

Before Independent Hearings Commissioners Appointed by Canterbury Regional Council and Selwyn District Council

In the matter of The Resource Management Act 1991

And

In the matter of Applications by **Fulton Hogan Limited** for all resource consents necessary to establish, operate, maintain and close an aggregate quarry (**Roydon Quarry**) between Curraghs, Dawsons, Maddisons and Jones Roads, Templeton

**EVIDENCE OF MICHAEL CAMPBELL COPELAND
ON BEHALF OF FULTON HOGAN LIMITED**

ECONOMICS

DATED: 23 SEPTEMBER 2019

Counsel Acting: David Caldwell
Email: david.caldwell@bridgesidechambers.co.nz
Telephone: 64 21 221 4113
P O Box 3180
Christchurch 8013

Introduction

- 1 My name is Michael Campbell Copeland. I am a consulting economist and 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.
- 2 I have been asked by Fulton Hogan Limited (Fulton Hogan) to provide evidence in respect of its application for resource consents to establish, operate, maintain and close the proposed Roydon Quarry (Proposal).
- 3 My area of expertise is economics and economic effects.

Qualifications and Experience

- 4 I hold a Bachelor of Science degree in mathematics and a Master of Commerce degree in economics. I have over 45 years' experience in the application of economics to various areas of business, including resource management matters. A summary of my curriculum vitae is attached as Annexure 1.
- 5 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. During the period 1990 to 1994, I was also a member of the Commerce Commission and during the period 2002 to 2008 I was a lay member of the High Court under the Commerce Act.
- 6 With respect to the Resource Management Act 1991 (RMA), I have prepared evidence for clients covering a number of projects and policies. A selection of these is listed at the end of my curriculum vitae in Annexure 1. I have prepared evidence in relation to the obtaining of consents for the development of new quarries, or the continued operation of existing quarries, in Northland, Auckland, the Kapiti Coast, Marlborough and Greater Christchurch.
- 7 While this is a Council Hearing, I acknowledge that I have read and am familiar with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014, and agree to comply with it. I confirm that this evidence is within my area of expertise, except where I state that this evidence is given in reliance on another person's evidence. I have considered all material facts that are known to me that might alter or detract from the opinions I express in this evidence.

Scope of Evidence

- 8 In my evidence I will:
 - 8.1 Outline my involvement in the Roydon Quarry Proposal to date;

- 8.2 Describe the key features of the Proposal as they relate to my area of expertise;
- 8.3 Evaluate the economic effects of the Proposal – positive and negative;
- 8.4 Identify and respond to economic issues raised by submissions;
- 8.5 Address any residual economic issues arising from the s42A reports; and
- 8.6 List my conclusions.

My Involvement in the Roydon Quarry Proposal

- 9 In August 2018 I was requested by Fulton Hogan to prepare an assessment of the economic effects of the Proposal. My report (dated 8 November, 2018) covering this assessment of economic effects was attached as Appendix J to the Application Assessment of Environmental Effects Report.
- 10 In August 2019 I attended a workshop with Fulton Hogan staff and consultants to begin preparations for evidence, responding to submissions and attendance at this hearing.
- 11 In preparing my evidence, I have been provided with information about the Proposal by Fulton Hogan staff and its consultants. With respect to aggregate supply and demand forecasts I rely on the analysis and evidence of Mr Mike Chilton. I have already reviewed and referred to earlier work of Mr Richard English for the Christchurch City Council, quarry operators and the Water Rights Trust – principally because I worked with Mr English for some of the relevant hearings and his evidence is consistent with Mr Chilton’s evidence for this hearing.
- 12 I have also reviewed material from the Canterbury Regional Council and Selwyn District Council s42a reports.

The Essential Features of the Proposal in respect of Economic Effects

- 13 The proposed quarry is located within the Selwyn District, approximately 700 metres to the west of the township of Templeton, and adjacent to State Highway 1 and the Main South Line. It will produce a range of high-quality aggregates for use in roading, other infrastructure, drainage, and other building materials. Fulton Hogan estimates that around 30 million tonnes) of aggregate is available to be produced from the quarry, with production averaging around 425,000-575,000 tonnes per annum over an estimated 40 plus year life for the quarry. Annual production is likely to vary from

year to year in line with fluctuations in aggregate demand but is anticipated to generally increase over time.¹

- 14 Within Greater Christchurch (i.e. Christchurch City, Selwyn and Waimakariri Districts) Fulton Hogan currently operates three fixed aggregate and processing quarries – its Miners Road quarry at Yaldhurst, its Pound Road quarry at Islington and its McLeans Island quarry. Fulton Hogan supplements these sites with aggregate raw material from smaller extraction-only sites such as its Roberts Road Quarry at Islington. While Pound Road still operates as a processing site, the site is now nearly exhausted of extractable aggregate resource. The proposed Roydon Quarry will provide a source of supply of aggregate and a processing and storage base for Fulton Hogan to continue meeting demand, primarily from customers in the south-west of Christchurch City and in the Selwyn District.
- 15 The site of the proposed new quarry by road is approximately 8 kilometres to Rolleston, 11 kilometres to the airport, 7 kilometres to Hornby, 12 kilometres to Lincoln, 22 kilometres to Christchurch South (Woolston), 23 kilometres to Christchurch North (Belfast) and 19 kilometres to Christchurch Central (Cathedral Square).² These areas are expected to be among the major points of demand over the next 20 years.

