

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF the Resource Management Act 1991

A N D

IN THE MATTER OF Water permit applications by Simons Pass Station Limited and
Simons Hill Station Limited

**STATEMENT OF EVIDENCE OF MICHAEL CAMPBELL COPELAND
DATED 11 NOVEMBER 2009**

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1. INTRODUCTION

- 1.1 My full name is Michael Campbell Copeland. I hold a Bachelor of Science degree in mathematics and a Master of Commerce degree in economics from the University of Canterbury. A summary of my curriculum vitae is attached as Appendix 1.
- 1.2 I am a consulting economist of Wellington, and currently I am Managing Director of Brown, Copeland and Company Limited, a firm of consulting economists which has undertaken a wide range of studies for public and private sector clients in New Zealand and overseas. During the period July 1990 to July 1994, I was also a member of the Commerce Commission. Prior to establishing Brown, Copeland and Company Limited in 1982, I spent six years at the New Zealand Institute of Economic Research, and three years at the Confederation of British Industry.
- 1.3 With respect to the Resource Management Act 1991 (RMA), I have prepared evidence for clients covering a number of development projects and policies. A selection of these is listed in my curriculum vitae in Appendix 1.
- 1.4 I have been asked by Simons Hill Station Limited and Simons Pass Station Limited to describe the economic effects of their proposals to increase the irrigated areas of their land using water sourced from the Tekapo Canal, Lake Pukaki, or the Pukaki Canal. Spray irrigation using centre pivots is proposed on both stations for this additional irrigation.
- 1.5 On Simons Hill Station the total area irrigated by the new system will be up to 2,400 hectares, although the new source of water will displace water from the Maryburn Irrigation Scheme which currently irrigates 190 hectares of the property. Thus the total additional area irrigated on Simons Hill Station will be up to 2,210 hectares.
- 1.6 On Simons Pass Station the total area irrigated will also be up to 2,400 hectares, including the conversion to centre pivot irrigation of 51 hectares of land currently irrigated by border dyke irrigation using water from the Maryburn Irrigation Scheme. This implies the additional area irrigated will be up to 2,349 hectares.

- 1.7 This implies a total irrigated area after the development of 4,800 hectares and with most being predominantly lighter soils on flat land, which is currently not farmed or farmed only at a very low level of intensity because of the limited grass growth.
- 1.8 Of the remaining area, some 1,500 hectares are boundary areas and not farmed, whilst the remainder will continue as non irrigated sheep and beef farming.
- 1.9 I confirm that I have read and am familiar with the Code of Conduct for Expert Witnesses in the Environment Court Consolidated Practice Note (2006). I agree to comply with that Code. Other than where I state that I am relying on the evidence of another person, my evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

2. SCOPE OF EVIDENCE

- 2.1 In my evidence, I firstly consider the relevance of economics to matters under the RMA and some general principles to follow in assessing economic effects.
- 2.2 I then consider the community-wide economic benefits from the irrigation of additional areas of Simons Hill Station and Simons Pass Station land and discuss how it is consistent with the efficient use of resources.
- 2.3 I then set out the conclusions of my evidence.

3. ECONOMICS AND THE RMA

Section 5: Community economic well being

- 3.1 Economic considerations are intertwined with the concept of the sustainable management of natural and physical resources, which is embodied in the RMA. In particular, Part II, section 5(2) refers to enabling "*people and communities to provide for their social, **economic** and cultural well being*" (emphasis added) as part of the meaning of "sustainable management" and therefore as part of the purpose of the RMA.
- 3.2 As well as indicating the relevance of economic impacts in considerations under the RMA, this section also refers to "people and communities" which, in my opinion, highlights that in assessing the impacts of a proposal it is the

impacts on the community, and not just the applicant or particular individuals or organisations, which must be taken into account.

Section 7: Efficient Use of Resources

3.3 Section 7(b) of the RMA requires that in achieving the purpose of the Act, all persons exercising functions and powers under it "*shall have particular regard to ... the efficient use and development of natural and physical resources*". In my opinion, this relates to the concept of economic efficiency. This interpretation was supported by the Environment Court in *Marlborough Ridge Ltd v Marlborough District Council* [1998] NZRMA 73, where the Court noted that all aspects of efficiency are "*economic*" by definition because economics is about the use of resources generally.

