terms of bore M35/4238 shall be equal to the volume shown on the vertical axis on the attached graph (A) that corresponds to that flow on the horizontal axis, by reference to the diagonal line marked A-B.

c. Either:

- i. equal to or greater than the sum of 300 litres per second plus the total volume of abstractions authorised by permits which come within the category of "A" permits as defined in the proposed Waimakariri River Regional Plan; or
- ii. greater than 300 litres per second and less than 800 litres per second and all water permit holders who are subject to the same minimum flow restriction as is set in (d), are adhering to a water sharing regime which restricts the total volume of abstraction from the Ohoka Stream whenever the flow is at or above 300 litres per second; then the maximum volume of take during the next 24 hours in terms of bore M35/4238 shall not exceed 12,960 cubic metres;

d. at or less than 300 litres per second, then the maximum volume of take during the next 24 hours in terms of bore M35/4238 shall not exceed 500 cubic metres.

- **6** Whenever the flow in the Ohoka Stream, as estimated by the Canterbury Regional Council from measurements at the confluence with the Kaiapoi River, at or about map reference NZMS 260 M35:803-591, for any 24 hour period ending at noon is:
 - a. 800 litres per second or greater, the maximum volume of take during the next 24 hours in terms of bore M35/4239 shall not exceed 26,784 cubic metres;
 - b. greater than 300 litres per second and less than 800 litres per second, except where (c) applies, the maximum volume of take during the next 24 hours in terms of bore M35/4238 shall be equal to the volume shown on the vertical axis on the attached graph (B) that corresponds to that flow on the horizontal axis, by reference to the diagonal line marked A-B.

c. Either:

 - i. equal to or greater than the sum of 300 litres per second plus the total volume of abstractions authorised by permits which come within the category of "A" permits as defined in the proposed Waimakariri River Regional Plan; or
 - ii. greater than 300 litres per second and less than 800 litres per second and all water permit holders who are subject to the same minimum flow restriction as is set in (d), are adhering to a water sharing regime which restricts the total volume of abstraction from the Ohoka Stream whenever the flow is at or above 300 litres per second; then the maximum volume of take during the next 24 hours in terms of bore M35/4239 shall not exceed 26,784 cubic metres;

d. at or less than 300 litres per second, then the maximum volume of take during the next 24 hours in terms of bore M35/4239 shall not exceed 683 cubic metres.
- **7** The taking of water in terms of this consent shall cease for a period of up to 48 hours on notice from the Canterbury Regional Council, to allow measurements of the flow in

the Ohoka Stream.

- **8** The consent holder shall, prior to the first exercise of this consent, install an easily accessible straight pipe(s), with no fittings or obstructions that may create turbulent flow conditions, of a length at least 15 times the diameter of the pipe, as part of the pump outlet plumbing or within the mainline distribution system.
- **9**
 - a. The consent holder prior to the first exercise of this consent:
 - i. install a water meter(s) that has an international accreditation or equivalent New Zealand calibration endorsement, and has a pulse output, suitable for use with an electronic recording device, which will measure the rate and the volume of water taken to within an accuracy of plus or minus five percent as part of the pump outlet plumbing, or within the mainline distribution system, at a location(s) that will ensure the total take of water is measured; and
 - ii. install a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a pulse from the flow meter at least once every 60 minutes, and have the capacity to hold at least one season's data of water taken as specified in clauses (b) (i) and (b) (ii), or which is telemetered as specified in clause (b) (iii).
 - b. The recording device(s) shall:
 - i. be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); or
 - ii. store the entire season's data in each 12 month period from 1 July to 30 June in the following year, which the consent holder shall then download and store in a commonly used format and provide to the Canterbury Regional Council upon request in a form and to a standard specified in writing by the Canterbury Regional Council; or
 - iii. shall be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder, No data in the recording device(s) shall be deliberately changed or deleted.
 - c. The water meter and recording device(s) shall be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.
 - d. The water meter and recording device(s) shall be installed and maintained throughout the duration of the consent in accordance with the manufacturer's instructions.
 - e. All practicable measures shall be taken to ensure that the water meter and recording device(s) are fully functional at all times.
- **10** Within one month of the installation of the measuring and recording device(s), or any subsequent replacement measuring or recording device(s), and at five-yearly intervals thereafter, and at any time when requested by the Canterbury Regional Council, attention: Regional Manager RMA Compliance and Monitoring, signed by a suitably

qualified person certifying and demonstration by means of a clear diagram, that:

- a. The measuring and recording device(s) has been installed in accordance with the manufacturers specifications; and
 - b. Data from the recording device(s) can be readily accessed and/or retrieved in accordance with clauses (b) and (c) of condition (8).
- **11** If the irrigation system is used to distribute diluted effluent, fertiliser or added contaminants the consent holder shall ensure.
 - a. An effective backflow prevention device is installed and operated within the pump outlet plumbing or within the mainline to prevent the backflow of contaminants into the water source; and
 - b. The backflow prevention device is tested at the time of installation and annually thereafter by a suitably qualified or certified person in accordance with Canterbury Regional Council approved test methods for the device used; and
 - c. The test report is provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager within two weeks of each inspection.