ASSESSMENT OF ECONOMIC EFFECTS

Economics and the RMA

- 16 In Appendix J to the Application I addressed this topic at paragraphs 7 to 19. I set out the main points below:
- 16.1 Economic assessments are relevant under the Resource Management Act 1991 (RMA), particularly sections 5(2) and 7(b).
- 16.2 An essential first step in carrying out an evaluation of the positive and negative economic effects of a development proposal is to define the appropriate viewpoint to be adopted. In my opinion, a Greater Christchurch viewpoint is appropriate, with the main focus being on the Selwyn District and Christchurch City.
- 16.3 The main focus of my evidence is on wider economic effects on people and communities, rather than Fulton Hogan.
- 16.4 I consider it is generally better to not attempt to estimate monetary values for intangible effects (e.g. effects on air quality and noise effects), and rather

¹ These annual volumes are lower than those in my technical report because Fulton Hogan has revised them downwards in the light of additional analysis it has undertaken of forecast demand, the mix of products to be sourced from its quarries and the Roydon Quarry resource.

² Source: Fulton Hogan.

to leave them to be assessed by appropriately qualified experts. This also avoids the danger of ‘double-counting’ – i.e. including them within a quantified measure of economic wellbeing or efficiency and treating them as a separate consideration in the overall judgement under section 5.

16.5 In this case I do not consider it makes a material difference whether intangible effects are monetised or not.

The future demand for, and supply of, aggregate in Greater Christchurch

17 In Appendix J to the Application I addressed this topic at paragraphs 20 to 25. That section of my technical report relied on forecasts used by Mr Richard English in 2015 and 2016.³

18 Since the preparation of my earlier report, Mr Mike Chilton has prepared evidence and provided updated forecasts. Mr Chilton has assumed slower growth in aggregate demand than Mr English and has taken into account sources of aggregate supply that have been consented since Mr English’s evidence. Despite the more conservative growth in aggregate demand adopted by Mr Chilton in his evidence, the conclusions of Mr English and Mr Chilton’s evidence are comparable. Both experts agree new sources of aggregate supply will be required within the next 20 to 25 years.

19 I would point out that if the development of new quarries is postponed until existing quarries are exhausted there is likely to be reduced competition within the greater Christchurch aggregate markets. Reductions in competition will result in less competitive pricing and/or service levels. It is impractical to assume Fulton Hogan and/or other participants in the market will not seek an alternative source of supply if consents are not granted for the proposed Roydon Quarry, until all other supplies of aggregate have been utilized. Fulton Hogan and other participants in the aggregates market specialise in specific segments of the market and will wish to maintain existing vertical relationships with other parts of the construction industry – e.g. concrete manufacturing and road construction and maintenance. Also a “just in time” approach to consenting new quarries would lead to considerably greater transport costs as the location of quarries would be sub-optimal from a transport cost perspective. For example, Fulton Hogan’s current Pound Road customer base would need to be served from more distant existing quarries than the proposed new Roydon Quarry.

³ See Statement of Evidence of Mr Richard Spencer English on behalf of Christchurch City Council, 16 October 2015 before the Christchurch Replacement District Plan Independent Hearings Panel; Rural (Part) Proposal (Stage 2). Mr English also used this same analysis in his evidence on behalf the Water Rights Trust and dated 2 June 2016 before the Canterbury Regional Council Hearing Panel in opposition to the Canterbury Aggregate Producers Group application for land use consents to excavate below the highest recorded groundwater level at ten quarries located at McLeans Island, Miners Road and Selwyn Road.

20 Finally, establishing new quarries takes several years to arrange for land to be purchased and for consents to be sought and granted. Mr Stewart discussed how looking for the proposed Roydon Quarry commenced in 2012. If consented, the planning and development process for this proposal will have taken around 8 to 10 years.

The economic importance of low-cost aggregate supplies

21 In Appendix J to the Application I addressed this topic at paragraphs 26 to 31. I set out the main points from that discussion below.

21.1 Because of the significance of aggregate in housing, commercial and industrial buildings and community infrastructure (especially roading), enabling the provision of low-cost aggregate is important to the economic well-being of both people and communities, as well as the efficient use and development of resources.⁴

21.2 In a competitive market, increases in the costs of quarrying, producing and transporting aggregate will result in increased prices for aggregate used for the construction and maintenance of infrastructure and other building works. Higher prices for inputs reduce the overall competitiveness of a local economy reducing employment, incomes and economic growth.

21.3 Fulton Hogan's proposed new Roydon Quarry will delay the need to source aggregate from quarries located further away from points of aggregate demand and therefore prolong the situation of a relatively cheaper resource.

