Attachment 6

Economic Benefits

Relevant to Fast-track Referral Application Form Section 2.6

WHITEROCK QUARRY AND MANAGED FILL - ASSESSMENT OF ECONOMIC BENEFITS

Mike Copeland

Brown Copeland & Co Ltd

Revision 0

23 May, 2025

INTRODUCTION

Background

1. My understanding of the proposal is:

    a. Whiterock Lime Ltd (WLL) is proposing to construct and operate a Class 3 Managed Fill at the Whiterock Lime Quarry, located at 150, 154 and 174 Quarry Road, Loburn. The site is located approximately 23.5 km from the centre of Rangiora and 50 km to the centre of Christchurch.

    b. Resource consents are sought from Environment Canterbury and the Waimakariri District Council for the establishment and operation of the proposed landfill to enable the site to receive inert and sorted construction and demolition waste and specific inert wastes including contaminated soil material. WLL is now seeking resource consent approvals alternatively though the Fast-track Approvals Act 2024 (FTAA).

    c. The site has operated as a lime quarry since the 1950's. The existing quarry pit on the site is proposed to be utilised for the managed fill.

    d. WLL will also continue the existing limestone processing activities from the overburden quarrying and limestone extraction that will occur to shape the landfill floor and sides within 150 Quarry Road and part of 174 Quarry Road.

    e. The managed fill activity is proposed to commence at the site upon completion of constructing the first stage of the managed fill. If approvals were granted by November 2025, construction would be expected to commence in January 2025 and be completed six months later – i.e. by mid 2026. The managed fill is anticipated to operate for a period of approximately 20 years depending on disposal demand and availability of landfill capacity.

    f. The Whiterock Managed Fill will accept sorted inert construction and demolition (C&D) materials, asbestos and contaminated soils. The airspace of the managed fill will be approximately 500,000 m^3. This is equivalent to approximately 800,000 tonnes of waste material or an estimated 40,000 tonnes per annum.[1]

[1] Source: WSP 2025 *Whiterock Quarry & Managed Fill - Analysis of the Significant Benefits to the Region*, 21 May 2025, Rev 0 (The WSP Report) - section 1, page 1.

Future Without Whiterock Managed Fill Scenarios

2. Without the proposed Class 3 Managed Fill facility at the Whiterock Quarry site, construction and earthmoving businesses involved with greenfield and brownfield land development, infrastructure renewals and upgrades, and general site remedial works in Christchurch City and surrounding areas will most likely be required to continue utilising the Kate Valley Class 1 Landfill (or a more distant facility) for the disposal of contaminated soils. As compared to the Whiterock proposal, this would incur additional costs in terms of:

    a. Additional cartage costs (including both economic and non-economic cost components), due to the Kate Valley site being 15 kilometres further from the centre of Christchurch;

    b. An "opportunity cost" in terms of not maximizing the remaining capacity of the Kate Valley Landfill for the management of degradable organic waste, including additional controls for larger volumes and stronger strength of leachate, and generation of landfill gas associated with Class 1 rather than Class 3 Waste Acceptance Criteria;

    c. Incurring higher than necessary landfill disposal charges reflecting the higher Class 1 waste disposal levy and a payment for emission trading scheme (ETS) credits and the utilisation of a landfill with the capability to accept more complex waste; and

    d. An "opportunity cost" in not maximizing the electricity generation capability of the Kate Valley Landfill, by accepting large volumes of inert material[2] that could be managed by a lower-class landfill facility as is proposed at Whiterock.

3. Alternatively, Class 3 inert material would have to be disposed of at disposal facilities approved to receive this type of waste but located further distances from the centre of Christchurch. For example, I understand that in the past earthmoving companies have utilised facilities suitable for this purpose at[3]:

    a. Waipara (approximately 65 km from the centre of Christchurch);

    b. Temuka (approximately 145 km from the centre of Christchurch);

[2] i.e. as opposed to organic material that degrades creating methane as a source of energy.
[3] Source: *Whiterock Limestone Quarry and Managed Fill landfill – Resource Consent Applications and Assessment of Effects on the Environment,* 28 March 2024, Revision 0

c. Dunedin (approximately 360 km from the centre of Christchurch);

d. Reefton (approximately 252 km from the centre of Christchurch);

e. Blenheim (approximately 309 km from the centre of Christchurch); and

f. Greymouth (approximately 239 km from the centre of Christchurch).