3.4 Economic efficiency can be defined as:

"the effectiveness of resource allocation in the economy as a whole such that outputs of goods and services fully reflect consumer preferences for these goods and services as well as individual goods and services being produced at minimum cost through appropriate mixes of factor inputs".¹

3.5 More generally, economic efficiency can be considered in terms of:

- maximising the value of outputs divided by the cost of inputs;
- maximising the value of outputs for a given cost of inputs;
- minimising the cost of inputs for a given value of outputs; and
- minimising waste.

3.6 Economists generally consider efficiency in terms of all outputs and all inputs and not just on the basis of partial efficiency measures such as water use efficiency given by the units of water required to irrigate a particular area of land or the area of land irrigated by a given amount of water. That is not to say water use efficiency is unimportant but since all resources are generally finite, it is necessary to have regard to the combined cost of all inputs and compare these with the value of outputs using monetary prices to assess efficiency.

¹ See Pass, Christopher and Lowes, Bryan. 1993. Collins Dictionary of Economics. (2nd edition). Harper Collins. Page 148.

- 3.7 However such an approach is complicated when one or more of the inputs (or outputs) such as water is not priced but does have a value or “opportunity cost” in that it would have value if available for alternative uses – e.g. for other irrigation schemes, electricity generation or in-stream uses.² In such circumstances it may be appropriate to give consideration to partial efficiency measures such as water use efficiency but in addition to, and not instead of, a comparison of the value of outputs and the value of other inputs (including land) using monetary prices.

Choosing the appropriate viewpoint

- 3.8 An essential first step in carrying out an evaluation of the positive and negative economic impacts of a development proposal (i.e. what economists would call a cost benefit exercise) is to define the appropriate viewpoint that is to be adopted. This helps to define which costs and benefits are relevant to the analysis. Typically a district or wider regional viewpoint is adopted and sometimes even a national viewpoint might be considered appropriate.³
- 3.9 In the case of increased irrigation on Simons Hill Station and Simons Pass Station, the economic impacts at the local level will be largely confined to the Mackenzie District in Canterbury and the Waitaki District in Otago and therefore I believe the community of interest consists of the residents, businesses, and other organisations within these two District’s boundaries. In a report⁴ prepared for Mackenzie Water Research Ltd by Butcher Partners Ltd in association with McFarlane Rural Business and attached as Appendix F to the evidence of John Kyle dated 2 September 2009, a Mackenzie Basin area has been defined to include the Pukaki Ward in the western part of Mackenzie District as well as the upper part of the Ahuriri-Coriedale Ward in the northern part of the Waitaki District. Excluded are the service centres of Fairlie and Albany which are in the Mackenzie District but included are Twizel, Omarama, Otematata and Aviemore which are in the Waitaki District. Consideration is given to the economic impacts of the proposed irrigation for this Mackenzie Basin area.

² The water in this case does have a cost in the sense that every applicant has had to pay for water shares on a per hectare basis and the considerable costs of studies to support the resource consent applications. In the case of Simons Hill Station Limited and Simons Pass Station Limited these costs have been estimated to total \$360 per hectare. However there is no alternative use value component built into the price of water.

³ For example, there was an inference that the “calling in” of Project Aqua and other Waitaki River water allocation cases for review by a central government appointed body was to broaden the viewpoint from a local district or regional level to a wider national level.

⁴ Upper Waitaki-Mackenzie Irrigation Economic Impact Assessment; April 2009.

- 3.10 However there are also economic impacts at the wider Mackenzie District and Waitaki District level, the Canterbury and Otago regional level and at the national level.

Private Versus Public Costs and Benefits

- 3.11 An analysis of the costs and benefits of the proposed additional irrigation will be undertaken by the applicants in terms of the financial impacts of the schemes on the two companies. This will cover the expected revenues, capital costs and operating costs of the project from their private commercial perspectives. These private sector or 'financial' cost benefit analyses will take account of any possible alternative sources of water and methods of transporting, storing and distributing the water, as well as the on-farm irrigation set up costs.
- 3.12 If consents are granted and Simons Hill Station and Simons Pass Station proceed with the additional irrigation, then it can be assumed that these private or financial costs and benefits have been properly analysed and that from the viewpoint of those with money at risk, the expected financial benefits exceed the expected costs.
- 3.13 However, not covered in any private sector cost benefit analysis are the so-called externalities – i.e. those side effects of the production process, which affect third parties, other than the buyer and seller. A range of economic externalities arising from the proposed additional irrigation are discussed in the next section of my evidence.

