

**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 Variation 1 to the Proposed  
Waimakariri District Plan

**AND**

**IN THE MATTER OF**

Submissions and Further Submissions on the  
Proposed Waimakariri District Plan by  
**Doncaster Developments Limited**

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**EVIDENCE OF REGAN SMITH  
ON BEHALF OF DONCASTER DEVELOPMENTS LIMITED REGARDING HEARING  
STREAM 12E**

DATED 5 MARCH 2024

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## **INTRODUCTION**

- 1 My name is Regan Neville Smith
- 2 I hold the qualifications of BE (Hons) and I am a Chartered Professional Engineer and a Professional Member of Engineering New Zealand.
- 3 I am a Principal at Aurecon New Zealand Ltd with 26 years' experience in Civil Engineering and Land Development.
- 4 I am very familiar with the ground conditions, land drainage and servicing issues affecting development in Rangiora having been extensively involved in many local developments and plan changes over the last 20 years, including "Arlington Park" of which this site is included, "The Oaks" subdivision, the Ryman Healthcare site plan change and Westpark subdivision and plan change.
- 5 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**

- 6 In my evidence I address the following issues:
  - a. Flood Risk
  - b. Stormwater
  - c. Wastewater
  - d. Water supply
  - e. Utilities (Power/Telecommunications)

## **CONTEXT**

- 7 The land is situated at the northern end of Lehmans Road on the north-west edge of the Arlington Subdivision, Rangiora. The land is on the east side of Lehmans Road, south of the Rangiora racecourse and north-west of a line of electricity transmission lines. The total area of land the submitters are seeking to

rezone is 11 hectares, however the area of land that can be built on is about 7-8 hectares, due to the setback from the pylons along Lehmans Road.

- 8 The current land use is pastoral, and the proposed land use is residential.
- 9 The PWDP as notified zoned this land as Large Lot Residential Zone which entails an average density of one residential unit per 5000m<sup>2</sup>.
- 10 Doncaster Developments Limited (**DDL**) lodged a submission on the proposed plan seeking rezoning to General Residential Zone, which entails a maximum site density of one residential unit per 500m<sup>2</sup> of net site area.
- 11 DDL also lodged a submission on Variation 1 (**V1**) seeking rezoning to Medium Density Residential which entails a maximum of one residential unit for 200m<sup>2</sup> of net site area.
- 12 I affirm the contents of the following attached report(s):
- a. Arlington Infrastructure Servicing Report - Doncaster Developments Limited dated 29 September 2021, Aurecon New Zealand (**Appendix A**)
  - b. Infrastructure Options letter – Doncaster Developments dated 15 July 2022, Kerr and Partners (**Appendix B**)
- 13 Except that I update the reports in the following ways
- a. The Arlington Infrastructure Servicing Report dated 29 September and submitted by Doncaster Developments Limited was the draft report (Rev 0). The final report (Rev 1) was issued 1 December 2021. There is, however, no material change between the two revisions of the report.
  - b. Since issuing of the Aurecon and Kerr and Partners reports, Council have removed a temporary wastewater pump station at the north end of Charles Upham Drive. Wastewater from Pimlico Place and Huntington Drive is now drained south via Charles Upham Drive to Oxford Road, rather than into the West Belt reticulation. This is discussed further in Paragraph 30 below.