4. Under this scenario additional cartage costs would be incurred and, in the event that a new facility was required to be developed, additional consenting and development costs would also be incurred.

5. The WSP Report (see pages sections 4.1 and 4.2, page 7) has identified the most likely alternative and existing disposal sites to be Kate Valley (a Class 1 site, 65 kms from the Christchurch CBD), Taiko Road, Cave (a Class 2 site, 192 kms from the Christchurch CBD) and Plantation Road, Hororata (a Class 3 site, but one that does not take everything that could be disposed of at Whiterock, 62 kms from the Christchurch CBD).

6. Finally, two future alternatives might be (i) the continued use of the Burwood Resource Recovery Park – this landfill now operates as a Class 4 managed fill facility and is scheduled to be closed in 2026 and is unable to accept some waste streams (asbestos waste or contaminated soils above recreational soil contaminant standard levels), which could be disposed of at the proposed Whiterock Managed Fill;[4] and/or (ii) the proposed Woodstock Quarry landfill at Trigg Hill if it is successful in gaining the necessary consents – this option would still incur a transport cost penalty from many locations[5] and is a Class 2 landfill facility, therefore one with a higher capability and cost than is required for the disposal of Class 3 waste. Further, unlike the proposed Whiterock Managed Fill, the Woodstock Landfill will not be available as quickly as Whiterock[6] and therefore may not be ready for projects in the immediate to medium-term, including the nearby Canterbury projects listed in the Fast-Track Approvals Act.

7. Whilst there are some existing and possible alternatives to the proposed Whiterock Managed Fill, the development of the proposed site at Whiterock is likely to complement the alternative disposal options, enhance competition, and provide a dedicated facility for the specific waste streams that do not require the higher level of

[4] Source: WSP Report section 4.3, page 7.
[5] Ibid section 4.3, page 7..
[6] Ibid section 4.3, page 7.

containment offered by Class 1 or 2 sites and lower overall waste disposal costs within the Canterbury region.

Report Purpose

8. The purpose of this report is to assess the economic benefits of the proposed Whiterock Class 3 Managed Fill. The report together with other technical reports assessing the benefits of the manage fill and quarried lime, and the adverse effects, will form part of the application for FTAA referral approval.

Report Format

9. In addition to this introductory section, this report is in five parts covering the following:

    a. A consideration of the relevance of economic benefits under the Fast-track Approvals Act 2024 (FTAA);

    b. The economic importance of lower-cost and targeted disposal facilities for the Canterbury Region;

    c. The economic benefits of the proposed Whiterock Managed Fill;

    d. Potential economic costs of the proposed Whiterock Managed Fill; and

    e. The report's conclusions.

ECONOMICS AND THE FTAA

Significant Regional Benefits

10. The purpose of the FTAA, as set out at section 3, is "to facilitate the delivery of infrastructure and development projects with significant regional or national benefits". Later sections of this report detail how the proposed Whiterock Managed Fill project will reduce waste disposal costs and how this will help facilitate proposed infrastructure and development projects and thereby deliver significant economic benefits to the Canterbury region.

11. Further, Section 22 of the FTAA, under the criteria for accepting a referral application, lists a number off actors, which are relevant to the economic benefits of the proposed Whiterock Managed Fill. These include:

a. At subsection (1) (a): that “the project is an infrastructure or development project that would have significant regional or national benefits;”

b. At subsection (2) (a): that for the purposes of subsection (1) (a) the Minister may consider whether the project-

…

(ii) “will deliver new regionally or nationally significant infrastructure or enable the continued functioning of existing regionally or nationally significant infrastructure;”

(iii) “will increase the supply of housing, address housing needs, or contribute to a well functioning urban environment …” and

(iv) “will deliver significant economic benefits;”

12. The remainder of this report principally addresses the “significant economic benefits” the Whiterock Managed Fill will deliver by reducing the costs of disposing of Class 3 waste material in the Canterbury region, especially Greater Christchurch. These benefits will accrue to local businesses and residents both directly and indirectly as ratepayers and taxpayers. This report also describes how the project is relevant to the other criteria listed in the previous paragraph.