4. ECONOMIC BENEFITS OF ADDITIONAL SIMONS HILL STATION AND SIMONS PASS STATION IRRIGATION

Increased Economic Activity from Irrigation Scheme Construction and Farm Development⁵

- 4.1 The construction of the pipeline and associated facilities from the Tekapo Canal, Lake Pukaki, or the Pukaki canal, which has an estimated capital cost of between \$8 million and \$10 million, is expected to occur within twenty four months of resource consents being granted. This additional capital expenditure will generate additional employment and incomes for a construction workforce, most of who, would likely live permanently within, or commute weekly to, the Mackenzie Basin area during this period.

⁵

Data in this section provided by Simons Hill Station Limited and Simons Pass Station Limited.

- 4.2 In addition, the local economy will benefit from additional purchases of goods and services bought from local suppliers for the project over the twenty four month construction period, where such suppliers are available and suitable. Those who are likely to benefit will include local providers of accommodation, rock, aggregate, concrete and steel, retail trade outlets, cafes, bars and restaurants, crane hire firms, earthmoving and cartage contractors, electrical contractors and building contractors.
- 4.3 So in addition to the direct economic impacts, there are indirect impacts arising from:
- The effects on suppliers of goods and services provided to the site from within the region (i.e. the “forward and backward linkage” effects); and
 - The supply of goods and services to employees at the site and to those engaged in supplying goods and services to the site (i.e. the “induced” effects).
- 4.4 The additional pivot irrigation of 2,210 hectares of land on Simons Hill Station and 2,400 hectares of land on Simons Pass Station⁶ will require additional capital expenditure, estimated at \$5,000 per hectare or \$11 million for Simons Hill Station and \$12 million for Simons Pass Station – a total of \$23 million. About a third of this cost will be for the pivots themselves, which are imported from the United States. Of the remainder about a quarter is the cost of pipes, which typically will be purchased from an Ashburton supplier. The most significant remaining cost would be for labour for the installation work. This labour is likely to be provided by a combination of those who will live locally and those who will reside elsewhere within the Canterbury and Otago regions and commute daily or weekly, with weekly accommodation required for between 6 to 10 staff in Twizel or Tekapo during the on-farm installation work.
- 4.5 Finally in relation to capital expenditure, a sum of around \$35 million to \$40 million will be required for milking sheds, stock water systems, cow lanes,

⁶ On Simons Pass Station the existing 51 hectares of border dyke irrigation will be replaced with pivots.

- 4.6 housing, initial fertiliser and lime application, weed removal and regrassing, plant and machinery and vehicles.⁷
- 4.7 Like the pipeline construction, this capital expenditure will result in direct and indirect economic impacts in the form of additional jobs, incomes and expenditure for the local Mackenzie Basin economy and the wider Mackenzie District and Waitaki District economies and the Canterbury and Otago regional economies.

Increased Economic Activity from More Intensive Farming

- 4.8 The irrigation of additional areas of land on Simons Hill Station and Simons Pass Station will result in a significant increase in the intensity of land use. At present the farm profit before tax is estimated at around \$0.7 million per annum. This is based on 8,000 hectares of the two farms total area of 12,500 being used for breeding and finishing sheep and beef farming at varying levels of intensity (some of the land is not farmed at all). This is consistent with a farm profit before tax figure of \$87 per hectare taken from the Ministry of Agriculture and Forestry (MAF) 2009 Pastoral Monitoring Report's Otago dry hill sheep and beef model farm budget for 2009/10. This model represents 400 farms in Otago and South Canterbury with a stocking rate averaging 3 stock units per hectare.
- 4.9 With irrigation of 4,800 hectares on the two farms, two future scenarios have been evaluated. Under the first scenario, 6,200 hectares of land will continue as dry land sheep and beef farming but 4,800 hectares of land will be farmed as irrigated intensive beef and sheep finishing. The estimated average profit before tax on this land is \$458 per hectare⁸ raising total farm profit before tax to \$2.7 million per annum. This estimate is conservative in that no increase in profitability has been assumed for the dry land sheep and beef farming as a consequence of extra feed being available.
- 4.10 Under scenario 2, 6,200 hectares of land would again continue as dry land sheep and beef farming but that of the 4,800 hectares of irrigated land 4,000 hectares would be used for dairy farming and the remaining 800 hectares would be used for intensive sheep and beef finishing. Under this scenario

