

**IN THE MATTER** of the Resource Management Act 1991  
**AND**  
**IN THE MATTER** of the hearing of submissions on the  
Proposed Regional Policy Statement for  
Otago 2021 (excluding parts determined to  
be a freshwater planning instrument)

**BY** **WAITAKI IRRIGATORS COLLECTIVE  
LIMITED**

**Submitters**

**TO** **OTAGO REGIONAL COUNCIL**

**Local authority**

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**STATEMENT OF EVIDENCE OF ELIZABETH JANET CASWELL SOAL ON BEHALF OF  
THE WAITAKI IRRIGATORS COLLECTIVE LIMITED**

Dated: 23 November 2022

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## **INTRODUCTION**

### **Qualifications and experience**

1. My name is Elizabeth Soal. I am a consultant providing specialist advice to government and private clients on matters relating to freshwater policy, legislation, governance, and regulations. I have been engaged by the Waitaki Irrigators Collective ("**WIC**") in relation to regional planning issues that affect the company and its shareholders.
2. My evidence is being presented in support of WIC's submission on the proposed Regional Policy Statement ("**PRPS**") for Otago 2021, not as expert evidence.

### **SCOPE OF EVIDENCE**

3. My evidence will address the following matters:
  - information regarding WIC and its members;
  - information regarding the importance of irrigation in the Lower Waitaki catchment and Otago; and
  - the importance of recognising irrigation infrastructure as "regionally significant" in the PRPS.

### **ABOUT THE WAITAKI IRRIGATORS COLLECTIVE LIMITED**

4. WIC is a company which represents the interests of six irrigation schemes as well as independent irrigators in the Lower Waitaki River catchment. Its shareholders take water from Lake Waitaki, the Lower Waitaki River, its tributaries, and connected groundwater, and use that water to irrigate approximately 80,000 hectares of land across North Otago and South Canterbury.
5. The irrigators within WIC contribute approximately \$550 million per annum in gross income to the local and national economies, and represent a capital value of land (with infrastructure) in excess of \$2.5 billion.
6. WIC's role is not operational (although it may facilitate technical or operational projects), but is to support and represent WIC's shareholders in matters related to irrigation, water use, environmental management, and related policies at (primarily) the district and regional levels. In this regard, WIC seeks to advocate on behalf of all irrigators in the Lower Waitaki River catchment on common issues.

7. The schemes and individuals within WIC use irrigation water for production across the primary sector, including the agriculture, horticulture, dairying, and viticulture industries. Some of the schemes also provide water for stock-drinking, industrial/commercial use, domestic supplies, sports clubs (for irrigation), and fire-fighting.
8. The shareholders of WIC are:
  - the Kurow-Dunroon Irrigation Company Limited ("**KDIC**");
  - the North Otago Irrigation Company Limited ("**NOIC**");
  - the Morven, Glenavy, Ikawai Irrigation Company Limited ("**MGI**");
  - the Maerewhenua District Water Resource Company Limited ("**MDWRC**");
  - the Lower Waitaki Irrigation Company Limited ("**LWIC**"); and
  - the Waitaki Independent Irrigators Incorporated Society ("**WIII**"). The Haka Valley Irrigation Company Limited ("**HVIL**") is a member of WIII.
9. WIC's members take water from the Canterbury region. However, the NOIC and LWIC schemes use that water within Otago. These two schemes represent a combined irrigated area of 38,000 hectares, which is approximately 40 percent of the irrigated land in Otago.
10. WIC represents around 600 farmers, as well as their families and employees across North Otago and South Canterbury.