Viewpoint

13. 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 that is to be adopted. This helps to define which economic effects are relevant to the analysis. Typically, a city (district) or wider regional viewpoint is adopted and sometimes even a nationwide viewpoint might be considered appropriate.

14. For the proposed Whiterock Managed Fill the primary beneficiaries will be the businesses, residents and ratepayers of the Canterbury region, but especially “Greater Christchurch” – i.e. the Waimakariri District, the Selwyn District and Christchurch City. Greater Christchurch forms a significant part of the Canterbury region, especially having regard to existing and projected future population levels and general economic growth. For example, Greater Christchurch accounts for 82.4% of the Canterbury region’s population and this is expected to grow to 83.4% by 2048.

15. There are also private or financial costs and benefits associated with the proposed new landfill. If consents are granted allowing the landfill to be developed, and those

consents are given effect to, then it can be assumed that the private or financial costs and benefits have been responsibly and properly analysed and that from the viewpoint of the Applicant, which has money at risk, the expected financial benefits exceed the expected costs. Accountability for the accuracy of the financial analysis clearly rests with the Applicant and ultimately the net financial benefits it might receive from the proposal are not directly relevant to the assessment of effects under the FTAA.

16. Therefore, the focus of this report is generally on the wider economic effects on parties other than the Applicant. Economists refer to such effects as "externalities"[7]. However, as is explained later in this report, increases in the costs for contractors undertaking land development, Council infrastructure renewals and upgrades and remedial projects and other potential users of the Whiterock Managed Fill will generally flow through into higher prices for waste disposal, increasing infrastructure and other building capital and maintenance costs. This will detrimentally impact on not just developers and businesses involved with construction and demolition, but also local residents - directly as customers and indirectly as ratepayers and taxpayers. Also, increases in the costs of waste disposal are relevant with respect to the efficient use and development of natural and physical resources.

17. Therefore, preventing or limiting future cost increases for waste disposal and helping to facilitate major infrastructure and development projects is paramount to delivering "significant economic benefits" to the wider Canterbury regional community.

Non-Economic Effects

18. This report addresses the economic effects[8] of allowing the proposed Whiterock Managed Fill's establishment. Non-economic effects are not covered in this report (e.g. air quality, landscape, traffic, and noise effects).

19. In economics, 'intangible' costs and benefits are defined as those which cannot be quantified in monetary terms. Sometimes attempts can be made to estimate monetary values for 'intangible' non-economic costs and benefits using techniques such as willingness to pay surveys or inferring values on the basis of differences in

[7] Defined as the side effects of the production or use of a good or service, which affects third parties, other than just the buyer and seller.
[8] Sometimes economic effects can have a social dimension – e.g. employment and income effects. Also this report quantifies the reduction in carbon emissions from reduced transport distances to the proposed landfill.

property values. Once quantified in monetary terms, these effects can supposedly be considered as part of the assessment of economic wellbeing and efficiency effects.

20. However, such techniques are frequently subject to uncertainty and criticism. It is generally better to not attempt to estimate monetary values for these effects but to leave them to be assessed by appropriately qualified experts and for their assessments to form part of the application of the relevant legal test. This also avoids the danger of 'double-counting' – i.e. including them within a quantified measure of economic benefit and treating them as a separate consideration.

THE ECONOMIC IMPORTANCE OF LOWER-COST AND TARGETED DISPOSAL FACILITIES FOR THE CANTERBURY REGION

21. Over the last ten years, Protranz Earthmoving Limited has been involved in a number of the major land development projects in Christchurch that required site remediation works, where significant earthworks volumes and contaminated soil disposal to various appropriate facilities was required, and at times to facilities outside Canterbury where it was more cost effective. This has included:

    a. The Christchurch Convention centre;

    b. The new Christchurch Central library;

    c. The Christchurch metro sports facility;

    d. The Christchurch multi-use arena;

    e. The performing arts precinct; and

    f. King Edward Barracks (central Christchurch).[9]

