Whiterock Quarry and Managed Fill

Response to RFI dated 7 October 2026

Executive Summary

The regional significance of the Whiterock Quarry and Managed Fill Project derives from a combination of benefits. The economic benefits of the Project are a material aspect of the overall assessment and are substantial. However, this is one of those cases where regional significance is not measured solely by the magnitude of quantified economic benefits, but also by the contribution the Project makes to the efficient functioning of Canterbury's waste management system and the development and infrastructure that system supports.

Section 22(2) identifies matters the Minister may consider when assessing significant regional or national benefits, of which significant economic benefits are one matter. As summarised below, the Project delivers benefits across several of those matters. Its regional significance arises from the provision of new regional infrastructure, enabling existing regionally significant landfill infrastructure to be used for its intended purpose, and the wider economic and other benefits identified in the application.

The Project's significance needs to be considered across the full package of regional benefits it delivers.

The Project responds to an identified constraint in Canterbury's waste management system: a shortage of appropriately located, appropriately classified and cost-effective Class 3 disposal capacity. While Canterbury has existing landfill capacity, much of that capacity is provided by higher-class facilities designed for different waste streams and located further from the principal areas of waste generation. This results in unnecessary use of finite Class 1 and Class 2 capacity, additional transport and higher disposal costs.

Whiterock will address this constraint in Canterbury's waste management system by providing approximately 500,000 m³, or 800,000 tonnes, of purpose-built Class 3 capacity over approximately 20 years within an existing quarry void. The Project is infrastructure for the purposes of the National Policy Statement for Infrastructure 2025, which expressly includes waste-disposal facilities within the definition of infrastructure.

The Project is regionally significant because it will:

- **Fill an identified gap in Canterbury's disposal infrastructure**, by providing dedicated Class 3 capacity serving Greater Christchurch and the wider Canterbury region.
- **Improve waste management efficiency by better use of existing waste infrastructure through "right waste, right place"**, by directing Class 3 material to a facility designed for that material rather than unnecessarily using Class 1 and Class 2 capacity, including at Kate Valley. This keeps specialised landfill capacity available for waste streams that require higher levels of containment and environmental control.

  Independent economic analysis identifies substantial economic benefits, including ongoing contributions to regional GDP and employment, together with transport and resource efficiency gains. It confirms that Whiterock's benefits extend beyond direct project expenditure. Additional Class 3 capacity improves how Canterbury's existing disposal infrastructure is used, reduces transport and resource costs, supports development requiring access to suitable disposal facilities, and increases the resilience and flexibility of the regional waste-management system.

- **Enable the continued functioning of existing regionally significant infrastructure**, by preserving Class 1 and Class 2 landfill capacity for waste requiring those higher levels of containment.
- **Support housing, urban development and infrastructure delivery** by providing a compliant disposal pathway for contaminated soils and construction and demolition materials generated by those activities. Much of the material Whiterock is intended to receive arises from housing, urban development and infrastructure construction, maintenance and renewal. Providing an appropriately located and cost-effective disposal pathway for that material supports the efficient delivery of those activities.
- **Make productive use of an existing quarry void**, by providing new disposal capacity within an already disturbed site while enabling progressive rehabilitation.

These benefits are regional because they extend beyond the Whiterock site. The Project adds new regional disposal capacity, serves a regional waste-management function, and supports development, infrastructure delivery and environmental management across Greater Christchurch and Canterbury. It also preserves higher-class landfill capacity and benefits the wider communities and activities that rely on that infrastructure.

The Project also delivers meaningful economic benefits, including regional economic activity, transport and system-efficiency gains, lower disposal and haulage costs, and the value of preserving higher-class landfill capacity. Those benefits form part of the wider package of regional benefits, rather than providing the sole measure of significance.

In short, Whiterock is regionally significant because Canterbury needs fit-for-purpose Class 3 disposal capacity and the Project provides that capacity at a regional scale. It supports development and infrastructure delivery, preserves scarce higher-class landfill capacity, improves the efficiency and resilience of the regional waste network, and enables existing strategic infrastructure to be used for the waste that actually requires it.

Section 22 criteria relevance to the Project

The Project's significant regional benefits arise across a number of the matters the Minister may consider under section 22(2); they are not dependent on any single criterion.

The panel's decision on the Downtown Carpark Redevelopment fast-track project at paragraph 266 of the substantive decision importantly notes:

> *We also accept that the FTAA benefits inquiry is not limited to economic benefits, still less to quantified net economic benefits.*

The table below summarises the matters relied on, the factual basis for each, and where the supporting evidence can be found.