21.4 As Christchurch City moves into the post-earthquake "regeneration" phase, the ongoing growth needs of the City become increasingly important. As explained in my technical report and in the evidence of Mr Chilton, the business as usual (BAU) demand for aggregate is expected to increase in line with future population growth. This requires additional sources of aggregate supply to be developed, quite independently from the increased requirements as a result of the earthquakes.

21.5 Cost competitive aggregate supply is also relevant to the issue of affordable housing, since it impacts on subdivision development and home building costs.

⁴ Source: Aggregate and Quarrying Association of New Zealand Incorporated.

The economic benefits of maintaining Greater Christchurch's aggregate supply cost advantage

22 In Appendix J to the Application I addressed this topic at paragraphs 32 to 35. I set out below the main points from that discussion below.

22.1 Aggregate is a low value, high volume product and its delivered cost is particularly sensitive to transport costs.

22.2 Greater Christchurch is effectively self-sufficient in aggregates as there is no need to import aggregates into the area. This self-sufficiency is of significant economic advantage to Greater Christchurch, because the cost of transporting aggregates is such a significant proportion of their delivered cost.

The economic benefits of the new Roydon Quarry

23 In Appendix J to the Application I addressed this topic at paragraphs 36 to 45. I set out below the main points from that discussion below:

23.1 Reduced Aggregate Transport Costs. If consents are not granted for the Proposal, Fulton Hogan has indicated that alternative sources of supply will be more distant from major points of demand.⁵ There would be additional aggregate transport costs and potentially additional handling costs, if unprocessed aggregate had to be transported to existing processing sites.

23.2 In addition to lower cartage costs for aggregate, there are also three important external effects (or "externalities") associated with road transport, and which need to be taken into account:

(a) Environmental benefits associated with reduced road transport;

(b) Reduced road accident costs; and

(c) Reduced congestion effects of road transport for other road users.

23.3 Other Economic Efficiency Benefits of the Roydon Quarry Site. There are comparative efficiency benefits in developing the site, producing aggregate from it and the site's rehabilitation. I have listed some of these factors in my technical report at paragraph 39.

23.4 While these other economic efficiency benefits accrue in the first instance to Fulton Hogan, they also benefit the Greater Christchurch community,

⁵ See section 2.2 of the AEE.

especially those within the Selwyn District and Christchurch City, as explained below.

23.5 Reduced Aggregate Prices.⁶ Savings in the costs of producing and transporting aggregate (as described above) imply increases in resource use efficiency. However, in terms of “community economic wellbeing” positive impacts will occur only if these cost savings are translated into price reductions for customers – or at least aggregate prices are maintained at existing levels for longer. If the proposed resource consents are not granted, it is likely:

- (a) Fulton Hogan will be faced with higher aggregate supply costs as a consequence of needing to source aggregate from an alternative location further from the points of demand and/or the need to double handle aggregate raw material. Initially, Fulton Hogan may need to accept a reduction in the margin achieved from the sale of aggregate. The market price for aggregate supplied to points of demand in Greater Christchurch may still be largely driven by the existing supply points and there would be limited scope for the delivered price of aggregate to immediately increase significantly;
- (b) With time I would expect the market to adjust to a new supply regime that includes some aggregate⁷needing to be sourced from further afield. Consequently, prices will trend upwards. The rate of increase would be largely determined by the pricing behaviour of the quarries closest to the market demand points. Increased costs for aggregate supply would be reflected in the market prices for aggregate because even though some competitors would not face increased costs, with a tight supply situation generally, the aggregate would be “priced to market”. In other words, prices from all sources tend towards the highest cost source of supply that is required to meet demand; and
- (c) Because it is able to supply lower cost aggregate than alternative, more distant sources of supply, the Proposal will help delay the time when higher cost sources of aggregate must be utilised and therefore help to delay increases in the delivered price of aggregate; and
- (d) Higher prices for aggregate raise the costs for infrastructure projects and other building construction and maintenance. Also, to the extent

⁶ Or restraint on future price increases.

⁷ Either finished aggregate products or aggregate raw material trucked to Fulton Hogan’s other existing quarries for processing.

that central and local government budgets for the provision and operation of infrastructure are fixed, higher costs imply delays in the provision of improved infrastructure services, impacting on community economic and social wellbeing.

23.6 Retained Employment, Incomes and Expenditure. The Proposal is expected to retain 5 to 6 full time equivalent (FTE) jobs, with annual wages and salaries of around \$0.25 million to \$0.35 million per annum.⁸Expenditure with local businesses is expected to average \$9.5 million per annum.⁹Without the Proposal it is likely similar jobs, income and expenditure will be created at an alternative site or sites but the jobs and incomes will possibly not be within this particular part of the Selwyn District.

Potential economic costs of the proposed Roydon Quarry

24 In Appendix J to the Application I addressed this topic at paragraphs 46 to 49. I set out the main points from that discussion below.

