Before the Selwyn District Council

under: the Resource Management Act 1991

in the matter of: Proposed Private Plan Change 69 to the Operative District Plan: Lincoln South

and: **Rolleston Industrial Developments Limited**
Applicant

Statement of Evidence of Laura Drummond (Ecology)

Dated: 4 November 2021

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STATEMENT OF EVIDENCE OF LAURA DRUMMOND

INTRODUCTION

1 My full name is Laura Rose Drummond.

2 I am a Technical Director – Ecology at the environmental consulting firm Pattle Delamore Partners Ltd (PDP). I have a Bachelor's degree in Science (2006) and a Master's degree in Ecology (2012) from the University of Canterbury. I am a member of the New Zealand Freshwater Sciences Society.

3 I have 14 years of experience in freshwater ecology consulting and research. I have been employed by PDP since April 2018, where I specialise in surface water quality and freshwater ecology projects. Internationally I have held positions as a Freshwater Ecologist, Fisheries Specialist and Environmental and Regulatory Specialist in Canada. Prior to this I was employed by the National Institute of Water and Atmospheric Research (NIWA) as a Freshwater Ecology Technician in Christchurch.

4 My evidence is supplementary to the statement of evidence by **Mr Mark Taylor** who prepared the Ecological Assessment that was submitted as part of the Plan Change 69 application.

5 I am familiar with the plan change application by Rolleston Industrial Developments Limited (*the Applicant*) to rezone approximately 190 hectares of land on Springs Road, Lincoln to enable approximately 2000 residential sites and a small commercial zone. I have attended a site visit where I have seen the Springs Creek headwaters, channelised drains and springheads.

CODE OF CONDUCT

6 Although this is not an Environment Court hearing, I note that in preparing my evidence I have reviewed the Code of Conduct for Expert Witnesses contained in Part 7 of the Environment Court Practice Note 2014. I have complied with it in preparing my evidence. I confirm that the issues addressed in this statement of evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

SCOPE OF EVIDENCE

7 My evidence will deal with the following:

7.1 Comment on the potential mitigation that can be provided to minimise impacts of the proposed landuse change to aquatic features on site.

7.2 Comment on potential enhancement and net ecological benefits at the site compared to current land use.

7.3 Comment on potential buffer distances for springs and waterways.

8 In preparing my evidence, I have reviewed and considered the following:

8.1 Private Plan Change Application 69 to the Selwyn District Plan s42a Appendix E - Ecology Report by Instream Consulting Limited. Prepared for Selwyn District Council.

8.2 District Plan change for Lincoln South Development Area: Aquatic Ecology. Aquatic Ecology Limited. October 2020. AEL Report No. 183.

8.3 RFI Response in respect to Request for Further Information for SDC Plan Change 69; paras.80-83. Aquatic Ecology Limited. 15 February 2021.

8.4 The site Outline Development Plan (ODP).

9 In addition to the desktop review described in this statement, I have visited the site to familiarise myself with the site including the key springs and watercourses.

SUMMARY OF EVIDENCE

10 Within the proposed private plan change site, two clusters of springs (referred to as spring fields) have been verified through field surveys by Aquatic Ecology Limited (AEL). Springs Creek, which flows from northwest to southeast across the site, has a high level of springs associated with the headwaters within the gardens of Chudleigh Homestead and along the length of the stream bed. There is also a spring field located in the southeastern corner of the site, as detailed in the evidence of Mr Taylor and shown in Figure 1 of my evidence.

11 Spring-fed waterways and spring heads have high ecological values, and while the lowland area on the eastern side of the site and the channelised spring-fed waterways draining this area are in a degraded state, the proposed Plan Change provides potential for higher ecological values to be re-established at the site through restoration and enhancement. This could include protected reserve space, native planting, naturalisation and instream enhancement of

the spring-fed drains within the site and increased biodiversity connections within the wider catchment.

12 The key risk to the ecological values of the springs from the proposed land use change is alteration of their hydrology. In areas with shallow groundwater potential disruption to groundwater flow paths needs to be mitigated and minimum buffer distances from springs need to be established to reduce uncertainty in effects.