Section 22 consideration	Relevance	Basis	Where addressed
s22(2)(a)(i) Priority project in government, local government or sector plan/strategy	Aligned, but not specifically identified	Whiterock is not a named priority project but aligns with national and regional waste-management policy direction, including provision of fit-for-purpose disposal capacity and improved resource efficiency.	Attachment 4, page 3-4
s22(2)(a)(ii) New regionally significant infrastructure / enabling existing infrastructure	Key component of regional benefits	Provides approximately 800,000 tonnes of new Class 3 capacity and enables more efficient use of existing higher-class infrastructure, including	Attachment 4, page 4-6 RFI response Q2 Attachment 1 to RFI response

		Kate Valley, by preserving finite Class 1 and Class 2 capacity.	
s22(2)(a)(iii) Housing / well-functioning urban environment	Relevant	Provides disposal infrastructure supporting housing, brownfield redevelopment, urban development and associated infrastructure, particularly across Greater Christchurch.	Attachment 4, page 6-8
s22(2)(a)(iv) Significant economic benefits	Substantial economic benefits	Economic activity and system-efficiency benefits are identified by Sapere, together with transport/disposal efficiencies and value associated with preserving higher-class infrastructure.	Attachment 4, page 8-10 Attachment 5 Sapere report RFI response to Q2
s22(2)(a)(v): support primary industries	Relevant	Continued supply of agricultural lime and track rock and associated freight efficiencies support Canterbury primary-sector activities. These are supplementary Project benefits.	Attachment 4, page 10-11 RFI response Q1
s22(2)(a)(vi): development of natural resources	Relevant	Continued productive use of the limestone resource excavated in forming the managed fill floor and batters.	Attachment 4, page 11
s22(2)(a)(vii): climate-change mitigation	Supporting benefit	Shorter haulage distances can reduce transport-related emissions relative to more distant disposal alternatives; scale depends on utilisation and counterfactual facility.	Attachment 4, page 8-10
s22(2)(a)(viii): climate adaptation / natural hazards / recovery	Limited / indirect	No direct adaptation or hazard-recovery benefit is relied on. Additional disposal capacity contributes indirectly to system resilience.	Attachment 4, page 8-10
s22(2)(a)(ix): significant environmental issues	Relevant	Supports appropriate management of contaminated material, better allocation of waste between landfill classes, and contaminated-land and closed-landfill remediation.	Attachment 4, page 8-10
s22(2)(a)(ixa): grocery competition	Not applicable	No direct relationship	
s22(2)(a)(X): consistency with local/regional planning documents	Relevant, with acknowledged areas of tension	Broad alignment with waste-management and infrastructure directions. Attachment 4 also acknowledges outstanding cultural-value issues.	Attachment 4, page 14
s22(2)(b): Any other matter considered relevant	Important	Regional demand for Class 3 capacity, existing disposal constraints, reuse of an existing quarry void, network resilience and choice, preservation of more expensive higher-class capacity, and industry evidence of need. It will improve waste management efficiency by better use of existing waste infrastructure through "right waste, right place".	Attachment 4, page 14-15 RFI response to Q2 Attachment 1 to RFI response

QUESTION 1 Quarry Operations

The application documentation provides limited information about the project's ongoing quarry operations, particularly but not limited to how the quarry operations will deliver significant regional benefits under section 22(1)(a) and significant economic benefits under section 22(2)(a)(iv).

1. Please provide further information and supporting evidence to substantiate the benefits of the project's ongoing quarrying operations, including quantified economic benefits where relevant. The response should include the underlying metrics, assumptions, and methodology, together with the anticipated scale, geographic extent, and duration of the benefits.

Ongoing Quarry Operations – Regional and Economic Benefits

1. Overview and relationship to the proposed Class 3 managed fill

The Project does not rely on the ongoing quarry operation to establish significant regional benefits under section 22(1)(a). The basis for regional significance is a combination of benefits arising from the Class 3 managed fill infrastructure and the regional function it performs within Canterbury's waste-management network. The ongoing quarry activity nevertheless provides supplementary benefits that form part of the overall package of Project benefits.

The quarrying component is integral to establishing the managed fill facility. Approximately 55,000 tonnes of limestone will be excavated over 10 years through the formation of the managed fill floor and batters. This material will be processed and supplied as agricultural lime (Ag lime) and track rock, enabling productive use of the limestone resource rather than treating it as surplus excavation material.

Quarrying therefore serves a dual purpose: it facilitates development of the managed fill void while enabling productive use of the limestone resource excavated through those works which continues to support a primary industry (s22(2)(a)(v)).