22. In addition, over the last five years there are a number of remediation projects specifically in the North Canterbury area that could have benefited from a nearby managed fill such as that proposed at Whiterock. These include:

    a. WDC North Eyre Road Mandeville – illegal dumping on roadside leading to approximately 6,500 tonnes of asbestos contaminated soil;

---

[9] Sourced from Appendix T - *Site Selection and Wider Community Benefits*, prepared by Protranz Earthmoving Limited, dated 18th December 2023, attached to WSP 2024. *Whiterock Limestone Quarry and Managed Fill landfill – Resource Consent Applications and Assessment of Effects on the Environment*, 28 March 2024, Revision 0.

b. ECAN Amberley tyre fire – illegal storing of tyres which led to a fire and the contamination of soil;

c. ECAN Saltwater Creek – asbestos contaminated concrete was stored on the site;

d. McAlpines' sawmill, Southbrook – arsenic contaminated soil;

e. SH1/Tram Road realignment – coal tar contamination found under road; and

f. Waipara hotel fire – leading to contamination of soil.[10]

23. In all of these instances contaminated soil has had to be disposed of at facilities approved to receive the type of contaminant and this has frequently involved carting materials long distances and/or the use of the Kate Valley Landfill, as the nearest facility able to accept this type of waste, but which is more suited for the management of degradable organic waste. [11]

24. Going forward, there are a number of large-scale public and private infrastructure projects in Greater Christchurch and North Canterbury that are in the planning stages and could benefit from a more cost effective landfill option (either directly or through increased competition) for the disposal of sorted inert construction and demolition material and contaminated soils. These include:

a. SH75 Halswell Road Upgrade;

b. Burnham Military Camp – Project Anvil

c. Burnham Military Camp – Horizontal Infrastructure Upgrade

d. Burnham Military Camp – Regional Supply Facility;

e. Christchurch Red Zone Development;

f. Christchurch East Frame Superlot Residential Development;

g. Waimakariri Asbestos Dump, Downs Road;

h. Christchurch International Airport Freight Apron Expansion;

[10] Ibid.
[11] Ibid.

i. Air New Zealand Perimeter Road Site Remediation;

j. Te Kaha – Street Upgrades;

k. SH1 Woodend Bypass;

l. CCC Onuku Landfill Remediation;

m. CCC Okains Bay Landfill Remediation; and

n. ECAN Residential.[12]

25. To illustrate the benefits the projects listed in clauses a – d above and the McAlpine's project in paragraph 22 had comparative costing analysis undertaken. [13]Enabling the provision of a more cost-effective landfill option for these and other future projects will deliver significant economic benefits to residents, businesses and the Canterbury community generally.

26. The cost of disposal of waste to landfill is regulated by the Waste Minimisation (Calculation and Payment of Waste Disposal Levy) Regulations 2023. This sets the requirements for payment of a waste levy depending on the class of landfill. Class 1 facilities are also required to pay for Emissions Trading Scheme (ETS) credits for the discharge of greenhouse gases, noting that default and unique emissions factors apply.

27. A Class 3 facility incurs a lower waste disposal levy and does not incur ETS charges, thereby making the proposal a cheaper disposal option compared to the Kate Valley Regional Landfill (a Class 1 facility).Class 2 facilities incur higher waste disposal levies than Class 3 facilities but, like Class 3 facilities, they do not incur an ETS charge. Class 1 and Class 2 facilities have increased operating costs due to their need for the additional controls that enable them to meet the various requirements of the broader range of acceptable waste streams.

28. In a competitive market, higher disposal costs for contaminated soils will result in higher prices for the development of sites, and for the construction and maintenance of infrastructure and other buildings. The proposed Whiterock Managed Fill would have lower operating costs than the Kate Valley Regional Landfill and therefore is

[12] Ibid.
[13] Refer WSP Report section 5.2, page 10, Table 2.

expected to charge a materially lower gate fee for contaminated soils and inert Construction and Demolition (C&D) materials. The Whiterock site would therefore be likely to enable the diversion of Class 3 waste disposal from the more expensive and less appropriate Kate Valley and Taiko Road landfills. It would also provide an alternative site closer to Christchurch capable of accepting a broader range of materials and higher concentration soils than the existing Class 3 facility at Hororata (mid Canterbury) and/or delay the need for yet-to-be-developed new landfills located further away from points of waste generation – i.e. from the main urban centres within Greater Christchurch.