24.1 Alternative Land Uses. The current uses of the site are for pastoral farming, with 4 existing dwellings and pasture, shelterbelts and farming infrastructure on the remainder of the block. The proposed development of the quarry will involve only limited parts of the site being required for quarrying activities at any one time and the land being rehabilitated progressively. However, the temporary loss of land for alternative uses is not an external cost of the Proposal. Fulton Hogan, in purchasing the land, has paid a price reflective of future net returns from alternative uses for the land. Such costs are not costs to be borne by the wider community. Also, because Fulton Hogan paid the market price for the land, the quarrying of the land and its subsequent rehabilitation is the best use of the site in economic terms, as judged by the market.

24.2 Public Infrastructure Costs. Externality costs can arise when utilities provided by central or local government (e.g. roads, water supply, storm water and flood control systems and wastewater disposal) are not appropriately priced. In the case of the Proposal no such externality costs will arise. The Quarry will be completely self-sufficient with respect to water supply and wastewater disposal. In addition to road user charges, and roading costs payable as part of the annual rates, Fulton Hogan will meet the costs of the proposed relocation and modification of the Jones

⁸ These numbers are lower than in my technical report because they cover only FTE positions required day to day to run the quarry and sales from it. In addition there will be other labour inputs to cover environmental management, safety and laboratory testing and various overhead components including quarry management, accounting and sales.

⁹ Source: Fulton Hogan.

Road/Dawson's Road intersection to ensure adequate capacity in the local network and to improve road safety.

- 24.3 Local Road Congestion Costs. An analysis of the traffic effects of the Proposal has concluded that the proposed access and egress arrangements will accommodate the volumes of vehicles envisaged and that the traffic generated will be safely and efficiently accommodated within the adjacent road network.¹⁰

Submitter Issues Regarding Economic Effects

- 25 I have read a number of the submissions where there is reference to economic effects of the Proposal. I set out below my responses to the topics raised in those submissions where they are related to economic effects.

Submissions supporting the Proposal

- 26 A number of submissions have been made in support of the Proposal. The reasons given in support include the following economic effects:
- 26.1 The Proposal will enable continued supply of high-quality aggregates essential to meet future regional growth predictions (e.g. in Lyttelton Port Company submission);
- 26.2 The Proposal will be a direct replacement for the Pound Road quarry and secure an ongoing, economic supply of aggregates (e.g. in Allied Concrete submission);
- 26.3 The Proposal will provide direct and indirect employment benefits (e.g. in AQA submission);
- 26.4 The Proposal will reduce transport costs, road transport externalities and the carbon footprint associated with transporting aggregate and it will be located to minimise transport costs (e.g. in AQA and Civil Contractors NZ submissions);
- 26.5 Infrastructure in and around Christchurch needs aggregate for ongoing maintenance and upgrading (e.g. in AQA submission);
- 26.6 Sustainable and affordable supply of aggregates is essential for social, economic and cultural wellbeing (e.g. in Civil Contractors NZ submission);
- 26.7 There is a need for multiple suppliers of aggregate to ensure competitive pricing (e.g. in Civil Contractors NZ submission); and

¹⁰ See the evidence of Mr Andrew Metherell.

- 26.8 Christchurch will face aggregate shortfalls from local sources in the medium-term future (e.g. in Civil Contractors NZ submission).
- 27 I agree with the submitters that the above positive economic effects will arise if consents are granted to the Proposal.

Submissions opposing the Proposal

- 28 Submissions opposing the Proposal include several economic arguments, which I paraphrase below (in italics) together with my opinion on these arguments:
- 28.1 *The forecasts for future aggregate supply and demand are dated and need to be revised. (e.g. in the submissions of Alex and Nigel McGrath, J & A Cunningham, M Flanagan L Greenfield and C Greenfield).*
- Mr Chilton has been engaged to update the forecasts I used in my technical report. I have provided my evidence in light of Mr Chilton's forecasts.
- 28.2 *Further consideration of the economic assessment is required because the justification for the quarry in this location is not robust (e.g. in the Templeton Residents' Association submission).*
- 28.3 A quarry in this location has community wide economic benefits from lower cost aggregate supply and therefore more affordable infrastructure and building construction and maintenance. Potential adverse effects of the proposed quarry need to be assessed in light of these benefits. These other effects and the extent to which they can be managed are assessed in the evidence of other experts.
- 28.4 *The quarry will lead to the loss of productive farm-land (e.g. in Mrs Curragh's submission).*
- 28.5 Only a small proportion of the site will be removed from agricultural activities at any one time and after quarrying the site will be progressively rehabilitated at a minimum to its existing use. Fulton Hogan has estimated that around 125 hectares (75%) of the site will continue to be able to be leased for farming activities. As such, most of the land can continue to deliver economic benefit in much the same way as it always has, with the additional benefit of a second productive use upon the same land.
- 28.6 *The Proposal will not lead to economic benefits for the local Templeton community, few if any of the employees at the site will reside in Templeton and what sorts of firms will benefit from the retained \$9.5 million per annum local expenditure? (e.g. in the submissions of K Keelan, J & A Cunningham and C Greenfield.)*

It is correct that the economic benefits will be more widespread than just the local Templeton community and the employees at the site will not necessarily reside in Templeton. However, the broader Selwyn District and Greater Christchurch communities will receive the identified economic benefits. This can be contrasted with other capital projects such as state highways largely benefitting through traffic, and power stations supplying electricity for customers connected to the national grid, where economic benefits are more widespread.