13 It is my opinion that with careful subdivision design a net ecological betterment at the site is achievable, when compared to current conditions. To achieve this, changes to the submitted ODP have been adopted including an increase in reserve space, relocation of stormwater areas and provision of minimum aquatic buffers. Consultation with council ecologists and iwi partners is also required as part of the future subdivision consent application to ensure the areas of high ecological value are protected and enhanced.

EVIDENCE

14 I have been engaged by the Applicant to comment on the potential mitigation options that can be provided to minimise impacts of the proposed land use change to spring-fed waterways, spring heads, and wetland habitat associated with springheads located within the site. Evidence on the ecological values of the waterways on site, the location and number of springs found in field surveys compared to those mapped on Canterbury Maps, and justification for proposed buffer distances is provided by Mr Taylor.

15 Agricultural land-use has resulted in highly modified site conditions. Springs Creek and isolated spring heads have been fenced to exclude stock, with water flow from spring heads channelized to drain the land and minimal remaining native riparian vegetation. Drainage of the land for agricultural use has resulted in the past wetland extent in the eastern low-lying area being cleared for pasture, and although a wetland delineation following the MfE delineation protocols[1] has not been completed at this stage (it is considered required for the subdivision consent application), at a high level it is considered that the land could be an area of 'improved pasture' which is not classified as a 'natural inland wetland' under the National Policy Statement for Freshwater (NES-F 2020). The springheads and associated riparian vegetation that has wetland characteristics require a suitable buffer for ecological protection, as outlined in the evidence of Mr Taylor.

16 When comparing past and current agricultural land use at the site, a residential development has the potential to result in a net

[1] Ministry for the Environment 2020. Wetland delineation protocols. Ministry for the Environment, Wellington. No. 10 p.

ecological benefit to aquatic ecological values. Currently, the springs in the southeastern area of the site are isolated amongst drained agricultural paddocks, development of the site with careful landscape design has the potential to result in a naturalized wetland area along the Spring Creek corridor and within the eastern, low-lying area and southeastern spring field to increase connectivity and biodiversity values in the area. This has prompted changes to the ODP to relocate stormwater management areas (blue) as further discussed in the evidence of Mr O'Neill, and an increase in reserve area (green and teal) along Springs Creek and within the eastern low-lying area of the site.

17 Further refinement of the ODP map, in line with the setback distances defined in the ODP text, will be required at the time of subdivision consent; however, Figure 2 of my evidence shows the updated ODP along with the approximate location of the springs (as identified by AEL) including the proposed minimum buffer distance (30 meters). This clearly shows that the springs (including the buffer distances) currently all lie within reserve land. The exact location of all the springs on the site will be confirmed during the subdivision consent stage.

18 As discussed in the evidence of Mr Taylor (paragraphs 30-33) there is limited national or regional guidance for assigning buffer distances for springs. Maintaining hydrology of the springs is essential in order to not adversely affect the ecological values of the springs. Mitigation strategies are available that could be utilised to avoid adverse effects on spring flows as detailed in the evidence of Mr Veendrick and Mr McLeod. With those measures in place, it is my opinion that the proposed minimum buffer distances to waterbodies provided in the evidence of Mr Taylor and shown in Figure 2 of my evidence, are sufficient to protect the ecological values of the springs.

19 In addition to the two spring fields discussed in the evidence of Mr Taylor, the area of low-lying land in the eastern side of the site has high ecological potential. This area was historically Raupo and Flax swamp (Canterbury Maps – black maps layer) and its location along the true right back of the LII River and at the confluence of Springs Creek provides an opportunity for wetland restoration. Currently, this is shown as a combination of stormwater wetland/reserve area (teal) and stormwater management area (blue) in the updated ODP. There is potential for discussion with Council regarding the development of this area, which could include vesting an area to Council to enable control over future wetland restoration. This could include wetland planting and naturalisation of the channelised waterways draining the site to result in a naturalised wetland area along the downstream reach of Springs Creek, and the true right bank of the Araiara/LII River. This potential opportunity is not relied on for the purposes of this evidence.