2. Supplementary regional and economic benefits

The ongoing quarrying activity will provide the following supplementary benefits:

- Agricultural support - Continued supply of agricultural lime to Canterbury's agricultural sector, supporting soil management and productive land use.
- Construction and infrastructure - Supply of track rock for dairy lanes, access roading and associated infrastructure activities.
- Regional economic activity - Continued employment, contractor engagement and expenditure through local processing, transport and supply chains.
- Transport efficiency - Co-location of quarrying and managed fill operations creates opportunities for truck back loading with vehicles delivering suitable material to Whiterock, potentially returning with limestone products. This reduces empty return movements and improves freight utilisation.
- Efficient creation and use of the quarry void – Continuation of quarrying creates the physical void required for the managed fill while generating saleable limestone products. The resulting void can then be used for managed fill disposal, reducing the additional earthworks and establishment costs that would otherwise be associated with creating disposal capacity.

These benefits are supplementary to the project's principal regional benefits arising from the provision of Class 3 managed fill infrastructure.

3. Metrics, assumptions and methodology

The assessment is based on the estimated limestone excavation required to form the managed fill floor and batters, rather than an independent programme of quarrying expansion.

The economic benefits arising from the productive use and sale of excavated material, associated employment and supply chain activity, and opportunities to improve transport efficiency through backloading. The available estimates establish the anticipated scale and duration of quarry related activity.

A separate monetary valuation of these quarry-related benefits has not been undertaken. The quarry benefits are supplementary to the Project's principal regional benefits and are not relied upon independently to establish significant economic or regional benefits. The assessment therefore identifies their nature, scale, geographic extent and duration rather than attributing a separate monetary value to them.

These supplementary benefits are therefore identified qualitatively rather than presented as a separately quantified significant economic benefit as presented below.

Matter	**Response**
Scale	Approximately 55,000 tonnes of limestone
Duration	Approximately 10 years
Geographic extent	Canterbury, particularly the existing market for agricultural lime and track rock
Methodology	Estimated limestone excavation required to establish the managed fill floor and batters
Key assumptions	Excavated limestone is suitable for processing and sale and demand for the products continues
Economic quantification	Quarry benefits treated as supplementary; no separate monetary valuation has been undertaken Use of the quarry void reduces the additional excavation required solely to create managed fill capacity and makes productive use of an existing quarry asset. This benefit has not been separately quantified

4. Conclusion

The quarrying activity is therefore an integral enabling activity associated with the development of the Class 3 managed fill site. It provides supplementary benefits through efficient use of the quarry void for managed fill capacity, the continued supply of agricultural lime and track rock, associated economic activity and opportunities for improved freight utilisation. These benefits form part of the overall package of Project benefits but are not relied upon in isolation to establish the Project's regional significance.

The basis for regional significance is addressed in response to Question 2.

QUESTION 2 Regionally significant infrastructure

The project includes activities that meet the definition of infrastructure and would provide a managed fill option. However, the application does not clearly explain how the infrastructure is nationally significant under the National Policy Statement for Infrastructure 2025 or regionally significant under the Canterbury Land and Water Regional Plan. It is therefore unclear how the project would deliver significant regional benefits under section 22(1)(a), deliver new or enable the continued functioning of existing regionally significant infrastructure under section 22(2)(b)(ii), or deliver significant economic benefits under section 22(2)(a)(iv). In deciding the referral application, these are criteria that the Minister must be satisfied that the project will deliver.

2. Please provide further information and supporting evidence to support the assertion that that project would deliver new, or enable the continued operation of existing, regionally or nationally significant infrastructure. The response should clearly explain why the infrastructure in question is regionally or nationally significant and set out the underlying metrics, assumptions, and methodology, together with the anticipated scale, geographic extent, and duration of those benefits. It should also explain the extent to which providing a Class 3 managed fill option would extend the life and capacity of Kate Valley and other facilities in the region, as well as whether this project constitutes a significant regional benefit by enabling the continued functioning of existing regionally significant infrastructure (such as Kate Valley).

The Project addresses the considerations for significance under the Fast-track Approvals Act through complementary and independently relevant infrastructure benefits.

The Project delivers significant regional benefits in two related ways. First, Whiterock will deliver new regionally significant infrastructure, providing approximately 800,000 tonnes of Class 3 disposal capacity over 20 years, addressing an identified regional need and supporting development, infrastructure maintenance and environmental management across Canterbury.