### **THE ROLE OF IRRIGATION IN OTAGO**

11. Irrigation is of vital importance to the communities and economies of Otago, the South Island, and New Zealand as a whole. Numerous studies demonstrate the benefits that irrigation provides, across all areas of wellbeing. These benefits are discussed below, and it should be noted that none of these benefits accrue without the necessary infrastructure to abstract, store, convey, and apply irrigation water.
12. Otago is the second most significant region in New Zealand for irrigation, behind Canterbury. In 2019, there was 99,687 hectares of irrigation in Otago. Figure 1 shows the farm irrigated land area density in square kilometres.<sup>1</sup>

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<sup>1</sup> <https://www.stats.govt.nz/indicators/irrigated-land-published-april-2019/>

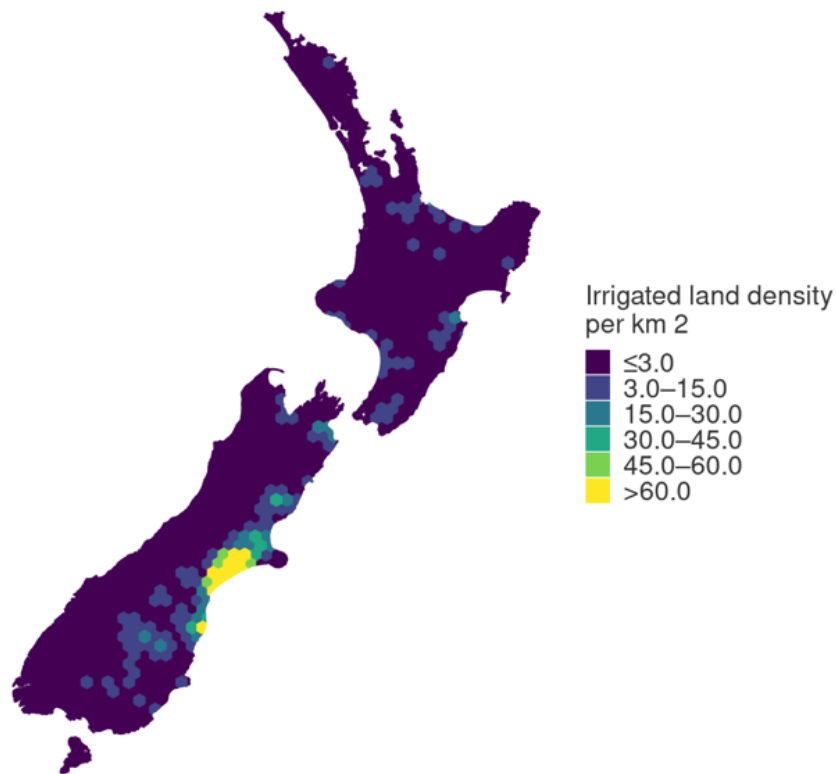


Figure 1: Irrigated land density per km<sup>2</sup> in 2019

13. In 2014 the New Zealand Institute for Economic Research produced a report titled *Value of Irrigation in New Zealand: An economy-wide assessment*.<sup>2</sup> The Report estimated the GDP contribution of Irrigation to the New Zealand economy and also considered what the effects on the economy might have been had irrigation development never occurred.
14. The Report noted (at page i) that “irrigation contributes to New Zealand economic activity in a number of direct and indirect ways:
  - it lifts agricultural production, which boost farm gate returns
  - this additional production draws in additional inputs such as agricultural services and transport
  - the extra on-farm volumes also lead to more activity in the primary processing sectors.

Irrigation is also felt more widely through higher employment, wages and returns to capital and land, all of which boost household spending on other goods and services.”

<sup>2</sup> <https://www.rmla.org.nz/wp-content/uploads/2016/12/NZIER-17040-Output-Value-of-Irrigation-final-report-17Nov.pdf>

15. The Report further concluded that ‘in a number of industries, particularly cropping and horticulture, financial margins and market demands are tight, and irrigation is the *only means* of ensuring a viable system...in the absence of irrigation a large number of production systems would most probably not be established” (p.6 – emphasis added).
16. The Report considered the potential implications of no irrigation at the regional as well as national level. Figure 2 sets out the difference in farm gate value if irrigation had never occurred. These effects are most significant for Canterbury, followed by Otago. This shows that the value derived from irrigated land is over four times higher than the dryland value.