20 To achieve increased wetland extent and values, increase biodiversity values, and provide potential for increased filtration of contaminants to downgradient waterbodies (LII and Te Waihora/Lake Ellesmere) the ODP has been updated to provide the following:

20.1 Larger buffer distances (reserve space) to spring heads, Springs Creek and channelised drains, as discussed in the evidence of Mr Taylor and shown in Figure 2.

20.2 Increased wetland reserve land in the eastern low-lying area of the site.

20.3 Stormwater management area to be moved away from the flood prone eastern boundary and spring field, as discussed in the evidence of Mr O'Neill.

21 At the subdivision consent stage the enhancement in the form of wetland restoration within the low-lying eastern land, naturalisation and connection of spring-fed channels within the low-lying eastern area and native planting along the waterways and springs would be relevant matters for consideration, noting the inclusion of these matters within the ODP.

22 To provide further controls on maintaining and enhancing the current ecological values of aquatic features on the site, an Ecological Management Plan is included as a requirement within the ODP text. This plan would require assessment by Council and would need to include plans for spring head restoration, Springs Creek riparian management, aquatic buffer distances, waterway crossing management, wetland delineation following MfE guidelines[2] and wetland restoration and enhancement options within the proposed reserve space. Ongoing maintenance and monitoring would also be required.

RESPONSE TO SECTION 42A - ECOLOGY

23 I have reviewed the section 42a ecology report and agree that the springs within the site are of high ecological value and need to be protected as part of the Plan Change. I agree that spring flows are highly sensitive to urban development but consider that with careful design at the time of subdivision, including mitigation to avoid redirecting groundwater away from springs and appropriate setback distances for earthworks and development the ecological values of the springs can be maintained.

[2] Ministry for the Environment 2020. Wetland delineation protocols. Ministry for the Environment, Wellington. No. 10 p.

24 In Paragraph 9 of the s42a ecology report Dr. Burrell states that, *"Overall, I consider it likely that the landuse change associated with PC69 will reduce the value and extent of wetlands and springs in the area."* While I agree with this statement when referring to the submitted ODP, I consider that with the modifications now included in the amended ODP, the proposed land use change provides an opportunity for net ecological betterment compared to the current condition and extent of waterways, springs and associated wetlands located on the site that are within an active dairy farming operation. This can be achieved through careful design and enhancement of natural areas within the site, including the spring-fed headwaters of Spring Creek, isolated spring heads and the lowland area to the east of the site which has potential for wetland restoration. An Ecological Management Plan for the site is proposed to enable controls on proposed protection, enhancement and ongoing maintenance and monitoring of aquatic features on site.

25 As outlined in the s42a ecology report (paragraph 15 and 16), as well as the evidence of Mr Veendrick, the highest risk of reduced spring ecological values is from shallow groundwater being intercepted by utilities which could reduce the spring flows. Recognizing the lack of data on spring recharge in this area I agree that controls should be put in place to avoid short circuiting, or diversion of groundwater and therefore a reduction in spring ecological value. Methods to achieve this are provided in the evidence of Mr Veendrick and Mr. McLeod and have been incorporated within the amended ODP.

26 A buffer distance from springs of between 30 – 100 m has been proposed by Dr Burrell in the s42a report (paragraph 21). I agree that increased buffer distances would reduce potential impacts or urbanization. Mr Taylor has proposed the following minimum buffer distances, which I agree with and are now included in the amended ODP and Figure 2. I note that buffer distances for many areas will be greater than those provided below, in particular within the proposed reserve space in the southeastern side of the site:

26.1 20m from Springs Creek.

26.2 30m from springheads.

26.3 10m from channelized waterways.

27 Isolated natural inland wetlands have the potential to be located within the site; however, as the site has been extensively drained and planted/maintained as exotic pasture the majority of the site is considered to be 'improved pasture'. It is acknowledged that this cannot be validated without a formal wetland delineation. If a future wetland delineation confirms natural inland wetlands on site,

impacts to wetlands within 100m of the site will need to be assessed.

CONCLUSIONS

28 It is my opinion that the provided minimum setback distances from waterways on the site (springheads, watercourses and channelised drainages) and the requirement for an Ecological Management Plan will provide controls on potential impacts to the site. The Plan Change has the potential to improve the current ecological values of aquatic features within the site (which are degraded by current land use) including historical wetland values but requires careful design and mitigation strategies to provide ecological betterment. The amended ODP now incorporates these measures and accordingly I support PC69 insofar as freshwater bodies and ecosystem values are concerned.