Whiterock will also enable the continued efficient functioning of existing regionally significant infrastructure, required under section 22(2)(a)(ii) particularly Kate Valley Regional Landfill, by preserving finite higher-class disposal capacity for waste requiring that level of containment and reducing pressure on the provision of additional higher-class infrastructure. Kate Valley's scale, multi-district service catchment and essential role within Canterbury's waste-management system establishes its strategic regional importance. Whiterock's contribution to preserving that infrastructure is therefore a substantive regional benefit, additional to the provision of new Class 3 capacity which is a substantive regional benefit in its own right.

Sapere has undertaken further assessment of the Project in response to the RFI – provided as **Attachment 1** to this response. This supplementary assessment builds on its April 2026 economic assessment and provides additional information on the economic and system benefits of relieving existing disposal constraints, the methodology and assumptions underpinning the quantified economic benefits, and Whiterock's role in supporting Kate Valley Regional Landfill and the wider Canterbury waste-management network.

Importantly, the assessment considers the Project as part of the wider regional waste management system. It identifies benefits from additional Class 3 capacity through reduced disposal and transport costs, more efficient use of landfill infrastructure and support for development requiring access to suitable disposal facilities. Sapere also concludes that Whiterock and Kate Valley Regional Landfill can perform complementary roles, improving the allocation of waste between facilities and increasing the capacity and resilience of Canterbury's waste-management network.

Collectively, the Project will deliver new regional infrastructure, preserve and improve the utilisation of existing regionally significant infrastructure and strategic assets, and strengthen the efficiency and resilience of Canterbury's waste management network. These outcomes provide a substantive basis for concluding that the Project will deliver significant regional benefits under section 22(1)(a).

1. Regional significance of the project

The Project will deliver approximately 500,000m^3 (800,000 tonnes) of new Class 3 managed fill capacity within Canterbury over an anticipated 20-year operational life. The facility will serve Greater Christchurch and the wider Canterbury region and address a recognised constraint in the availability of appropriately located and consented Class 3 disposal infrastructure. It will receive predominantly inert construction and demolition materials (C&D), contaminated soils and asbestos-containing materials.

The Project is infrastructure for the purposes of the National Policy Statement for Infrastructure 2025 (NPSI), which expressly includes resource recovery and waste disposal facilities within the definition of infrastructure. The significance of the Project arises not simply from that classification, but from the scale, geographic reach, and regional function of the infrastructure it provides within Canterbury's waste-management network. It will address an identified gap in the region's waste-management network, support housing, infrastructure and development activities across Canterbury, and improve the resilience and efficiency of regional waste-disposal services. These outcomes give rise to significant regional benefits and significant economic benefits to the region through enabling development and infrastructure delivery that relies on access to appropriate disposal capacity.

These same characteristics also support the conclusion that the Project constitutes regionally significant infrastructure within the meaning of the Canterbury Land and Water Regional Plan (LWRP).

The LWRP adopts a broader definition, stating that nationally and regionally significant infrastructure "includes, but is not limited to" infrastructure for activities recognised by a National Policy Statement as being nationally significant - noting that regional policy statements and plans must be interpreted consistently with higher-order national direction. The definition is therefore not confined to the infrastructure types specifically listed in the Canterbury Regional Policy Statement (CRPS)[1].

Objective 3.3 of the LWRP also recognises the importance of enabling nationally and regionally significant infrastructure and supporting its efficient and effective operation, maintenance, development and upgrading. Within that framework, the Project constitutes new regionally significant infrastructure because it provides an essential service at a regional level and plays an important role in Canterbury's waste-management network. The Project will also enable the continued efficient functioning of existing regionally significant infrastructure, including Kate Valley Regional Landfill, by providing an alternative destination for appropriate Class 3 material and preserving finite Class 1 disposal capacity for wastes that require that level of containment.

Kate Valley Regional Landfill is existing regionally significant infrastructure within Canterbury's waste-management network. It serves multiple Canterbury districts, provides the region's principal Class 1 disposal facility, represents substantial investment in strategic waste-management infrastructure and performs an essential disposal function for the region. The Project and Kate Valley Regional Landfill perform complementary roles within Canterbury's waste-management system. By providing Class 3 managed fill capacity for suitable lower-risk materials, the Project will reduce demand on Kate Valley's finite Class 1 disposal capacity and preserve that capacity for wastes requiring specialised containment. In doing so, the Project will enable the continued efficient functioning of existing regionally significant infrastructure for the purposes of section 22(2)(a)(ii).

