

**BEFORE THE FRESHWATER COMMISSION**

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

**IN THE MATTER** of an original submission on the  
Proposed Regional Policy  
Statement for Otago 2021  
(**PRPS**)

**BETWEEN** **OTAGO WATER RESOURCE  
USER GROUP**

**Submitter FPI043**

**FEDERATED FARMERS NZ  
INC**

**Submitter FPI026 and  
FSFPI026**

**DAIRY NZ**

**Submitter FPI024 and  
FSFPI024**

**AND** **OTAGO REGIONAL COUNCIL**

**Local Authority**

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**EVIDENCE IN CHIEF OF TIM O’SULLIVAN:  
ADDITIONAL EVIDENCE FOR FRESHWATER PARTS**

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**EVIDENCE IN CHIEF OF TIM O’SULLIVAN: ADDITIONAL EVIDENCE  
FOR FRESHWATER PARTS**

1. This brief of evidence is the same as the brief filed in relation to the Otago Regional Policy Statement 2021 - non freshwater parts. New evidence not previously provided to the non-freshwater panel is added in text that is shaded grey for ease of identification.
2. My full name is Tim O’Sullivan. I am a Director and Shareholder of Sustainable Prospects Limited and Director of Dairy Creek Irrigation Company Limited.
3. Sustainable Prospects owns 3 properties in Central Otago:
  - (a) Lone Pine – was a beef finishing and dairy grazing block. It is now transitioning to a horticultural block. It comprises 372Ha with approximately 335 Ha of irrigated land.
  - (b) MacArthur – located near Alexandra and utilised to grow cereal crops and winter feed. This property comprises 252ha of which 235ha is irrigated via the Dairy Creek Irrigation scheme.
  - (c) Swann Rd – located on the sugar loaf at Lowburn in Cromwell. 120ha currently being converted to horticulture and is soon to be irrigated out of 2 bores that are linked to the Clutha catchment.
4. Dairy Creek Irrigation Company Limited is an irrigation company formed in 2013 to develop an irrigation scheme near Clyde in Central Otago. I am a Director and Shareholder of the company and was heavily involved in the planning and development of the scheme. I continue to be involved in the operation of the scheme. At its full extent it will provide irrigation water to approximately 1800-2000ha of land with water taken from the Clutha River / Mata Au at Dairy Creek inlet on Lake Dunstan.
5. The purpose of this evidence is to:

- (a) describe recent investigations and development that we have undertaken to move our irrigation water supply from Stratford Creek on the Pisa Range to Lake Dunstan for the supply to Lone Pine and Swann Road.
- (b) Describe the process followed by Dairy Creek to develop Dairy Creek Scheme.
- (c) To assist the panel in understanding the 'real world' complexities of undertaking these types of developments.

### **Swann Road Development**

- 6. We purchased Swann Rd in 2018. It came with a jointly held deemed permit to take 69l/s from Stratford Creek, a tributary of the Lowburn with its headwaters located on the Pisa Range.
- 7. There was relatively limited data available in relation to the reliability of the Stratford take as water monitoring had only commenced recently. This made modelling of water availability quite difficult. What we knew was that the take authorised by the deemed permit typically dried the Stratford Creek entirely, suggesting that reliability would be compromised at times.
- 8. We were also cognisant of the likely implications of climate change. Flows in the Stratford Creek are currently held up during Spring/early Summer by snow melt. If snowfalls reduce we anticipated flows in the Creek to change and become less reliable due to reduced 'storage' provided by snow melt.
- 9. We engaged Landpro to assist us with the investigations and preparation of an application to renew the Stratford Creek permit. Through this process it became apparent that to provide the level of reliability that we wanted for our operations moving forward we would need to establish significant storage.
- 10. When developing storage, you effectively have two options:
  - (a) A small footprint, but deep water; or

- (b) A large footprint, with shallow water.
11. There are advantages and disadvantages with each. In the first case there are significant engineering and compliance requirements to store water, particularly at depths in excess of 4m (we were looking at 10-12m in this case), but the advantage is that you 'save' on the land costs by keeping the overall footprint smaller. In the second case the costs of the dam become long term costs associated with the lost production from the larger area of land which is rendered unproductive because it is underwater.
  12. When we assessed our options for a dam it became apparent our best option was going to be a large 5-6ha pond. That equates to over \$300,000 in land becoming unavailable for ongoing productive purposes. It was also likely that there would significant compliance and engineering challenges due to the location and downstream properties that would be deemed affected via a dam break analysis. Our catchment effectively includes the rural residential/residential development at Lowburn. Obviously, the stakes are reasonably high if there is a population of people downstream of a large dam.
  13. Our preliminary investigations indicated a construction cost for the dam in excess of \$800,000.
  14. We proceeded with preparation and filing of the necessary consents. Based on the pre-lodgement discussions with Council our application sought a consent term of 20 years. Certainty regarding access to water is an important matter when such significant infrastructure investment is required.
  15. As part of this process, we consulted with various affected parties including the Department of Conservation and Iwi. During the course of the discussions Plan Change 7 was notified. There was an immediate change in attitude from the other parties, particularly Aukaha who sought to 'enforce' the 6-year term of consents immediately. Our proposed developments were totally untenable with

a 6-year term. We simply were not able to obtain the necessary funding to complete the development required.