Fulton Hogan has indicated that the new quarry will make purchases from local machinery and equipment providers for fixed plant and on-site machinery, electrical and mechanical contractors for maintenance of site equipment and machinery, and fuel providers.

28.7 *It is the transport costs that double every 30 kilometres, not the delivered cost of the aggregate. Therefore additional distance to cart aggregate has only a small impact on the delivered cost of aggregate (e.g. in the submission of J & A Cunningham).*

This argument is incorrect. For the first 30 kilometres of distance from the quarry the delivered cost of aggregate approximately doubles compared to its at-quarry price. Therefore, in this case transport costs are 50% of the delivered cost of aggregate. After 30 kilometres additional transport costs are still significant but the increase in the delivered cost is not as great. Also, for higher value aggregates, transport costs are a less significant component of the delivered cost.

28.8 *There is a need to simplify the analysis about additional transport costs if alternative sources of aggregate supply are more distant from points of demand, and this analysis needs to be more specific to Fulton Hogan's proposed new Roydon Quarry (e.g. in the submission of L. Greenfield).*

Additional transport costs for aggregate if it is sourced say an additional 15 km from points of demand are around \$5 per tonne.¹¹ The proposed new Roydon Quarry's reserves are estimated to be around 30 million tonnes, to be extracted at an average rate of around 425,000-575,000 tonnes per annum – i.e. for this aggregate the additional transport costs would be \$150 million or \$2.1 million to \$2.9 million per annum.

Other aggregate may also increase in price as it is likely it is “priced to market”, increasing the prices for aggregate consumers but lifting the

¹¹ Based on data taken from Mr Richard English's evidence (see footnote 3)

margins for other aggregate suppliers (see earlier in my evidence at paragraph 23.5).

28.9 *Potential negative impact on property values (e.g. in the submissions of the Samadhi Buddhist Trust of NZ, A & M McKay and K Keelan).*

Property value effects are a reflection of, not in addition to, intangible effects.¹² Those effects have been assessed by other Fulton Hogan witnesses.

Economic Issues arising from the s42a Reports

29 I have read the “Positive Effects” sections of the Canterbury Regional Council s42A report (paragraphs 363-364) and the Selwyn District Council s42A report (paragraphs 131-133). The Canterbury Regional Council agrees with a number of positive effects identified by the applicant, including:

“Many aggregate quarries in the hinterland of Christchurch City are nearing exhaustion. Providing a supply of aggregate close to the areas of greatest demand reduces economic, environmental, and social costs that would be increased should new quarries have to be established at greater distances.”

And

“Overall the applicant considers the proposal promotes community economic wellbeing and efficient use and development of resources.”

30 I consider the Canterbury Regional Council s42A Report’s findings with respect to the positive effects of the Proposal are consistent with my technical report and my evidence.

31 The Selwyn District Council commissioned Mr Rodney Yeoman to peer review my technical report covering an assessment of the economic effects of the Proposal.¹³ At paragraph 132 the Selwyn District Council’s s42A Report states:

“Overall the Market Economics assessment concludes that while they do not agree with some of the applicant’s methodology, the matters on which there is disagreement do not affect the overall findings. Mr Yeoman concludes overall that the net position from an economic perspective is likely to be positive.”

32 I agree with the Selwyn District Council 42A Report’s conclusion that the Proposal will contribute positive economic benefits to Greater Christchurch and the Selwyn

¹² See paragraphs 249-256 of the Environment Court Decision in *Foot v Wellington City Council* ENE Wellington W73/98, 2 September 1998 which dealt with the impact of height restrictions on properties in Oriental Parade, Wellington. See also paragraph 370 of the Canterbury Regional Council s42A report.

¹³ Mr Yeoman’s peer review is Appendix 2 to the Selwyn District Council s42A report.

District. For completeness I include in **Annexure 2** to my evidence comments on the areas of disagreement between Mr Yeoman and myself.