Region	(A) Current farm gate value of irrigation (\$m)	(B) Farm gate value if irrigation never occurred (\$m)	(C) = A - B Net farm gate value of irrigation (\$m)
Northland	\$41.0	\$21.2	\$19.8
Auckland	\$34.4	\$20.6	\$13.7
Waikato	\$112.9	\$81.5	\$31.4
Bay of Plenty	\$120.5	\$64.5	\$56.0
Gisborne	\$10.8	\$1.3	\$9.4
Hawke’s Bay	\$109.7	\$30.8	\$78.9
Taranaki	\$35.6	\$23.3	\$12.2
Manawatu-Wanganui	\$99.2	\$56.1	\$43.1
Wellington	\$76.7	\$53.6	\$23.2
Marlborough	\$185.9	\$37.4	\$148.6
Nelson	\$0.2	\$0.0	\$0.2
Tasman	\$77.0	\$18.2	\$58.8
Canterbury	\$1,950.2	\$556.1	\$1,394.1
West Coast	\$5.9	\$3.0	\$2.8
Otago	\$338.5	\$74.1	\$264.4
Southland	\$69.7	\$50.4	\$19.3
Total	\$3,268.1	\$1,092.3	\$2,175.8

Figure 2: Farm gate value of irrigation, by region

17. These data were also broken down by major farm type. Figure 3 shows the percentage of each land use type that would be reduced if irrigation were not present. This shows that a number of critical sectors in Otago would be significantly reduced without irrigation, including much of our horticulture, pipfruit, stonefruit, viticulture, and dairying sectors.

Farm type	Area under irrigation (ha)	Area out (ha)	Area out (%)
Nursery	62	0	0%
Vegetables	265	133	50%
Viticulture	1,685	1,517	90%
Berryfruit	65	39	60%
Pipfruit/stonefruit	14,157	9,910	70%
Other horticulture	92	83	90%
Sheep and Beef	49,179	49,179	0%
Cropping	4,539	1,135	25%
Dairy	32,253	30,640	95%
Deer	3,456	3,456	0%
Pigs/horses	481	120	25%
Total	106,234	96,212	

*Figure 3: Assumed impact if irrigation had never occurred in Otago*

18. Even for those sectors that could still operate under dryland conditions, returns, flexibility, resilience, and access to markets would be significantly reduced. These assumptions are as follows:
  - Nursery production: same area, but with lower profitability
  - Vegetables: still grown on good soils around Oamaru, but with production levels reduced by 25-33 percent and with high variability.
  - Viticulture: Reduced by 90 percent, as irrigation needed for establishment and to maintain yields.
  - Berryfruit: around 25 percent would still be grown on the Taieri, at Kakanui, and at Teviot.
  - Pipfruit/stonefruit: 50 percent area still in production, but with reduced yields
  - Other horticulture: unlikely to have been developed
19. The Report concluded that in the absence of irrigation “the vegetable and horticultural industries would only be sufficient for domestic supply...New Zealand would not be competitive in international markets with regard to the volume, consistency of supply, and consistency of product” (p 7).
20. The benefits which irrigation brings to the communities in Otago stretch well beyond the economic dollars.
21. Research has found that “the growth in population of irrigated areas...becomes significant...when compared with the fall in population of surrounding non-irrigated rural communities” and that “irrigation provides an economic climate in which entrepreneurial innovation flourishes, not only on the land, but also in the service

towns”.<sup>3</sup> The same authors produced a further paper the following year which used quantitative data to determine the social impacts of irrigation. It found the following:

- the communities with irrigation had higher proportions of children in their population than the national average;
- the communities with irrigation had a greater proportion of farmers and farm workers under the age of 30 than the national population;
- since irrigation development commenced, there had been a steady increase in the proportion of residents with tertiary qualifications, and this proportion is higher than the national average;
- the increase in the proportion of residents with “higher status” occupations is much higher than the national trend;
- there was a higher proportional increase in the number of wage and salary earners and employers than the national trend;
- there was an increase in available full-time employment above the national trend; and
- household incomes have improved relative to the rest of New Zealand.<sup>4</sup>

22. It should be noted that one of the areas specifically examined by this study was the Waitaki Plains community and how it benefited from the presence of the LWIC.