The Project performs a regional function by supporting housing and urban development, infrastructure delivery, contaminated land remediation and wider development activities across Greater Christchurch

[1] Waste disposal infrastructure is not specifically listed within the Canterbury Regional Policy Statement (CRPS) definition of regionally significant infrastructure

and Canterbury. It will provide an additional disposal option for contaminated soils, C&D materials and other material that can appropriately be managed at a Class 3 facility. This improves the efficiency and resilience of the regional waste management network by directing material to facilities appropriate to its risk and containment requirements and preserving higher-class disposal capacity for waste that requires it.

Importantly, the demand for Whiterock's services is itself substantially generated by housing and infrastructure development, including the maintenance, renewal and upgrading of existing infrastructure. The Project therefore supports the delivery of that development and infrastructure by providing an efficient and appropriate means of disposing of the materials those activities generate.

The regional significance of the Project is demonstrated by the role it will play within Canterbury's wider waste management and infrastructure network. It will:

- **Provide essential additional disposal capacity** supporting housing construction and urban development, infrastructure maintenance and delivery and environmental (contaminated land) remediation and other development across Greater Christchurch and wider Canterbury.
- **Improve waste management efficiency** by directing materials to facilities appropriate to their risk and containment requirements, consistent with the Waste MINZ disposal to land framework.
- **Preserve finite Class 1 and Class 2 landfill capacity** for waste that requires this higher level of containment and control.
- **Improve regional resilience** by providing additional disposal capacity and greater choice within the Canterbury waste management network, including at a lower cost to the market cart and disposal for material generated in and around urban Christchurch.
- **Make productive use of an existing quarry void**, providing new disposal capacity within an already disturbed site while enabling progressive rehabilitation.
- Provide **ongoing support to the primary sector** across Mid and North Canterbury through provision of Ag Lime and track rock.

The Project also has an important enabling role in relation to the continued functioning of existing strategic waste management infrastructure within Canterbury. It supports the ongoing operation of Kate Valley Regional Landfill, Canterbury's principal Class 1 landfill, which serves a population of approximately 628,350[2] residents across Christchurch City and the Selwyn, Waimakariri, Hurunui and Ashburton districts. Given its regional service area, specialised Class 1 disposal function and investment in engineered waste-management infrastructure, Kate Valley performs a regionally significant role within Canterbury's waste management system.

By providing a dedicated Class 3 disposal pathway for suitable contaminated soils and C&D materials, Whiterock will reduce unnecessary use of higher-class facilities, including Kate Valley Regional Landfill, for material that does not require that level of containment. This will preserve finite Class 1 and Class 2 capacity for waste streams requiring the specialised containment and environmental controls those facilities provide, supporting their efficient use and continued functioning. In the case of Kate Valley Regional Landfill, this benefit extends across the five council areas it serves. Whiterock therefore does more than provide additional disposal choice: it enables existing regionally significant waste infrastructure to be used for its intended purpose, preserves a finite strategic resource and reduces pressure to provide additional or replacement higher-class capacity.

The role of Kate Valley Regional Landfill as a regional asset, and the extent to which Whiterock will contribute to preserving its capacity and supporting its continued functioning, are addressed further in section 2 below.

[2] https://tools.summaries.stats.govt.nz/

Overall, Whiterock delivers infrastructure of regional significance through the scale of capacity provided, its geographic service area, its role in supporting development and infrastructure delivery, and its contribution to a more efficient and resilient regional waste-management network. These benefits arise both from the new infrastructure provided by the Project and from its role in preserving and supporting the efficient use of existing higher-class waste infrastructure.

2. Enabling the continuing functioning of existing regionally significant infrastructure

2.1 Kate Valley – An existing strategic regionally significant asset

Kate Valley is Canterbury's principal Class 1 landfill, serving Christchurch City and the Selwyn, Waimakariri, Hurunui and Ashburton districts. Owned through Transwaste Canterbury by those five councils and Waste Management New Zealand, it received 346,287 tonnes of waste in 2024/25.

Kate Valley represents substantial investment in specialised waste-management infrastructure, incorporating engineered containment, leachate treatment, landfill-gas capture and long-term environmental monitoring and long term aftercare.

Its total reported capacity is approximately 12 million tonnes, with the six-millionth tonne received in September 2024. Its current resource consents expire in 2039, with continued operation beyond that date dependent on further approvals.

The original consenting process took approximately a decade, commencing in the early 1990's and attracted more than 3,700 submissions before proceeding to the Environment Court. This illustrates the time, complexity and uncertainty associated with establishing major Class 1 landfill infrastructure.