29. Waste disposal is an important cost component of infrastructure and other land and building development projects, such as those examples provided in the paragraphs above. Putting downward pressure on inert C&D materials and contaminated soil disposal costs, would therefore benefit businesses and residents- both directly and indirectly as ratepayers and taxpayers. Higher costs for development reduce the overall competitiveness of a local economy, reducing employment, incomes and economic growth.

30. Keeping the cost of disposing of sorted inert C&D materials and contaminated soil as low as possible was important to the recovery of Christchurch post-earthquakes. This period of time addressed not just the rebuilding, repair and reinstatement of infrastructure and buildings that existed prior to the earthquake, but also the future economic and social needs of the City. Minimising the cost of landfill disposal was important with respect to all aspects of recovery.

31. As the City moves into the “regeneration” phase the ongoing needs of the City become increasingly important. As explained earlier in this report, the BAU demand for waste and soil disposal will continue with a number of development projects on the horizon and with future population, household and employment growth requiring additional waste and soil disposal capacity, in addition to the increased requirements as a result of the earthquakes.

32. Lower cost sorted inert C&D materials and contaminated soil disposal is also relevant to the issue of affordable housing, since it impacts on new subdivision development and urban renewal costs.

THE ECONOMIC BENEFITS OF THE PROPOSED WHITEROCK MANAGED FILL

Reduced Waste and Contaminated Soil Transport Costs[14]

33. Compared to the Whiterock Managed Fill site, the Kate Valley Landfill site is an additional 15 km from the centre of Christchurch. Table 3 of the WSP Report, estimates a haulage cost saving estimated to be $360,000 for the 800,000 tonnes of inert C&D materials that could be disposed of in the proposed Whiterock Managed Fill, or $18,000 per annum over the 20 year life of the facility as compared to the Kate Valley Regional Landfill option.

34. The Taiko Road (Cave) landfill is an additional 144 km from the centre of Christchurch implying additional haulage costs of $3.456 million over the Whiterock Managed Fill's assumed 20 year life, or $172,000 per annum.

35. The Plantation Road (Hororata) managed fill is an additional 12 km from the centre of Christchurch implying additional haulage costs of $0.288 million over the Whiterock Managed Fill's assumed 20 year life, or $14,400 per annum.

36. The transport costs associated with the movement of inert C&D materials and contaminated soil incorporate both the running costs of operating vehicles (such as fuel, oil, tyres, and distance-related vehicle depreciation) as well as the standing (or time) costs associated with owning and operating a vehicle (time-related vehicle depreciation, insurance, driver's wages and required return on capital). Included in vehicle running costs are road user charges, which are a proxy for the cost of maintaining the road, as well as including a contribution towards new capital works for enhanced road capacity and safety. Road user costs are distance related, and since they are a function of the number of heavy vehicles using a section of road, so are road maintenance costs.

37. There are also three important external effects (or "externalities") associated with road transport, and which need to be taken into account. Firstly, there are the environmental benefits associated with reduced road transport in the form of reduced emissions of CO_2 and other pollutants. The WSP Report indicates that the proposed Whiterock Managed Fill will result in annual savings in carbon dioxide emissions of 45,284.07 kg per annum compared to Kate Valley, 434,727.06 kg per annum

[14] Data in this section from WSP Report, sections 5.2 and 5.3, pages 10-12.

compared to Taiko Road (Cave) and 36,227.06 kg per annum compared to Plantation Road (Hororata).

38. Secondly, there are reduced road accident costs, which are not internalised in freight rates. These include reduced costs to other traffic and public health and policing agencies. Thirdly, there are reduced congestion effects of road transport for other road users. Congestion cost reductions in this context relate to lower vehicle running and standing costs and travel time costs for users of the road other than the trucks carting the inert C&D materials and contaminated soil.