23. A technical paper released by the then Ministry of Agriculture and Forestry found that around 5,300 full-time equivalent positions have been created by irrigation net of the alternative dryland use, equating to \$158 million worth of wages and salaries. This paper also referred to the following social outcomes that are associated with irrigation development:

- Employment increases overall;
- communities are sheltered from the worst impacts of dry periods;
- there is an increase in the diversity of business activities, and therefore greater community security if there are sectoral downturns;
- there is better provision of services, which increases optimism and innovation in communities;
- it is in the national interest in supporting rural communities to be stronger and more resilient than they would otherwise be.

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<sup>3</sup> McRostie Little, H. and Taylor, N. *Social and Economic Impacts Associated with Irrigated Land Use Change*, paper presented to the New Zealand Association for Agricultural and Resource Economics Conference, Blenheim, July 2001.

<sup>4</sup> McClintock, W., Taylor, N. and McCrostie Little, H. *Social Assessment of Land Use Change Under Irrigation*, Working Paper 33, November 2002.

Available from [http://www.tba.co.nz/pdf\\_papers/2002\\_wp\\_33\\_land\\_use\\_change.pdf](http://www.tba.co.nz/pdf_papers/2002_wp_33_land_use_change.pdf)

24. The report went on to state: “for dryland farming areas, irrigation is the most realistic means to grow an inclusive, innovative local economy and therefore to create opportunities to reduce inequalities [these areas] experience in health, education, employment and housing.”<sup>5</sup>
25. In 2013, WIC commissioned a research report to examine the social and economic impacts of irrigation on the communities on the South Bank of the Waitaki River, between Kurow and Black Point.<sup>6</sup> The study compared outcomes between the land area under irrigation with the outcomes for the same area if it was reverted to dryland. This study concluded that irrigation on the (approximately) 6,500 hectares included in the study area provides the following direct financial benefits to the local economy:
- \$70 million per annum in increased revenue
  - \$41.8 million per annum in increased expenditure
  - \$36.7 million per annum of additional value added.
26. The study also found that irrigation in the area creates on-farm employment for around 140-150 additional people, and this enables the survival of community organisations, sports clubs, and other social institutions. The down-stream effects are also significant, creating employment and opportunities for the wider agricultural-service sector, processing industries, and so-on.
27. It is clear that irrigation is of critical significance to Otago. WIC submits that it is crucial that the PRPS reflects this, by recognising the infrastructure required to abstract, store, convey, and distribute irrigation water as being regionally significant.

### **REGIONALLY SIGNIFICANT INFRASTRUCTURE**

28. The PRPS defines regionally significant infrastructure at page 33. It is noted that some forms of water supply are defined as being regionally significant. This includes community drinking water abstraction, supply treatment and distribution infrastructure that provides no fewer than 25 households for drinking water for not less than 90 days each calendar year, and community water supply abstraction, treatment and distribution infrastructure (excluding delivery systems or infrastructure primarily deployed for the delivery of water for irrigation of land or rural drinking-water supplies).

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<sup>5</sup> Ministry of Agriculture and Forestry, *The Economic Value of Irrigation in New Zealand*, Technical Paper, April 2004

<sup>6</sup> This research was undertaken as part of a wider strategic water management study which considered options and outcomes around future irrigation optimisation in the area and was partly funded by the Ministry for Primary Industries through the Irrigation Acceleration Fund.



29. This distinction between community supply infrastructure and irrigation supply infrastructure seems somewhat arbitrary and may result in unintended consequences in some circumstances. For example, the town of Oamaru is supplied water by way of the LWIC scheme infrastructure – infrastructure which is “primarily deployed” for irrigation supply.
  
30. The LWIC scheme has an intake point at Black Point on the Lower Waitaki River. The water is then conveyed via LWIC’s race network to a buffer pond at the corner of Ferry Road and SH83 on the Waitaki Plains. The water is then conveyed via race and pipe to Oamaru town’s treatment facility on Reservoir Road (see map, below).