Conclusions

- 33 Community economic wellbeing and the efficient use and development of resources are relevant concepts under the RMA.
- 34 Aggregate is an important component in the construction and maintenance of housing, commercial and industrial buildings and community infrastructure. Local authorities and central government are significant users of aggregate.
- 35 Aggregate is a low value, high volume product and its delivered cost is particularly sensitive to its transport costs. Greater Christchurch is effectively self-sufficient in aggregates as there is no need to import aggregates into the area. This self-sufficiency is of significant economic advantage to Greater Christchurch, because the cost of transporting aggregates is such a significant proportion of their delivered cost.
- 36 Greater Christchurch is forecast to require new sources of aggregate supply within the next 25 years.
- 37 Compared to the other alternative sources of supply considered by Fulton Hogan, the proposed new Roydon Quarry will give rise to the following economic benefits:
- 37.1 Lower aggregate transport costs;
 - 37.2 Lower aggregate production costs;
 - 37.3 Lower aggregate supply prices; and
 - 37.4 Retention of employment and incomes in the local economy.
- 38 The Proposal will not result in economic externality costs in relation to loss of agricultural land and public sector infrastructure costs.
- 39 The new quarry is consistent with community economic wellbeing and the efficient use and development of resources. The Proposal provides a new aggregate source to retain competition in the market for the supply of aggregate to Christchurch City and the Selwyn District customers. Without the Proposal, this is also likely to occur since new sources of supply will be sought before existing quarries are closed. However other new sources of supply will be more expensive if they are more remote from the areas of greatest demand.

Dated 23 September 2019

Michael Copeland
Director – Brown, Copeland & Company Ltd

Annexure 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 2017) Trustee, Trade Aid, Kapiti

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
2002-08	Lay Member of the High Court under the Commerce Act 1986
2003-11	Director, Wellington Rugby Union
2010-13	Director, Southern Pastures
2010-17	Director, Healthcare New Zealand Holdings Limited

GEOGRAPHICAL EXPERIENCE

- New Zealand
- Australia
- Asia (Cambodia, India, Indonesia, Kazakhstan, Malaysia, Nepal, Pakistan, People's Republic of China, Philippines, Tajikistan, Sri Lanka, Uzbekistan, Viet Nam)
- South Pacific (Cook Islands, Fiji, Kiribati, Tokelau, Tonga, Tuvalu, 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

RESOURCE MANAGEMENT ACT SPECIFIC PROJECTS

- 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 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;
- Proposed expansion of Paraparaumu town centre within the Kapiti Coast District;
- Wellington City Council's heritage preservation policy;
- Solid Energy's proposed West Coast Coal Terminal at Granity;
- Solid Energy's Mt William North coal mine at Stockton in the Buller District;
- 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 – two consent renewal applications;
- A proposed new shopping and entertainment centre in Upper Hutt;
- Rezoning of land in Upper Hutt from Business Industrial to Residential;
- 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;
- The expansion of marina facilities within 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;
- Economic analysis inputs to a Section 32 report for the Waitaki Water Allocation Board;
- The imposition of land use restrictions within noise contours surrounding Christchurch International Airport;
- The expansion of the Whangaripo Quarry in Rodney District;
- The economic significance of Winstone's proposed quarry at Wainui, in the north of Auckland City;
- 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 PekaPeka 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;
- The redevelopment of the Johnsonville Shopping Centre;
- 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;
- A new Pak'n Save supermarket at Rangiora;
- New supermarkets at Kaiapoi, Whitby, Silverstream and Havelock North;
- The extension of the TeRereHau wind farm in the Tararua District;
- MainPower's proposed new wind farm at Mount Cass;
- Fonterra's proposed new milk processing plant at Darfield and its subsequent expansion;
- Fonterra Pahiatua milk powder plant expansion;
- Fonterra's Studholme milk processing plant expansion;
- Renewal of resource consents at Fonterra's Edgecumbe, Edendale, Te Rapa and Te Awamutu milk processing plants;
- Fonterra's proposed new coal mine in the Waikato District;
- Assessment of the economic significance of ANZCO's Canterbury operations to the Canterbury regional economy;
- Resource consent extensions for Oceana Gold (New Zealand) Limited's gold mining operations at Macraes Flat in north-east Otago, the Globe Mine at Reefton and a proposed underground gold mine at Blackwater on the West Coast;
- Designation of land for NZTA's Waterview motorway project in Auckland;
- Designation of land and resource consents for NZTA's Transmission Gully motorway project in Wellington;
- Designation of land and resource consents for NZTA's MacKays to PekaPeka Expressway;
- Designation of land and resource consents for NZTA's PekaPeka to Otaki Expressway;
- Resource consents for NZTA's Basin Reserve Bridge Project;
- Resource consents for NZTA's Puhoi to Warkworth motorway extension;
- Assessment of the economic effects of a Queenstown Airport Corporation's proposed Notice of Requirement for the designation of additional land for aerodrome purposes;
- Assessment of the retail effects of proposed Plan Change 19 to the Queenstown Lakes District's District Plan;
- Assessment of the regional and national economic significance of Lyttelton Port;
- The economic benefits of utilising a Recovery Plan under the Canterbury Earthquake Recovery Act for the rehabilitation and enhancement of facilities at Lyttelton Port;
- The economic effects of the Lyttelton Port Company's Capital Dredging Project;
- Meridian's proposed new Mokihinui hydro scheme;
- Assessment of the economic effects of alternative wreck recovery options for the MV Rena and preparation of evidence for Environment Court hearing;