Kate Valley is regionally significant because of its essential disposal function, multi district service area, scale and substantial infrastructure investment it represents and importance to Canterbury's waste-management system. Its finite Class 1 capacity is therefore a strategic regional resource that should, where practicable, be preserved for waste requiring its specialised containment and environmental controls that Kate Valley provides.

2.2 Whiterock's contribution to Kate Valley's continued functioning

Kate Valley receives material suitable for lower class disposal facilities, including contaminated soils. Reported volumes have varied over the past five years ranging between 22,000 tonnes and 50,000 tonnes[3]. This variance is caused by cartage to other less optimal sites such as Taiko. In addition, Sapere's stakeholder engagement identified that Kate Valley is regularly used for contaminated-soil disposal, including material that may be suitable for disposal at a Class 3 facility where capacity is available.

Environment Canterbury have a current focus on clean fill compliance, so this volume is estimated to increase as the wider industry matures and more robust testing and classification systems are established.

Whiterock will provide an alternative disposal pathway for the proportion of this material that meets Class 3 waste acceptance criteria. By diverting suitable Class 3 waste from Kate Valley, Whiterock will preserve Class 1 landfill airspace for material requiring higher containment standards. The benefit is broader than providing an additional disposal option.

Whiterock and Kate Valley will perform complementary roles within Canterbury's waste-management system. Kate Valley will remain the region's principal Class 1 disposal facility, while

[3] https://ccc.govt.nz/assets/Documents/The-Council/How-the-Council-works/Council-controlled-organisations/2025/Transwaste-Canterbury-Ltd-Annual-Report-2025.PDF

Whiterock will provide additional capacity for material appropriately managed at Class 3. Keeping that material out of Kate Valley's airspace preserves specialised Class 1 capacity for waste that requires it, supports Kate Valley's continued function, and improves the allocation of waste across the regional network. The result is more efficient use of existing infrastructure and greater capacity and resilience across the overall system.

3. Benefits – Scale, assumptions and methodology

3.1 Preservation and efficient use of Kate Valley capacity

The supplementary Sapere assessment considers the effect of Whiterock on the utilisation and remaining capacity of Kate Valley Regional Landfill.

Whiterock will provide approximately 800,000 tonnes of Class 3 disposal capacity over its anticipated 20-year period, equivalent to an average of approximately 40,000 tonnes per year if capacity is utilised evenly.

Sapere's assessment identifies that the infrastructure benefit arises from directing material to a facility appropriate to its waste classification. Sending suitable Class 3 material to higher-class facilities imposes avoidable costs, while inducing longer cartage distances add fuel and transport costs. With increasing attention to clean fill compliance, there is good reason to preserve Kate Valley's capacity for waste requiring higher level containment.

Detailed information on Kate Valley's remaining airspace, waste acceptance profile, annual filling rates and long-term operational planning is not publicly available. The supplementary Sapere assessment has therefore focused on the effect Whiterock will have on the utilisation and preservation of finite Class 1 capacity.

This does not change the nature of the benefit. To the extent that material suitable for Class 3 disposal is directed to Whiterock rather than Kate Valley, a corresponding volume of Class 1 capacity will remain available. Sapere concludes that Whiterock can therefore reasonably be expected to:

- Preserve some quantity of Class 1 landfill airspace within Canterbury
- Reduce the rate at which finite Class 1 landfill capacity is consumed
- Reserve higher-specification disposal infrastructure for wastes requiring Class 1 containment
- Improve the allocation of waste streams across the regional disposal network
- Increase the resilience and flexibility of Canterbury's long-term waste management system.

The value of Whiterock is therefore not dependent on demonstrating a particular number of years of operation at Kate Valley. The benefit arises from the preservation and more efficient use of finite Class 1 capacity. Keeping suitable Class 3 material out of Kate Valley's airspace means that specialised capacity remains available for the waste streams that require it and reduces pressure on the regional system to provide additional or replacement Class 1 capacity.

Methodology and assumptions

The assessment adopts a qualitative infrastructure and network approach, informed by the supplementary Sapere assessment. It considers how providing additional Class 3 capacity would affect the use of existing higher-class disposal infrastructure, rather than attempting to forecast a specific extension to Kate Valley Regional Landfill's operating life.

The assessment assumes that a proportion of material received at Whiterock would otherwise be disposed of at Kate Valley Regional Landfill or another higher-class facility. The precise proportion cannot be determined from publicly available information and has therefore not been assumed or modelled. Instead, the assessment relies on the direct relationship that, to the extent

suitable Class 3 material is kept out of Kate Valley Regional Landfill's airspace, that Class 1 capacity remains available for waste requiring that level of containment.