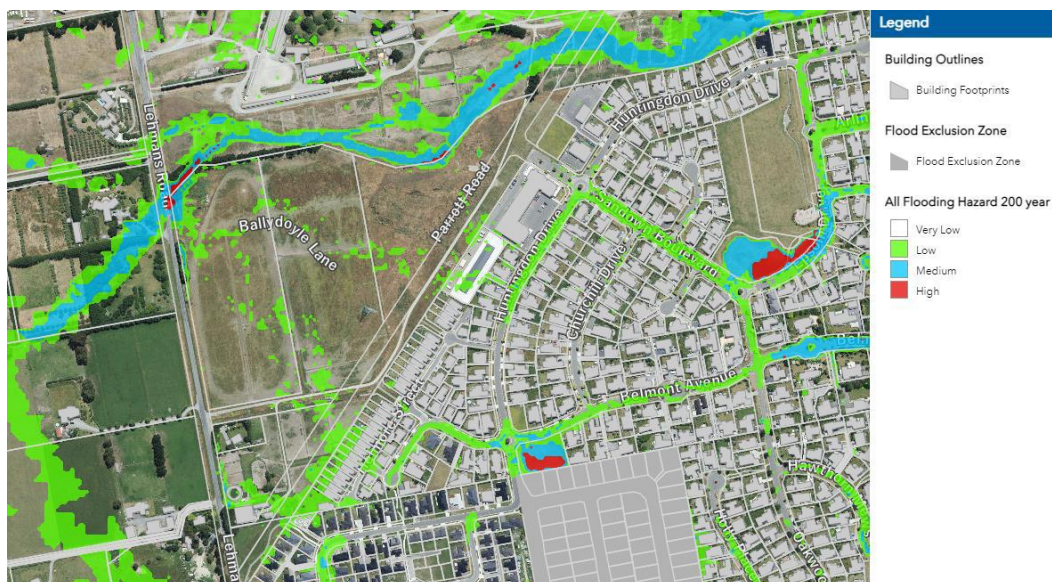
## KEY ISSUES AND SUMMARY OF CONCLUSIONS

### Site Conditions

- 14 The site is relatively flat with a gentle fall of approximately 1 in 200 in a South Easterly direction. There is an existing natural overland flow path falling from west to east along the northern boundary of the site. There are two other minor flow paths across the site.
- 15 The underlying ground conditions typically consist of topsoil overlying sandy silt, overlying gravel. Based on review of a limited number of test pits excavated on and nearby the site, the gravel starts at between 2 - 4 metres below ground. Groundwater is approximately 6 meters below ground level.
- 16 Infiltration testing undertaken by Aurecon on other developed sites adjacent to the site with similar ground conditions has confirmed infiltration rates upwards of 600mm/hr. This is considered very suitable for low impact design - soakage based stormwater management systems as adopted on adjacent developments.
- 17 The low groundwater levels and absence of weak, organic or liquefiable subsoils will enable very cost-effective construction for both development works and subsequent house foundations.

### Flood Risk

- 18 The Ashley River is located north of the site and flows in a west to east direction. There is an associated risk of breakout that could affect areas of the lower plains, including the site. Council and Environment Canterbury have modelled a range of scenarios including combinations of local flooding combined with a breakout of the Ashley River.
- 19 The predicted flooding on the site in a 200 year ARI breakout event combined with a 20 year ARI local event illustrated in the flood map below. There are two minor flow paths across the site with a corresponding "Low Hazard" classification (<300mm depth).



- 20 Both the Aurecon and Kerr and Partners reports conclude that provision for the flow paths can be made through development works to mitigate the potential risk to residential lots. It is also noted that there is opportunity to reduce impacts on existing properties to the east through more effective shaping of the flow paths.
- 21 As can be seen in the above flood map, this concept has been applied to adjacent developments successfully diverting flows along roads or reserves and protecting residential lots.
- 22 On this basis, I consider that flood risk can be adequately managed for the site and should not be considered an impediment to development, and that development of the site could potentially offer flood hazard benefits to the adjacent residential area.

### Stormwater Management

- 23 The ground conditions beneath the site are well suited to a soakage-based stormwater system with relatively shallow free draining gravels.
- 24 The stormwater management system would need to comply with the Waimakariri District Council Engineering Code of Practice and Global Stormwater Discharge Consent (CRC184601).
- 25 A typical stormwater management system could consist of:
- onsite soakpits for private roof and hardstand runoff

- First flush infiltration basin for treatment and disposal of the first 25mm of runoff from roads
- Offline attenuation and rapid soakage to store and dispose of runoff beyond first flush
- Secondary overland flow paths provided via roads and reserve areas to mimic existing overland flow paths and convey runoff through the development while protecting residential lots from flooding in over-design events

26 There is more than sufficient land within the transmission line corridor to construct stormwater treatment, attenuation and soakage facilities to service residential development of the site.