⁷ There is also an estimated additional \$24 million to be spent on Fonterra shares. However initially at least this will not have a direct economic impact within the local area, but to the extent this additional Fonterra capital is used to expand milk processing capacity there will be economic impacts at the wider Canterbury and Otago regional levels. Capital will also be required for the purchase of additional livestock.

⁸ Source: Financial Projections for Simons Hill Station Limited and Simons Pass Station Limited; Ogle Consulting; 2009.

farm profit before tax would increase from \$0.7 million to \$5.2 million per annum. This incorporates an estimated average farm profit before tax for dairy farming of \$1,078 per hectare.⁹

- 4.11 Therefore irrigation is estimated to improve pre-tax farm profitability from \$0.7 million to between \$2.7 million and \$5.2 million per annum.
- 4.12 This analysis is sensitive to assumptions about future product prices and costs but the comparative data are indicative of the potential to substantially increase the productivity of the land with increased irrigation.
- 4.13 The risks inherent in investing debt and equity capital to bring about these productivity improvements will be borne by farm investors and their financiers rather than the community in general and to the extent higher returns are achieved they are not externality benefits. However, there are externality benefits from increased irrigation and more intensive farming of the land from the consequent increased expenditure, employment and incomes for other businesses, households and individuals within the local district.
- 4.14 Total farm working expenses¹⁰ (excluding labour costs) are estimated to increase from \$1.0 million per annum to \$5.5 million under scenario 1 (including irrigated intensive sheep and beef farming) and to \$14.3 million per annum under scenario 2 (including dairy farming and a lesser amount of intensive sheep and beef farming). It is estimated that over 90% of the additional expenditure will be spent within the local Mackenzie and Waitaki Districts.¹¹
- 4.15 Wages to employees (excluding any returns to farm management) is forecast to increase from \$0.1 million per annum to \$0.7 million under scenario 1 and \$2.3 million under scenario 2.
- 4.16 Employment is forecast to increase from 3 full time equivalents (FTEs) to 18 FTEs under scenario 1 and to 60 FTEs under scenario 2. Again no allowance in these estimates is made for increases in management time.

⁹ Source: Financial Projections for Simons Hill Station Limited and Simons Pass Station Limited; Ogle Consulting; 2009.

¹⁰ Farm working expenses other than labour cover animal health, dairy shed expenses, breeding, electricity, feed, fertiliser, lime, cash crop expenses, freight, re-grassing costs, shearing expenses, weed and pest control, fuel, vehicle costs, repairs and maintenance, communication costs (phone and mail), legal and consultancy, water charges (irrigation), rates and insurance.

¹¹ Assumes all farm working expenses other than electricity, communication costs, accountancy and legal and consultancy costs are spent within the two districts. This is conservative in that some accountancy and legal and consultancy expenditure will be with local firms.

4.17 These increases in household income and employment are the direct on-farm economic impacts. In addition to these direct economic impacts there are the indirect (or multiplier) economic impacts. Applying multipliers taken from the Butcher report for the MacKenzie Basin area, direct plus indirect household income is estimated to increase from \$0.1 million to \$1.0 million per annum under scenario 1 and to \$2.8 million per annum under scenario 2. Direct plus indirect employment is estimated to increase from 4 FTE jobs to 29 FTE jobs under scenario 1 and 84 FTEs under scenario 2. For the whole of the Mackenzie and Waitaki Districts we would expect a larger multiplier impact arising from the proposed irrigation of additional areas of land on Simons Hill Station and Simons Pass Station.