Advisory note: This condition does not authorise the distribution of effluent or fertiliser as this is subject to separate consent requirements pursuant to s15 of the RMA.

- **12** The consent holder shall take all practicable steps to:
 - a. Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity; and
 - b. Avoid leakage from pipes and structures; and
 - c. Avoid the use of water onto non-productive land such as impermeable surfaces and river or stream riparian strips.
- **13** The Canterbury Regional Council may, once per year, on any of the last 5 working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

Details for CRC182632

RMA Authorisation Number	CRC182632	Client Name	Ohoka Traders Limited
Consent Location	236 Aschens Road, Ohoka	State	Issued - Active
To	To use land for a farming activity.		
Commencement Date	11 Jan 2018		
Date This Consent Number Issued	11 Jan 2018		
Expiry Date	30 Jun 2025		

Please note there has been a change to how we represent the date fields. The 'Date This Consent Number Issued' is the date this version of the consent was issued. The 'Commencement Date' is when the original version of this consent was issued as per [s116 of the Resource Management Act 1991](#).

- **1** The use of land for farming shall only be within the area shown on Plan CRC182632, attached to and forming part of this consent.
- **2** The consent holder shall maintain a Farm Environment Plan (FEP) in accordance with Appendix CRC182632, which forms part of this consent; and
 - a. on farm practice shall be in accordance with the FEP at all times; and
 - b. the FEP shall be updated as necessary to reflect any changes in the farming operation over time; and
 - c. a copy of the FEP shall be provided to the Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance on request.
- **3** The Farm Environment Plan (FEP) shall include under the "Management Area: Nutrients" an Objective and Target as follows:

Objective: To meet a consented nitrogen loss limit of the Nitrogen Baseline.

Target: Nitrogen losses from farming activities are maintained at or below the consented nitrogen loss limits.

Definitions:

The Nitrogen Baseline means the discharge of nitrogen below the root zone as modelled with the current version of OVERSEER® as represented by the Nitrogen Baseline OVERSEER® input files provided with the application, which was 47 kg N/ha/yr, when calculated using OVERSEER® version 6.2.3.

The Nitrogen Baseline OVERSEER® input files reflect clause A of the Nitrogen Baseline definition, as defined below, and were inputted into the model in accordance with the OVERSEER® Best Practice Data Input Standards. They can be updated to reflect the

current OVERSEER® Best Practice Data Input Standards, but must still describe the same activity.

Clause A: "the discharge of nitrogen below the root zone, as modelled with OVERSEER®, (where the required data is inputted into the model in accordance with OVERSEER® Best Practice Data Input Standards)" "averaged over a 48 month consecutive period in the years of the period of 2009 – 2013 inclusive, and expressed in kg per hectare per annum, except in relation to Rules 5.46 and 5.62 where it is expressed as a total kg per annum from the identified area of land"

Advice Note: To assist the FEP auditor and the Consent Holder this Objective and Target has been inserted into Appendix CRC182632 attached to this consent.

- **4** The Farm Environment Plan (FEP) prepared in accordance with Conditions (2) and (3) above:
 - a. shall be audited within 12 months of the first exercise of this consent. Subsequent audits shall be undertaken within the timeframes specified in Part C of Appendix CRC182632; and
 - b. shall be audited in accordance with Part C of Appendix CRC182632. A copy of the audit data shall be provided to the Canterbury Regional Council in accordance with the requirements of the Canterbury Certified Farm Environment Plan (FEP) Auditor Manual.
- **5** The farming activity shall be managed:
 - a. to achieve and maintain a Farm Environment Plan audit grade of "A" or "B", as assigned in accordance with Part C of Appendix CRC182632; and
 - b. such that it is not assigned a "C" or "D" grade.
- **6** The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:
 - a. dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage;
 - b. ensuring that the provisions of Appendix CRC182632 relating to the FEP audit grading system and timeframes are still appropriate; or
 - c. enabling the standards set by a regional plan to be met when a regional plan has been made operative which sets rules relating to minimum standards of water quality.
- **7** If this consent is not exercised before 31 March 2023, it will lapse in accordance with Section 125 of the Resource Management Act 1991.