# LWIC infrastructure points

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0 2 4 6 8 Kilometres

Scale: 1:100,000 @A3

Map Created by Canterbury Maps on 23/11/2022 at 2:10 PM



31. According to the PRPS definition, the infrastructure from the intake structure at the point of abstraction and through the Scheme's race and pond network is not regionally significant until the town offtake point is reached at the orange marker – around 30 kilometres away. One of the reasons behind the construction of the Ferry Road buffer bond was to ensure there would be a continuous supply available for Oamaru – even in emergency and extreme weather events. This important infrastructure supplies over 16,000 residents and its environs.
32. All of this infrastructure should be classified as significant, both in terms of the benefits provided by the irrigation and in terms of the water provided to the town of Oamaru.

### **OTHER PLANNING INSTRUMENTS**

33. Although lower down in the planning instrument hierarchy, the provisions within the Waitaki and Central Otago District Plans align with the policies contained within the PRPS in the INF – Infrastructure chapter.
34. Policy EIT-INF-P15 – Protecting nationally or regionally significant infrastructure states that rules will:
  - Seek to avoid the establishment of activities that may result in reverse sensitivity effects on national or regionally significant infrastructure and/or where they may compromise the functional or operational needs of nationally or regionally significant infrastructure.
35. This Policy aligns with the policies within the CODC and WDC plans which also seek to prevent reverse sensitivity effects on the functional or operational needs of significant infrastructure – including that for irrigation.
36. However, it is important that the PRPS itself includes irrigation infrastructure as being regionally significant to ensure that further changes to district plans continue to provide this important recognition.
37. Irrigation infrastructure matches the description provided in the EIT-INF-E2 explanation, where it is stated “the policies in this section recognise the critical importance of infrastructure to communities...as many assets rely on particular resource requirements or specific locations...The policies also seek to manage the potential adverse effects of other activities on nationally and regionally significant infrastructure to ensure the ability to operate these assets is not compromised.”

38. The Canterbury Regional Policy Statement (“CPRS”)<sup>7</sup> recognises the critical importance of irrigation infrastructure to that region by including irrigation infrastructure within that to be considered regionally significant and it is WIC’s submission that the Otago region should also do so.
39. The definition section of the CRPS provides that “regionally significant infrastructure is:  
...  
11. Established community-scale irrigation and stockwater infrastructure (p. 244)
40. Community-scale irrigation, stockwater and rural drain age infrastructure is defined as “any community scale intake, canal, pipe, drain, pumps and overflow network, including associated structures, necessary to convey and store water for enhancing primary productivity and that serves multiple properties and is centrally administered.” (p. 241).
41. Various objectives and policies within the CPRS provide for the needs of regionally significant infrastructure and reflect its importance to the region. For example, at pages 47-48, Objective 5.2.2: Integration of land-use and regionally significant infrastructure (Wider Region) states:

In relation to the integration of land use and regionally significant infrastructure:

1. To recognise the benefits of enabling people and communities to provide for their social, economic and cultural well-being and health and safety and to provide for infrastructure that is regionally significant to the extent that it promotes sustainable management in accordance with the RMA
2. To achieve patterns and sequencing of land-use with regionally significant infrastructure in the wider region so that: a. development does not result in adverse effects on the operation, use and development of regionally significant b. adverse effects resulting from the development or operation of regionally significant infrastructure are avoided, remedied or mitigated as fully as practicable. c. there is increased sustainability, efficiency and liveability.

*Principal reasons and explanation*

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<sup>7</sup> <https://www.ecan.govt.nz/your-region/plans-strategies-and-bylaws/canterbury-regional-policy-statement/>

Regionally significant infrastructure in the wider region is essential to enable the well-being, health and safety of people and communities and has the following characteristics:

1. it significantly contributes to the social, economic and cultural well-being of people and communities;
2. it is the subject of considerable financial investment;
3. it is unlikely to be readily replaced or duplicated; and
4. it requires integrated management with other natural and physical resources...