Economic Impacts Not Necessarily Economic Efficiency Improvements

4.20 As indicators of levels of economic activity, economic impacts (in terms of expenditure, incomes and employment) are not in themselves measures of improvements in economic welfare or economic wellbeing. However, there are economic welfare enhancing benefits associated with increased levels of economic activity. These relate to one or more of:

- Increased economies of scale. Businesses and public sector agencies are able to provide increased amounts of outputs with lower unit costs, hence increasing profitability or lowering prices;
- Increased competition. Increases in the demand for goods and services allow a greater number of providers of goods and services to enter markets and there are efficiency benefits from increased levels of competition;
- Reduced unemployment and underemployment¹² of resources. To the extent resources (including labour) would be otherwise unemployed or underemployed, increases in economic activity can bring efficiency benefits when there is a reduction in unemployment and underemployment. The extent of such gains is of course a function of the extent of underutilized resources within the local economy at the time and the match of resource requirements of a project and those

¹² Underemployment differs from unemployment in that resources are employed but not at their maximum worth; e.g. in the case of labour, it can be employed at a higher skill and/or productivity level, reflected in higher wage rates.

resources unemployed or underemployed within the local economy;
and

- Increased quality of central government provided services. Sometimes the quality of services provided by central government such as education and health care are a function of population levels and the quality of such services in a community can be increased if increased economic activity maintains or enhances population levels.

4.21 It is reasonable to presume that any increases in local economic activity (i.e. expenditures, incomes and employment) as a consequence of the proposed additional irrigation for Simons Hill Station and Simons Pass Station will give rise to one or more of these four welfare enhancing economic benefits. For example, at the present time there are particular benefits in creating additional employment opportunities, or maintaining existing employment, at the regional and national level. The alternatives of greater unemployment and/or Government subsidisation of employment are much less desirable from the perspective of economic efficiency.

Land Value Effects

4.18 Irrigating additional areas of Simons Hill Station and Simons Pass Station will result in significant increases in the value of the land. This increase in land value will be captured by the developer, and in part at least will be offset by the additional costs of the project. Also the increase in land value is reflective of, and not additional to, the increase in farm profitability already discussed above in my evidence. However it is an alternative measure of the increase in land use efficiency.

Increased Rates Income

4.19 The increase in land value as a consequence of the additional irrigation will provide additional rates income to the Mackenzie District Council. This will benefit the wider Mackenzie District community in that the Council can use the additional rates income to provide increased and/or improved services for the community. Alternatively, or in addition, the Council can reduce the level of rates demanded from other ratepayers.

5. CONCLUSIONS

5.1 Additional irrigation of land on Simons Hill Station and Simons Pass Station will increase the economic wellbeing of the local Mackenzie Basin

community, by increasing the amount of expenditure, incomes and employment within the local economy as a consequence of capital expenditure on the pipeline (\$8-10 million), on farm irrigation works (\$23 million) and farm development (\$35-40 million) resulting in a total capital expenditure of between \$66 million and \$73 million.

5.2 Subsequently as a consequence of the more intensive use of the land with irrigation there will be ongoing increases in expenditure, incomes and employment in the local economy. The additional irrigation is conservatively estimated to result in:

- An increase in farm expenditure of between \$4.5 million and \$13.3 million per annum, with over 90% of this being spent within the Mackenzie and Waitaki Districts;
- An increase in local Mackenzie Basin area incomes of between \$0.9 million and \$2.7 million per annum; and
- An increase in local Mackenzie Basin area employment of between 25 and 80 FTE jobs.

5.3 The increases in expenditure, incomes and employment will be larger from the wider perspectives of the Mackenzie and Waitaki district economies and the Canterbury and Otago regional economies.

5.4 The additional irrigation project is also consistent with an improvement in land use efficiency.

5.5 The Mackenzie Basin area and the Mackenzie District communities will benefit from a broadening of the rating base and from any economies of scale, increased competition, greater resource capacity utilisation, and improvements to central government provided services.