Dated: 4 November 2021

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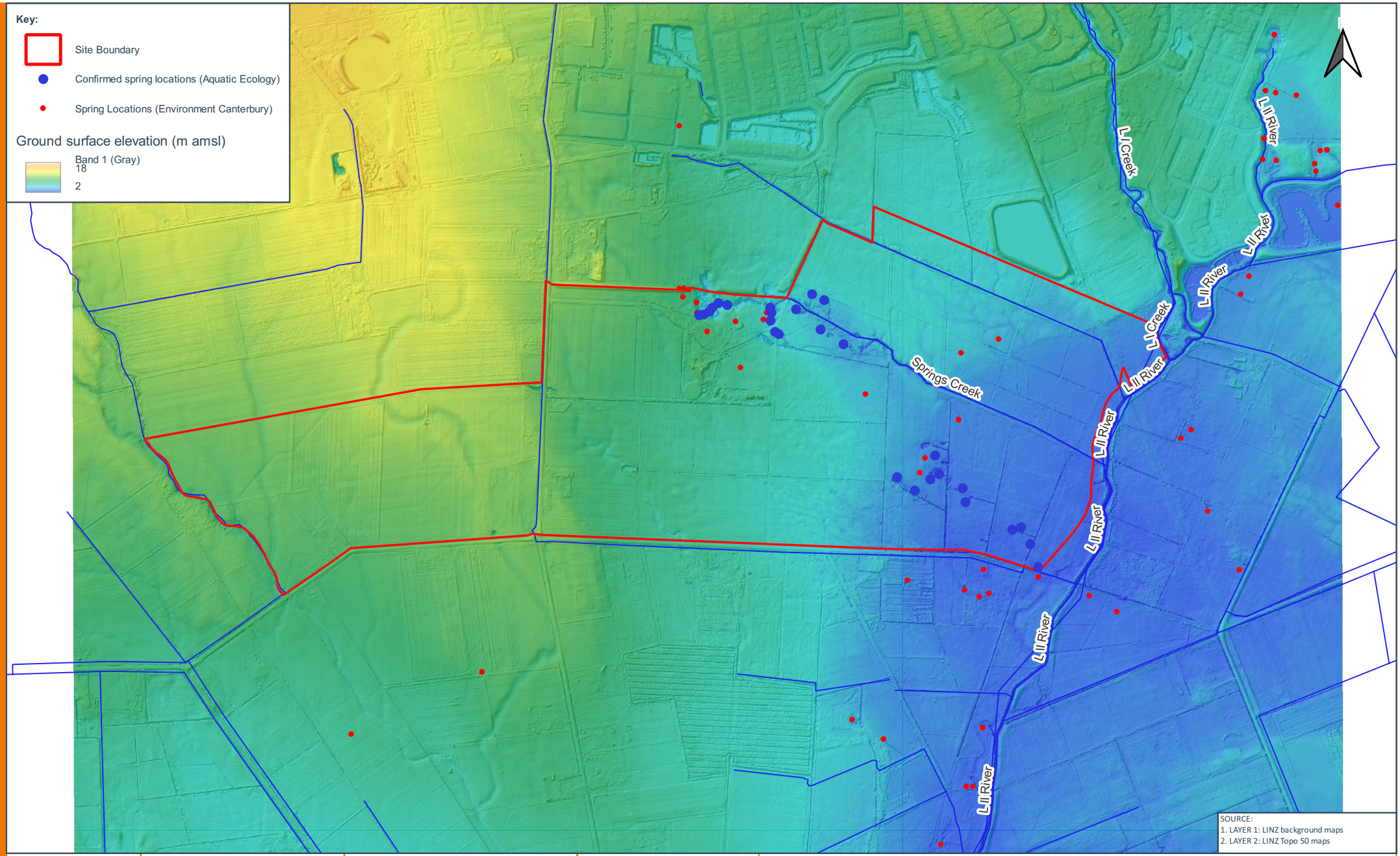
Laura Drummond



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CLIENT
Rolleston Industrial Development Limited