27 This approach to stormwater management has been used successfully on all recent developments in the immediate vicinity and is considered entirely appropriate for this site.

#### **Wastewater**

28 The Aurecon report confirmed that the site can be serviced by a gravity wastewater reticulation system extended from existing WDC infrastructure in Sandown Boulevard and/or Pimlico Place, or with the inclusion of a pump station, south via Lehmans Road or West Park (Salisbury Ave) to Oxford Road.

29 The Kerr and Partners reports focussed on the Salisbury Ave connection and Sandown Boulevard connection options, noting the potential capacity constraint on West Belt may limit the flow that could discharge via Sandown Boulevard.

30 As noted in point 13-b above, Council have recently decommissioned the temporary wastewater pump station at the north end of Charles Upham Drive which used to divert flow from Pimlico Place and Huntington Drive out to the West Belt line. This area now drains via Charles Upham Drive to Oxford Road.

31 With this change, the option of gravity connection to the Pimlico Place reticulation would allow the whole site to drain to Oxford Road wastewater main. This avoids the potential West Belt capacity constraint and also the need for a new pump station that would be required for the Salisbury Ave option.

- 32 Although feasible options previously existed to provide wastewater services to the site, the recent changes to the network will allow a more optimal gravity wastewater system with a single connection point to the existing network.
- 33 Therefore, I consider that wastewater servicing is not an impediment to development of the site.

### **Water supply**

- 34 The existing residential areas to the east and directly to the south are currently serviced by Rangiora Town Water Supply. Potential points of connection to the existing reticulation exist through extensions from Pimlico Place and Sandown Boulevard through the future bypass road connection through to the site.
- 35 The Aurecon report notes that extension of the existing network from Helmore Street (100mm Ø uPVC ) and Sandown Boulevard (150mm Ø uPVC) is likely to be sufficient to provide the necessary firefighting and domestic water required for the development of the site, and that an additional connection to Oxford Road trunk main via the Westpark reticulation or a separate line down Lehmans Road could increase the security of supply by providing a third point of connection.
- 36 The more recent Kerr and Partners reports refers to the Council North West Rangiora Water and Sewer Servicing assessment undertaken in 2021. This concluded that there is adequate capacity for the site to be developed for residential use along with extensive Rural-Residential development further north and west.
- 37 There are a number of options to connect to and extend the existing reticulation to service the site, and suitable allowance has been made in the overall network and source to accommodate development of the site.

### **Power and communications**

- 38 Aurecon have previously confirmed utility providers that the site can be provided with power supply and telecommunications services respectively.
- 39 The development planning has accounted for known setbacks and controls relating to Transpower's high voltage transmission lines across the site.

**CONCLUSIONS**

- 40 The good ground conditions on the Site allow low risk, cost-effective subdivision development works and house construction.
- 41 Stormwater can be managed onsite through soakage based disposal which would not put additional demand on downstream drainage infrastructure.
- 42 Water supply and wastewater infrastructure can be extended to service the site.
- 43 The site is potentially affected by flood breakout from the Ashley River. However, the predicted level of flooding is considered below the "Low Hazard" category and the risks can easily be managed through landform design as part of the development process. This could also provide opportunity to further reduce flood risk to adjacent residential properties.
- 44 From an infrastructure and natural hazard perspective, I consider the Site to be entirely suitable for the higher level of development which is sought in Doncaster Developments submissions.
- 45 Thank you for the opportunity to present my evidence.

Regan Smith  
5 March 2023