On that basis, no specific estimate is made of the number of years by which Whiterock may extend Kate Valley Regional Landfill's operating life. The regional benefit is therefore assessed in terms of preserving finite Class 1 capacity, improving the allocation of waste across the regional disposal network and reducing pressure on specialised higher-class infrastructure.

3.2 Economic value of preserved Class 1 capacity

Preserving Class 1 airspace also has an economic value because additional capacity requires substantial capital investment.

Transwaste's 2025 audited accounts indicate landfill development and closure costs of approximately $19 per m^3 at reported average density. This largely reflects the very high development costs but is considerably lower than current Class 1 landfill costs due to the 20-year operation of the site.

By comparison, Dunedin City Council's proposed Smooth Hill Class 1 landfill has a reported initial development budget of approximately $80–$92.4 million for 2.94 million m^3, equivalent to approximately $27–$31 per m^3.

These figures provide an indication of the infrastructure value associated with preserving Class 1 capacity. They should not be treated as direct financial savings, as the value depends on the volume and timing of actual diversion, future capacity requirements and investment decisions. They also do not capture the costs, time and uncertainty associated with consenting replacement infrastructure. The figures show that Class 1 airspace is an increasingly costly commodity, of which replacement is uncertain in terms of cost and time.

The relevant benefit is not just about the monetary value of the airspace preserved. Preserving existing Class 1 capacity makes more efficient use of an established regional infrastructure asset and reduces pressure to provide additional or replacement Class 1 capacity.

4. Benefits to other higher class facilities

The same principle applies to Canterbury's Class 2 disposal facilities, including Taiko landfill near Timaru, which is consented until 2053. Contaminated soils from Greater Christchurch are currently transported to Taiko, despite the availability of potentially shorter disposal routes through Whiterock.

For example, waste movements associated with the recent development of Burnham Military Camp involved an estimated 280 km round trip to Taiko, compared with approximately 150 km to Whiterock.

Whiterock would also preserve Taiko's Class 2 capacity for material requiring that level of management while reducing unnecessary freight movements.

Sapere's independent economic assessment identifies transport and system-efficiency benefits relative to Taiko with a present value of $35.1 million over 20 years under an unconstrained operating scenario and $3.6 million under the consent-constrained scenario. These benefits reflect reduced transport time, emissions and heavy-vehicle safety risks.

Whiterock would also improve regional resilience by reducing reliance on long-distance disposal routes between Greater Christchurch and South Canterbury, including routes vulnerable to disruption from flooding and severe weather. Overall, the Project will support the continued efficient functioning of existing Class 2 infrastructure while improving the resilience and performance of the wider regional disposal network.

5. Strategic importance of preserving higher class landfill capacity

The importance of preserving existing landfill capacity extends beyond the immediate volume of airspace retained. Higher-class landfill capacity represents substantial investment in specialised infrastructure and is not readily replaced.

Establishing or expanding Class 1 infrastructure requires substantial capital investment, technical investigations, engineered environmental controls, regulatory approvals and long-term monitoring and aftercare. The experience of other regional landfill projects demonstrates these challenges.

The proposed Auckland Regional Landfill at Dome Valley, for which applications were lodged in 2019, has involved extensive consenting and court proceedings (currently at the Court of Appeal) still to be determined. This has resulted in the need to extend the operational life of Redvale Landfill under the Fast-track Approvals Act, reflecting the strategic importance of maintaining existing regional disposal capacity while replacement infrastructure remains uncertain.

The New Zealand Infrastructure Commission's National Infrastructure Plan also identifies funding and affordability pressures affecting future waste-infrastructure investment.

These examples reinforce the strategic value of using existing specialised landfill capacity efficiently and deferring, where practicable, the need for additional higher-cost infrastructure. By providing an alternative disposal pathway for suitable Class 3 material, Whiterock will preserve higher-class landfill capacity and reduce pressure to provide additional or replacement infrastructure creating resilience for existing regionally significant infrastructure.

Preserving Class 1 and Class 2 capacity is therefore a regional infrastructure benefit in its own right, particularly where replacement capacity is costly, complex and uncertain to deliver.

6. Geographic extent and duration of benefits

The Project’s benefits will extend across Greater Christchurch and the wider Canterbury region, particularly Christchurch City, Waimakariri and Selwyn districts. The benefits also extend through the regional disposal network by enabling (i.e. preserving) higher-class disposal capacity for waste that requires specialised containment and environmental controls those facilities provide. This supports the “right waste, right place” approach and enables existing Class 1 and Class 2 infrastructure to be used for the waste streams it was designed to manage. The benefits associated with the scale and duration are set out in the table below.