FIGURE
FIGURE 1: Locations of springs across the ODP area

PROJECT
Evidence of Laura Drummond for Rolleston Industrial Developments Limited

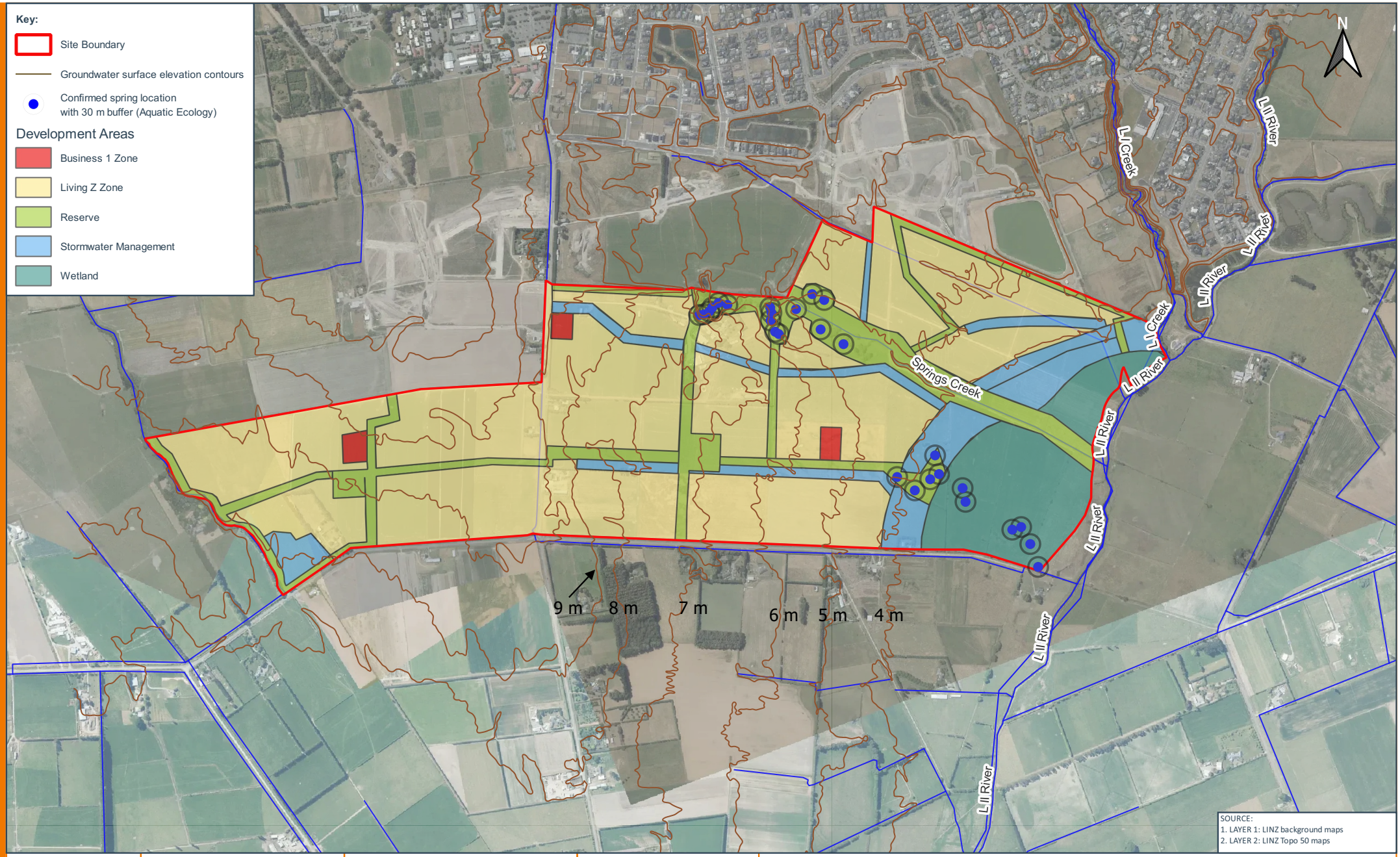

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FIGURE

FIGURE 2: Development areas and setback from confirmed spring locations

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