39. If other alternative but yet to be developed landfill sites are approved, then these sites are either likely to be more distant still from main urban centres within Greater Christchurch with higher additional transport costs (including cartage costs and carbon emissions, road accident and road congestion externality costs) being incurred, or do not accept the same the soil concentrations and range of inert C&D materials. For example, the proposed Woodstock landfill would have a distance penalty relative to the Whiterock site of 22km (and as a Class 2 facility would incur higher external levies and therefore be expected to have a higher gate fee than Whiterock – see next section of this report). Also any new site (including the proposed Woodstock site) is unlikely to have all the same advantages as the proposed site (which has a suitable void space already available). Another example is the proposed Southern Screenworks Class 3 Managed Fill north west of Rolleston. Although it is located 32km from Christchurch so is closer than Whiterock, it is a gravel aggregate quarry / cleanfill still early in its quarry lifespan and is located over an unconfined drinking water aquifer. As no liner is proposed the waste acceptance is limited compared to Whiterock. [15]

40. In the event that the Burwood Landfill does not close in 2026 as anticipated, there would be a small transport cost disadvantage for the Whiterock facility as compared to Burwood – the WSP Report estimates this to be $912,000 over the 20 year period the Whiterock facility is expected to be open, or $45,600 per annum. However, any extension of Burwood Landfills operating life will likely be for less than 20 years. Also the Burwood landfill is constrained relative to the proposed Whiterock facility in that it cannot accept all Class 3 material.[16]

[15] See WSP Report section 4.2 and 4.3, pages 7-8.
[16] See WSP Report section 4.2 and 4.3, pages 7-8. .

The Benefit of Reduced Landfill Costs

41. The waste disposal options within Canterbury are fairly limited now and will become more so with Burwood Landfill operations most likely drawing to a close in 2026. For the past 10 years, the Burwood Landfill has received a significant volume of C&D waste generated through the Canterbury Earthquake Sequence (more than 800,000 tonnes of C&D waste received[17]).

42. However, over recent years the Christchurch City Council has scaled that back to accepting contaminated soils only and vocalised its intentions to close Burwood Landfill. Following the closure of the Burwood site, and lack of appropriate alternatives there may be increased pressure on Kate Valley to receive more low level contaminated soils. With the aim of maximising the available airspace for the management of degradable organic wastes, Kate Valley should be the primary disposal site for municipal solid waste, special waste and highly contaminated soils in accordance with its approved acceptance criteria and not be filled with lower level contaminated soils.

43. Whether or not Council extends the Burwood operation beyond 2026, the benefits of the proposed facility at Whiterock would remain largely the same. Based on the type of waste accepted and the low likelihood that any extension would cover the period of proposed operation at Whiterock. [18]

44. The economic benefits from the diversion of lower level inert waste materials to the proposed Whiterock Managed Fill (as opposed to a Class 1 landfill) can be estimated on the basis of the comparative fees charged for Class 1 and Class 3 landfills. The current disposal fee of $198 per tonne at the Kate Valley Landfill is reflective of the cost of compliance for a Class 1 landfill and the value of the void space set by Transwaste. WLL has yet to confirm what its gate fee at the proposed Whiterock Managed Fill will be, but the Applicant has indicated it will sit around $110.00 per tonne, which is comparable to the current fee charged at the Burwood Landfill[19] Given the expected capacity for the proposed Whiterock Managed Fill of 500,000 cubic metres, equivalent to 800,000 tonnes, or an average of 40,000 tonnes per

[17] Waste Management Press Release (4 Oct 2021), accessed online (12 May 2025): https://www.wm.nz/news-and-media

[18] See WSP Report, sections 4.3 page 8.

[19] WLL has indicated that it will have a variable gate fee, depending upon the level of contamination. The $110 per tonne is at the bottom end of the range but will likely account for the majority of waste disposed of at the facility. Other facilities also adopt a similar variable fee depending upon contamination levels.

annum over the landfill's anticipated operating life of 20 years, Table 3 of the WSP Report estimates economic benefits of $74.2 million in total or $3.7 million per year from utilising the Whiterock Managed Fill instead of the Kate Valley Landfill for Class 3 waste, with respect to gate fees and excluding any additional transport costs.[20]

45. The current gate fees at the Taiko Road Landfill (Cave) and Plantation Road (Hororata) Managed Fill, which are Class 2 and Class 3 facilities respectively, are $150 per tonne and $155 per tonne respectively. The cost savings would be $35.8 million or $1.8 million per annum from utilising the Whiterock Managed Fill instead of the Taiko Road (Cave) landfill; and $36.0 million or $1.8 million per annum from utilising the Whiterock Managed Fill instead of the Plantation Road (Hororata) Managed Fill.