16. The introduction of Plan Change 7 gave us pause and forced us to reconsider our options. We began investigating whether it would be possible to transfer our take to Dunstan. Over the next 9-12 months we completed the following investigations:
  - (a) Overall feasibility of this option.
  - (b) Identification of possible bore locations adjacent to Lake Dunstan.
  - (c) Identification of landowners that we would need to obtain approval from, which included:
    - (i) 2 private landowners – over whose land 1800m of pipe infrastructure would travel.
    - (ii) Land Information New Zealand – as owner of the land where the bores would go.
    - (iii) The Collie Club as Lessee of the land where the bores would go.
    - (iv) New Zealand Transport Agency as owners of State Highway 6, which we needed to place a pipe under.
    - (v) Central Otago District Council as owner of reserve land on the landward side of SH6.
  - (d) Discussions and planning with Aurora Energy to determine what electricity infrastructure would be required to supply the bore pumps;
  - (e) Approach and negotiate commercial arrangements with landowners, including:

- (i) Easements with the two private landowners. In the end these approvals cost us several hundred thousand dollars.
  - (ii) Agreement with the Collie Club including providing them with a permanent electricity supply to their club rooms as part of the installation of our own electricity supply to the bores.
  - (iii) Licence to occupy the Road.
  - (iv) Easements for the Council reserve.
  - (v) Easements for new Aurora Energy infrastructure.
  - (vi) Easements for the LINZ Land.
- (f) Various other regulatory approvals including:
- (i) Resource consent from the CODC to construct the pipeline. The pipe traverses up the side of Sugarloaf an identified outstanding natural feature. Therefore, the earthworks associated construction needed to be carefully planned to ensure the ONF was not adversely affected.
  - (ii) Road opening authorities for the works within the State Highway.
17. As a general comment, the various government agencies that we had to deal with were typically unresponsive. Concerted efforts were required by us and our consultant team to ensure matters were being progressed. There was simply no urgency on behalf of these organisation to progress matters. Much of this occurred in parallel with ongoing consultation in relation to the permits required by the ORC.
18. We found ourselves almost at an impasse with affected parties due to the issue of term. Given the massive investment required to facilitate this new proposal we simply could not accept a consent term of 6

years. We were proposing to completely surrender the deemed permit rights from the Stratford Creek enabling significant ecological improvements to accrue within that water body. In recognition of this we wanted to secure a 20-year permit for the new scheme.

19. After many many months of discussions, we ultimately agreed to live with a 12-year permit in order to avoid the costs, delay and uncertainty of a contested hearing process. To this day I feel quite frustrated about that part of the process.
20. Having finally secured the necessary water permits we progressed with more detailed design processes. As at the time of writing this evidence (August 2022) there is about 8 weeks to go in the construction timetable.
21. It has effectively taken us 3.5 years from start to finish, which on reflection was probably a pretty good result. It has been a concerted effort and we have pushed things along consistently. I can easily imagine situations where these timeframes blow out for various reasons. For many of the processes or approvals there is a real lack of certainty about how long things will take.
22. If we had been unable to reach agreement with the Collie Club or the private landowners we would have been back to square one.
23. The 110 ha of irrigation area will be planted out in roughly 70ha of cherries and the balance in grapes. The first 40ha of cherries are ready to plant as soon as we complete the construction of the irrigation infrastructure. It will then be approximately 6-8 years before this development reaches profitability.
24. In the case of the grapes – it is approximately 6 years before they will reach full production. In light of this it is easy to understand why the term of the consent was such a critical issue for us and why 12 years is only just adequate.
25. Overall, the development has cost roughly \$2M. This does not include the costs associated with establishing the horticultural and viticultural

activities which currently cost in the order of \$200,000 per hectare. It also does not include the costs associated with obtaining the necessary consents and approvals which came to approximately \$200,000.

### **Dairy Creek Development**

26. The Dairy Creek irrigation scheme is another development that I have been heavily involved in. Effectively we picked up an existing resource consent to take water from the Clutha and set about implementing it. The catalyst for this from my perspective was the development of our blocks within the Waikerikeri.