Recognition of the importance of regionally significant infrastructure will lead to greater weight being given to its requirements. As a consequence, it is desirable to manage the location and form of the surrounding development, to reduce incompatibility and conflicts.

42. It is acknowledged that District Plans are lower order planning instruments than an RPS, it is worthwhile providing examples from planning instruments in the Waitaki and Central Otago Districts (being the two Otago districts within the region where irrigation is of most significance) as a means of illustrating how important irrigation is to those districts and how those districts have provided for its recognition in their planning frameworks.

*Draft Waitaki District Plan*

43. The Waitaki District Council released its draft District Plan for consultation with the community in June 2022. A proposed plan is to be notified in 2023.
44. In the definitions section, the draft Plan provides for irrigation infrastructure as being an “essential structure” (p. 34). “Regionally significant infrastructure” is defined as including “established community-scale irrigation and stock water infrastructure” (pp. 55-56).
45. Provision for regionally significant infrastructure is provided throughout the draft Plan. For example, INF-P1 (p. 125) provides that the plan will:

Recognise and provide for the social, economic, cultural, and economic wellbeing benefits of regionally significant infrastructure, including:

...

4. existing community-scale irrigation and stockwater infrastructure, which supports primary production activities.

*Central Otago District Plan*

46. The Central Otago District Plan recognises the importance of irrigation to the District, both in terms of the irrigation providing the water and the water itself as a means of sustaining a “special resource.” For example, at p.2:17, the plan considers irrigation as being critical to the significant issue of special land resources:

“There are some areas of land in the District that because of particular soil characteristics and quality that in combination with the local climate and irrigation are considered to be a special resource. The potential of this resource to meet the reasonably foreseeable needs of future generations should be sustained. This potential is capable of being compromised by activities which have the effect of reducing the life-supporting capacity of these soils...Availability of an adequate and reliable water supply, rather than the inherent soil characteristics, is the major limiting factor on land potential in the District.”

47. Section 13 of the Central Otago District Plan relates to infrastructure, energy, and utilities:

Policy 13.4.1 Positive contribution of infrastructure

To recognise the essential and positive contribution that infrastructure and it's (sic) ongoing development makes to the social, economic, and cultural wellbeing, and to the health and safety of the District's people and communities (p. 13:5)

Policy 13.4.2 Public Works and Network Utilities<sup>8</sup>

To enable the development and operation of public works and network utilities (p. 13:6)

Rule 13.7.5 Existing Network Utilities

All network utilities...in existence at the date of public notification...and their operation are permitted activities (p. 13:19)

Rule 13.7.7 Operation, maintenance, repair, upgrading and removal of network utilities

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<sup>8</sup> Network Utilities has the meaning provided in the RMA, which includes irrigation water supply networks (ss 2 and 166)

The operation, maintenance, repair, replacement, reconstruction, and upgrading of network utilities...(including existing network utilities and earthworks to maintain the utility's function) is a permitted activity.

## **CONCLUSION**

48. Irrigation infrastructure is regionally significant in Otago. WIC submits that this must be reflected in the PRPS as it is in Canterbury and the proposed District Plan for the Waitaki. The definition of regionally significant infrastructure be amended to include community-scale irrigation infrastructure.
49. As stated in the PRPS, "infrastructure is fundamental to the health and safety of communities, and their social and economic well-being and functioning."
50. Although it is recognised that irrigation is not present across the entire region, irrigation is a significant contributor to the economy of Otago as a whole. Certain sectors such as viticulture, horticulture, dairy, and specialist sheep and beef farming (for which Otago is renowned) are significantly reliant on irrigation for them to remain viable and to allow Otago farmers and growers to access critical overseas markets.
51. The PRPS should recognise the critical nature of irrigation through providing for the operations, maintenance, and development of such infrastructure just as it does for other types of regionally significant infrastructure.



**Elizabeth Soal**

23 November 2022