- Assessment of the economic benefits and costs of Transpower's corridor management approach to giving effect to the National Policy Statement on Electricity Transmission in District and City Plans;
- Assessment of economic effects of a proposed extension to Arrowtown's urban boundary;
- Assessment of the economic benefits of overhead deployment of ultrafast broadband infrastructure;
- Assessment of the economic benefits of the proposed Ruataniwha Water Storage Scheme;
- Preparation of evidence for Transpower in relation to the proposed Ruakura development on the outskirts of Hamilton City;
- Preparation of two reports reviewing the economic benefits of the Hobbiton movie set at Matamata;
- Assessment of the economic benefits of renewal of a water discharge consent for Silver Fern Farm's Belfast meat processing plant;
- Assessment of the economic effects of renewal of consents for the Alliance Group's Lorneville meat processing plant;
- Preparation of evidence for Winstone Aggregates in relation to the proposed extension of the Otaki quarry;
- An assessment of the economic benefits of NZTA's Waitarere Beach Road Curves Project, north of Levin;
- An assessment of the economic effects of enabling deeper quarrying in the Greater Christchurch sub-region;
- Preparation of evidence for Transpower in relation to the Proposed Auckland Unitary Plan;
- Preparation of evidence for Transpower, Ngāi Tahu Property Limited, the Lyttelton Port Company, Canterbury International Airport Limited, Tailorspace Limited, Church Property Trustees, the Roman Catholic Bishop of the Diocese of Christchurch, Pacific Park Limited, Fulton Hogan and the Christchurch Aggregates Producers Group in relation to the Proposed Christchurch Replacement District Plan;
- Preparation of evidence for Darby Planning LP, Soho Ski Area Limited, Treble Cone Investments, Lake Hayes Ltd, Lake Hayes Cellar Ltd and Mount Christina Limited in relation to economic issues concerning the Rural and Rural Recreation and Rural Lifestyle Chapters of the Proposed Queenstown Lakes District Plan;
- Preparation of evidence for Coastlands Shoppingtown Limited in relation to the proposed Kapiti Coast District Plan;
- Preparation of evidence for Tinline Properties Limited in relation to a proposed plan change to enable the establishment of an out of centre supermarket;
- The assessment of the economic effects of a proposed Plan Change for safeguarding the future efficient operations of the Rangiora Airfield;
- The assessment of the economic effects of proposed changes to Queenstown Lakes District Plan covering the Jack's Point resort area;
- The assessment of the economic benefits of the development of a marquee golf course in Christchurch;
- Economic assessment of Waitemata Harbour Crossing Project alternatives.
- Assessment of economic effects of proposed State Highway 3 Mount Messenger upgrade project.
- Assessment of economic effects of the proposed options for disposal of overburden from GBC Winstone's Otaika Quarry in Northland.
- Assessment of economic effects of Stevenson's proposed Te Kuha coal mine near Westport.
- Assessment of the economic effects of Road Metals proposed extension of its Yaldhurst Quarry in Christchurch.

- Assessment of the economic effects of Simcox's Barracks Road quarry in Marlborough.

ANNEXURE 2:

RESPONSES TO SELWYN DISTRICT COUNCIL - ROYDON QUARRY – S42 REVIEW (ECONOMICS); RODNEY YEOMAN, MARKET ECONOMICS; 28 JUNE, 2019¹⁴

Non-economic Effects

1. At page 2, second paragraph (and elsewhere in his report) Mr Yeoman is critical of my distinction between economic and non-economic effects, with Mr Yeoman apparently considering that all effects of the project can be assessed within an economic framework and states that my report ignores non-economic effects. Whilst my report and evidence do not include assessment of what I consider to be non-economic effects – e.g. noise, dust, groundwater and visual effects – it is not my contention that these effects should be ignored but that they are more appropriately assessed by Commissioners on the basis of the technical reports and evidence of other appropriately qualified experts.
2. In my opinion, I do not consider economists are equipped to assess both economic and non-economic effects within an economic framework.
3. Given that Commissioners will in any event consider the evidence of both economists and other experts, I do not consider this difference in approach by Mr Yeoman and myself to be material.

Greater Christchurch Aggregate Market Assessment

4. Whilst I accept that Mr English's 2015 aggregate demand and supply forecasts I used in my report are now somewhat dated, they were used by him again in 2016 when he opposed Fulton Hogan and other aggregate producers seeking consents for deeper excavation of existing quarries.¹⁵ Therefore I consider them to be a useful independent source of information.
5. In any event, Mr Chilton has prepared evidence updating these forecasts and he also identifies the need for new sources of aggregate supply over the next 25 years.

Auckland Aggregate Prices

6. At page 4, paragraph 4 Mr Yeoman questions whether Christchurch has a comparative aggregate cost advantage over Auckland. I am informed¹⁶ that:
 - a. Auckland City's average at quarry prices are higher than for the Canterbury region, reflecting higher production costs, which include the cost of explosives in Auckland;

¹⁴ Attachment 2 of Selwyn District Council s42A report.

¹⁵ See footnote 3 of my evidence.

¹⁶ Pers. comm. Mr Mike Chilton.