#### *Background to the Dairy Creek consents*

27. In the 1990's the Manuherikia Irrigation Society identified approximately 6000ha of land (from the Clutha through to roughly Chatto Creek in the Manuherikia Valley) that could be irrigated by water from Dairy Creek. On the basis of these investigations the Society sought and obtained water permits to take up to 3.77m<sup>3</sup> for 20hrs a day. These permits were obtained in 2002.
28. Over the later years the take point for this permit was moved out to the lake but ultimately moved back to the Dairy Creek inlet, in part so that access to the take location could be provided via a paper road, avoiding the need for approvals from Contact Energy who own land or have operating easements over much of the Land surrounding Lake Dunstan.
29. In 2014/2015 we were undertaking due diligence on a land purchase in the area, for the block we now refer to as Lone Pine and MacArthur. As part of that process, I became aware of the water take permit and started to look into the options to gain access to this water.
30. I, along with a handful of others began to develop possible design options for a scheme. We identified a pathway for the main pipeline using existing roads where possible and only requiring approval from



4 private landowners. The 4 landowners were all interested in obtaining supply from the scheme.

31. We developed the scheme based on utilising 1050l/s and having an identified command area of 1800-2000ha. It is quite a complicated scheme due to the challenges associated with engineering and elevation within the scheme. Effectively water needs to be pumped up 160m of elevation to access the irrigation areas within the scheme's command area. Pumping water this high obviously requires a lot of electricity. Our investigations revealed that the costs of obtaining the necessary electricity supply would be in the order of \$800,000 in capital costs.
32. Based on our preliminary design work we determined that the scheme would cost in the order of \$10M to construct. With that knowledge we set about finding the capital necessary to fund the development.
33. Thankfully, local energy company Pioneer Energy Limited came to the party. The scheme aligned well with Pioneer's own objectives providing a good return on the investment, but also opportunity to provide electricity supply (in the order to 2MW for the irrigation season) and project and asset management services to the scheme. It has been a really effective partnership and one that really enabled the scheme to get off the ground.
34. With our source of capital secure we moved to sell down the available water. We pushed to sell 1200l/s given the variability in land uses that the scheme would be supplying allowing us to oversubscribe the scheme to a degree and making it as efficient as possible.
35. Construction of the scheme commenced in 2016 and water was available for spring/summer 2017/2018.
36. We are ultimately able to supply water to our water users for equivalent capital costs of \$6,000 per ha. The interest on this capital is accounted for in the fixed costs, in addition to this is R&M,

insurance, admin & consent compliance. The total fixed charge for the 21-22 season was \$789/ha. The variable charges are associated with energy only and last season were calculated at approx. \$276. When combining the two this makes the supply probably one of the most expensive in Otago, but on par with many of the newer schemes in areas such as Canterbury.

37. For most of the people that we supply with water there are also associated land development costs. In my experience converting dryland pasture to irrigation costs approximately \$6,000-8,000 per hectare. These costs include the likes of re fencing, re contouring (where required), tree removal, sowing new pasture etc. The costs are significantly more expensive if water users are developing horticulture or viticulture.
38. Currently the scheme is supplying water to 1,200ha of land. This includes one dairy unit (350ha), dry stock farms (600ha) and the balance in horticulture and viticulture.
39. In the future we would like to further investigate scheme storage in the order of 400,000-500,000m<sup>3</sup>. This would enable us to move to off-peak pumping which would reduce operational costs significantly (the difference in peak and off-peak electricity prices can be in the order of 3c per kw) and enable us to support a larger command area (approximately 20%) with the same infrastructure.
40. As I discussed above in relation to the Swann Rd project developing large storage facilities is not straight forward. The scheme has many of the same challenges as Swann Rd – the terrain is difficult and there are likely to be some reasonable populations of people within the path of water if a scheme dam were to fail.

### **Conclusions**

41. Both projects have been significant and complex undertakings. There are many moving parts and often it is necessary to work with other organisations that do not have the sense of urgency that we might as the scheme developers. In some cases, those organisations (such as

the electricity distribution companies) have their own constraints (such as network capacity, asset planning and funding) that take time to work through.

42. We have required support and input from a multitude of consultants including planners, lawyers, engineers, hydrologists, freshwater ecologists and surveyors. Often other stakeholders have also required support from their own experts in similar fields. Progress can be constrained by the capacity of the people working in these disciplines who have multiple projects on the go themselves.
43. There can also be individual parties who may present an insurmountable barrier to a project and could at any time pull the rug out from under a project. We have been reasonably lucky in both examples above to have only hit 'snags' rather than 'showstoppers'.
44. What we have done is at the 'sharp end' of the resource management process. It is the actual implementation. It is a significant step in and of itself and in many cases cannot commence until there is certainty regarding the regulatory framework and access to the necessary resources.

Date: 28 June 2023

T O'Sullivan

Sustainable Prospects Limited and Dairy Creek Irrigation Company Limited