46. Incorporated within the gate fees for each of the alternative landfills are the waste disposal levies and the ETS charges. [21] The comparative gate fees also reflect the higher establishment and operating costs associated with facilities capable of disposing of higher categories of waste.

47. Combining the haulage cost and gate fee savings together implies potential cost savings from the proposed Whiterock Managed Fill of:

    a. Compared to the Kate Valley Landfill - $74.6 million in aggregate, $3.7 million per annum or $93.2 per tonne of waste material;

    b. Compared to the Taiko Road (Cave) Landfill - $39.3 million in aggregate, $2.0 million per annum or $49.1 per tonne of waste material; and

    c. Compared to the Plantation Road (Hororata) Managed Fill - $36.3 million in aggregate, $1.8 million per annum or $45.4 per tonne of waste material.

Electricity Generation 'Opportunity Cost' Benefits

48. The Kate Valley Landfill has invested in harnessing the by-product of methane and carbon dioxide gases from the landfill for the purposes of power generation. The power generation will continue to increase throughout the life of the landfill and peak

[20] Note: The WSP Report analysis incorporates Government planned future increases in Waste Disposal Levy through to 2027 – see section 5.2, page 11.
[21] WSP Report see Section 5.2 page 10, Table 3.

after the landfill is decommissioned. The gas is generated by the decomposition of organic waste deposited at the landfill. [22]

49. However inert waste, such as the inert C&D materials and contaminated soil (intended to be disposed of at the proposed Whiterock Managed Fill) does not generate any material amounts of landfill gas. Every cubic metre of inert waste that is disposed of at Kate Valley reduces the potential scope to generate power from decomposed organic waste resulting in a less efficient use of substantial investment in this landfill gas management infrastructure.[23]

50. No attempt has been made to quantify this "electricity opportunity cost" benefit in monetary terms but it is an additional economic benefit that would result from the diversion of inert C&D materials away from the Kate Valley Landfill to the proposed Whiterock Managed Fill. The Kate Valley Landfill is consented to operate until 2040. Transwaste Canterbury [24] anticipates gas will continue to be generated from the landfill after its closure for approximately 20-30 years depending on the type of organic waste received at the site.[25] As such the lifespan of the landfill and provision of electricity would be maximised by receiving waste that falls under Kate Valley's Class 1 Waste Acceptance Criteria and therefore this additional benefit of the proposed Whiterock Managed Fill will continue to accrue over an extended period out to 2044 to 2054.The financial benefits of this additional electricity generation will accrue in part to the wider community and Canterbury region generally, since Transwaste Canterbury is 50% owned by five local district councils.

Reduced Inert C&D Materials and Contaminated Soil Disposal Prices[26]

51. Savings in the disposal costs of inert C&D materials and contaminated soil (as described above) imply increases in resource use efficiency. However in terms of wider regional economic benefits positive impacts will occur only if these cost savings are translated into cost savings for customers – or at least disposal prices are maintained at existing levels for longer before cost increases are reflected in higher

[22] https://transwastecanterbury.co.nz/wp-content/uploads/2020/08/Kate-Valley-Renewable-Energy.pdf

[23] Appendix T Site Selection and Wider Community Benefits, from WSP 2024, *Whiterock Limestone Quarry and Managed Fill landfill – Resource Consent Applications and Assessment of Effects on the Environment*, 28 March 2024, Revision 0,

[24] A 50/50 public/private joint venture between Christchurch, Hurunui, Selwyn, Waimakariri and Ashburton Councils and Waste Management.

[25] https://transwastecanterbury.co.nz/wp-content/uploads/2020/08/Kate-Valley-Renewable-Energy.pdf

[26] Or restraint on future price increases.

prices. If the proposed Whiterock Managed Fill consents are not granted, it is likely that land developments, new Council infrastructure and renewal of existing infrastructure, and soil remediation projects will be faced with higher inert C&D materials, asbestos and contaminated soil disposal costs as a consequence of reduced choice, higher transport charges and higher landfill charges.