- b. Auckland's quarries are concentrated in the south of the region some considerable distance from the centre of Auckland -e.g. Brookby 38 kilometres, Drury 40 kilometres and Hunua 40 kilometres. This compares with Christchurch quarries being located closer to the centre of the city – e.g. McLeans Island 16 kilometres, Templeton 20 kilometres and Yaldhurst 18 kilometres;¹⁷
 - c. Quality issues with north Auckland quarries making their products unsuitable for certain uses necessitating long journeys to serve customers north of the harbour bridge – e.g. the aggregate used for the Puhoi to Warkworth motorway extension project has been trucked from the south, necessitating 80 kilometre plus journeys; and
 - d. Greater congestion in Auckland adding to trucking costs.
7. Therefore, I would expect Christchurch to have a comparative aggregate cost of supply advantage over Auckland.

Higher Infrastructure Costs and the Provision of Infrastructure

- 8. At page 4, paragraph 5 Mr. Yeoman questions my assertion that higher aggregate costs may delay the provision of new or upgraded public infrastructure.
- 9. The point I was making is that central and local government budgets are not “bottomless pits”. The provision of new or upgraded facilities such as roads, utilities, libraries, stadiums, etc will be delayed if costs are increased and higher prices cannot be charged to cover their increased costs.

Transport Cost Savings

- 10. At page 5, paragraph 3, Mr. Yeoman says that because of other alternative sources of aggregate supply in close proximity, most of the transport cost savings will only occur in the long term (after 2035).I disagree because this is not a realistic view of a competitive market.
- 11. Consents for the Roydon Quarry are being sought by Fulton Hogan because of reducing supply from its Pound Road Quarry. Without consents being granted, Fulton Hogan will need to find equivalent supply capacity from more distant sources of supply immediately. It will not wait until capacity at other competing quarries is exhausted. Therefore, the transport cost savings materialise once the Roydon Quarry commences operating – i.e. in the short, medium and long term and not only in the long term as claimed by Mr. Yeoman.

¹⁷ Distances by road, www.googlemaps.nz

Reduced Aggregate Prices

12. At page 6, paragraph 4 Mr. Yeoman states that the reduced aggregate price benefits will be minimal in the coming two decades. I disagree with this. Without the Roydon Quarry being developed, Fulton Hogan will have higher aggregate supply costs due to increased transport costs and/or the need to double handle aggregate raw material. As I explain at paragraphs 42 to 44 of my report (and at paragraph 23.5 in my evidence), increased costs of supply for a major participant in the market would result in higher aggregate prices across the board as aggregate is “priced to market” – i.e. competitors’ prices will also move up towards the highest cost source of supply that is required to meet demand. This is similar to the pricing behaviour in other markets – e.g. the wholesale electricity market.
13. These price effects I would expect to occur in the short, medium and long term. I disagree with Mr. Yeoman that this is just a long term (in 30 years or more) effect.

Alternative Land Use Cost

14. At page 7, paragraphs 3 and 4 Mr. Yeoman concludes that the cost from lost farming on the site will be minimal. I concur with this conclusion, even though Mr. Yeoman does not accept my argument that any such cost is not an externality cost. I consider that in purchasing the site Fulton Hogan has paid a sum to the previous owner who gains an amount equal to at least the capitalised sum of net annual returns from alternative use of the site and therefore from a community perspective there is no net economic cost.

Selwyn District Benefits and Costs

15. At pages 9 to 11, Mr. Yeoman sets out the costs and benefits of the proposed Roydon Quarry from the perspective of the Selwyn District only. He concludes that for the District community the benefits outweigh the costs. Whilst I agree that the economic benefits outweigh the economic costs, my assessments of individual benefit and cost components differ from those of Mr Yeoman - in particular, with respect to:
 - a. Aggregate transport cost savings and transport externality cost savings – the Roydon Quarry will supply points of demand within the Selwyn District. Therefore, I consider there will be transport cost savings and transport externality cost savings for the Selwyn District, as well as for other parts of Greater Christchurch.
 - b. Fulton Hogan operating efficiencies – I consider the choice by Fulton Hogan of the Roydon Quarry site reflects the operational efficiencies it sees as compared to an alternative new site(s). More details on such operating efficiencies are contained in the evidence of Mr Craig Stewart. Also, some of the efficiency gains will be passed on in lower prices for aggregate from

the quarry for Selwyn District consumers, including the Selwyn District Council itself.¹⁸.

- c. Reduced aggregate prices – I consider that the Roydon Quarry will result in lower aggregate prices in the short, medium and long term as covered in paragraphs 12 and 13 of this annexure.

16. Therefore, I consider Mr. Yeoman has understated the significance of the key economic benefits of the Roydon Quarry for the Selwyn District (and other parts of Greater Christchurch).

¹⁸ Mr Yeoman (page 9) also states that much of the value of the efficiency gains will flow outside the District because Fulton Hogan's owners largely live outside the District. In fact one of the company's founding directors lives in the Selwyn District and the other lives within Greater Christchurch.