APPENDIX 1***CURRICULUM VITAE OF MICHAEL CAMPBELL COPELAND***

DATE OF BIRTH	3 October 1950
NATIONALITY	New Zealand
EDUCATIONAL	Bachelor of Science (Mathematics) 1971
QUALIFICATIONS	Master of Commerce (Economics) 1972
PRESENT POSITIONS	
(Since 1982)	Economic Consultant, Brown, Copeland & Co Ltd
(Since 2003)	Director, Wellington Rugby Football Union
PREVIOUS EXPERIENCE	
1978-82	NZ Institute of Economic Research Contracts Manager/Senior Economist
1975-78	Confederation of British Industry Industrial Economist
1972-75	NZ Institute of Economic Research Research Economist
1990-94	Member, Commerce Commission
2001-06	West Coast Regional Council Trustee, West Coast Development Trust
2001-08	Lay Member of the High Court under the Commerce Act
GEOGRAPHICAL EXPERIENCE	
	New Zealand
	Australia

Asia (India, Indonesia, Kazakhstan, Malaysia, Nepal, Pakistan, People's Republic of China, Philippines, Tajikistan, Sri Lanka, Uzbekistan)

South Pacific (Cook Islands, Fiji, Tokelau, Tonga, Vanuatu, Western Samoa)

United Kingdom

AREAS OF PRIMARY EXPERTISE

Agriculture and Resource Use Economics (including Resource Management Act)

Commercial Law and Economics (including Commerce Act)

Development Programme Management

Energy Economics

Industry Economics

Transport Economics

SECTORAL COVERAGE

Agriculture	Aluminium	Airports	Aviation
Electricity	Fertiliser	Flood Control	Forestry
Natural Gas	Pharmaceuticals	Public Transport	Rail
Road Transport	Sea Ports	Tourism	Utilities

RESOURCE MANAGEMENT ACT SPECIFIC PROJECTS

- A new supermarket in Dunedin;
- A power station development on the Rangitaiki River;
- Port storage facilities at Westport;
- The proposed Clifford Bay ferry terminal;
- The proposed pipeline and related facilities to utilise water from the Waikato River for metropolitan Auckland;

- A container terminal expansion by the Ports of Auckland;
- The designation of the Transmission Gully motorway route;
- The proposed Variation No. 8 to the Wellington City District Plan covering height and other controls on development of the airspace above the Wellington railway yards;
- A proposed Town Centre Zone within the Kapiti Coast District;
- Wellington City Council's heritage preservation policy;
- Solid Energy's proposed West Coast Coal Terminal at Granity;
- The proposed Waimakariri Employment Park;
- The designation of land for a proposed motorway extension in the Hawke's Bay;
- The Hastings District Council's Ocean Outfall;
- A proposed new shopping and entertainment centre in Upper Hutt;
- New regional correctional facilities in Northland, South Auckland, Waikato and Otago;
- Proposed controls on wake generation by vessels travelling within the waterways of the Marlborough Sounds;
- Southern Capital's proposed new township at Pegasus Bay, north of Christchurch;
- Renewal of water resource consents for the Tongariro Power Development Scheme;
- The imposition of land use restrictions within noise contours surrounding Christchurch International Airport;
- The expansion of the Whangaripo Quarry in Rodney District;
- A proposed five star hotel development for Wanaka;
- Holcim's proposed new cement plant near Weston in the Waitaki District;
- TrustPower's proposed new wind farm at Mahinerangi in Central Otago;

- TrustPower's proposed new Arnold hydroelectric power scheme on the West Coast;
- McCallum Bros and Sea Tow Limited's appeal before the Environment Court regarding extraction of sand from the Mangawhai-Pakiri embayment north of Auckland;
- The development of the Symonds Hill pit at Winstones' Hunua Quarry;
- The rezoning of land for residential development at Peninsula Bay, Wanaka;
- The rezoning of land for more intensive residential development at Peka Peka on the Kapiti Coast;
- A gondola development for the Treble Cone skifield;
- A gondola development for the Snow Farm and Snow Park skiing and snowboarding facilities;
- The extraction of gravel from the bed of the Shotover River;
- The proposed Hilton hotel development on Wellington's Queen's Wharf;
- Land use restrictions in relation to the Runway Extension Protection Areas for Christchurch International Airport;
- A new residential and commercial development by Apple Fields at Belfast on the outskirts of Christchurch;
- A proposed business park development on land at Paraparaumu Airport;
- The proposed redevelopment of Wellington's Overseas Passenger Terminal;
- The proposed Central Plains irrigation scheme in Canterbury;
- The staging of residential and business development at Silverdale North in the Rodney District;
- A Plan Change enabling the relocation of existing development rights for a residential and commercial development on Mount Cardrona Station in the Queenstown Lakes District.