52. A new lower cost Whiterock Managed Fill would add competition to the Canterbury region waste disposal market, and help delay the time when higher cost landfill alternatives must be utilised and therefore help to delay increases in the price for inert C&D materials and contaminated soil disposal. Lower prices for inert C&D materials and contaminated soil disposal will lower the costs for infrastructure projects and other building construction and maintenance projects and help facilitate their execution. Also, to the extent that central and local government budgets for the provision and operation of infrastructure are fixed, lower costs imply reduced delays in the provision of improved infrastructure services, beneficially impacting on community economic and social wellbeing.

POTENTIAL ECONOMIC COSTS OF PROPOSED WHITEROCK MANAGED FILL

Alternative Land Uses

53. The current use of the site is for a lime quarry. The proposed development of the landfill will not result in displaced agricultural or other uses. Also WLL, 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.

54. Also because WLL paid the market price for the land, the use of the land for a landfill and its subsequent rehabilitation is the best use of the site in economic terms, as judged by the market.

Public Infrastructure Costs

55. 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 proposed Whiterock Managed Fill no such externality costs will arise. The Managed Fill 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, WLL will meet the costs of any additional infrastructure improvements required – e.g. the construction of

a bridge over the Karetu River so that trucks do not have to drive through the existing ford.

Local Road Congestion Costs

56. An analysis of the traffic effects of the proposed Whiterock Managed Fill development has concluded that the proposed access and egress arrangements will accommodate the volumes of vehicles envisaged and that the traffic generated will be minor and can be managed appropriately within the adjacent road network.[27]

Nearby Property Value Effects

57. Property value effects are a reflection of, not in addition to, any adverse effects from the quarrying operations for nearby residents. Any change in property value effect does not materialize unless and until an owner sells the property. At this point there might be a wealth loss to the seller, but no ongoing adverse effects to be borne by the seller. The purchaser of the property might gain by having to pay a lesser price for the property but might experience any costs of any ongoing adverse effects. I understand the Environment Court has accepted that to include both adverse effects for local residents and property value effects, would involve double counting.[28]

CONCLUSIONS

58. The purpose of the FTAA is "to facilitate the delivery of infrastructure and development projects with significant regional or national benefits. In addition, section 22 of the FTAA under the criteria for accepting a referral application, lists a number of factors, which are relevant to the economic benefits of the proposed Whiterock Managed Fill. These include:

    a. At subsection (1) (a): that "the project is an infrastructure or development project that would have significant regional or national benefits;"

    b. At subsection (2) (a): that for the purposes of subsection (1) (a) the Minister may consider whether the project-

    …

[27]See Whiterock Lime Quarry and Landfill High-Level Transport Assessment; WSP New Zealand Limited 9 August, 2023.
[28]See for example, paragraphs 249 - 256 of: Environment Court 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.

(ii) “will deliver new regionally or nationally significant infrastructure or enable the continued functioning of existing regionally or nationally significant infrastructure;”

(iii) “will increase the supply of housing, address housing needs, or contribute to a well functioning urban environment …” and

(iv) “will deliver significant economic benefits;”.

59. Putting downward pressure on inert C&D materials and contaminated soil disposal costs benefits to Central Government, Councils, businesses and residents - both directly and indirectly as ratepayers and taxpayers - since lower cost inert C&D materials and contaminated soil disposal will help facilitate significant regional infrastructure and other building development projects.

60. The proposed new Whiterock Class 3 Managed Fill will give rise to the following economic benefits:

a. Lower inert C&D materials and contaminated soil disposal transport costs, including lower cartage costs, carbon emissions, and other road externality costs;

b. Lower inert C&D materials and contaminated soil disposal landfill charges, reflecting a more appropriate level of infrastructure, a lower waste levy and no ETS charges being payable;

c. Preserving the capacity of Kate Valley for waste that cannot go to Whiterock and which offers the potential for an overall increase in the electricity generation potential from the Kate Valley Landfill; and

d. Delaying the need to consent and develop new sites for landfills, which are likely to be located further distance from Greater Christchurch’s main urban centres as compared to the Whiterock site.

61. The proposed Whiterock Managed Fill will not result in economic externality costs.