Benefit	**Scale**	**Duration**
New Class 3 infrastructure	800,000 tonnes of additional capacity serving Greater Christchurch and wider Canterbury.	Approximately 20 years
Class 1 capacity preservation	Regional benefit through preservation of finite Class 1 capacity, including at Kate Valley, for waste requiring that level of containment. The scale depends on the actual volume of suitable Class 3 material diverted from higher-class facilities and cannot be robustly quantified from publicly available information.	Progressive over 20 years (the life of the Project), with preserved capacity remaining available for Class 1 waste
Class 2 capacity preservation	Regional benefit through reduced use of Class 2 facilities, including Taiko, for suitable Class 3 material.	Progressive over 20 years (the life of the Project)

Transport and system efficiencies	Quantified benefits relative to more distant disposal alternatives, including up to $35.1m present value relative to Taiko under the unconstrained scenario and $3.6 million under the consent-constrained scenario.	Assessed over 20 years
Regional infrastructure resilience	Additional Class 3 capacity and greater disposal choice and reduced dependence on higher class and more distant facilities across the regional network.	Throughout the operational life of the Project
Deferred higher-class infrastructure investment	Preserving existing Class 1 and 2 capacity reduces pressure to consent and establish additional or replacement higher-class disposal infrastructure.	Enduring over life of the Project

The benefits are regional rather than site-specific because they improve the functioning of interconnected waste-management, transport, construction and infrastructure systems serving Canterbury. In particular, the preservation of Class 1 and Class 2 capacity benefits the wider network by retaining specialised disposal capacity for waste streams that require it.

Conclusion

The quantified economic benefits are a substantial part of the benefits case but are not its sole basis.

The Project's regional significance arises from the combined infrastructure, economic, environmental and development-enabling benefits Whiterock will provide the Canterbury region. The Project will add substantial new Class 3 capacity, support development and infrastructure delivery, preserve finite higher-class landfill capacity and enable existing regionally significant infrastructure to be used more efficiently.

The benefits are regional in their scale and reach. They extend across Greater Christchurch and Canterbury and will be realised over the approximately 20-year operational life of the Project, with some benefits, particularly preserved higher-class capacity and deferred infrastructure investment, extending beyond that period.

Attachment 1: Sapere Assessment

Economic benefits of the Whiterock Class 3 Managed Fill

Additional information and supporting evidence

Toby Stevenson, Dr Jamie O'Hare, Douglas Yee

October 2026



Purpose and background

This note is an addendum to **Whiterock Class 3 Managed Fill, A review of economic benefits** dated April 2026. It provides additional explanation of the economic benefits associated with the proposed Whiterock Class 3 Managed Fill facility and clarifies the methods used in estimating those benefits. It also further explains Whiterock's role in supporting infrastructure, namely Kate Valley Landfill, in Canterbury's waste management system.

Benefits of relieving existing disposal constraints:

Our April 2026 economic assessment identified evidence that existing disposal options are subject to operational, spatial, acceptance-criteria and cost constraints. These constraints can increase disposal costs, haulage distances, or require additional sorting and handling of material. They may also increase the risk of material being disposed of through inappropriate channels, including at facilities not intended to receive the waste.

Additional Class 3 capacity may affect costs and resource use through several channels:

- **Reduced disposal and transport costs:** Whiterock has a greater proximity to Canterbury's key growth areas compared to some existing disposal alternatives. The availability of Whiterock can, therefore reduce haulage distances, vehicle operating costs, travel time, fuel consumption and carbon emissions. The economic assessment estimated transport-related efficiency gains arising from a reduction in vehicle kilometres travelled and associated external costs.
- **Efficient use of landfill infrastructure:** The availability of additional Class 3 capacity allows waste to be directed to infrastructure designed for its characteristics, rather than consuming scarce Class 1 landfill capacity. The research for our economic assessment indicated that the Kate Valley Landfill is regularly used to dispose of waste more appropriately directed to a Class 3 facility.
- **Helping to enable development:** Construction, housing, infrastructure, and remediation projects may require access to suitable disposal facilities. By providing additional Class 3 disposal capacity, Whiterock would add to the disposal infrastructure available within the region.

Assessment of economic benefits

Our assessment of economic benefits included an estimation of economic impacts. A regional input–output (I/O) modelling approach was used to estimate GDP and full-time equivalent FTE impacts of the project.

- I/O tables describe how different industries within an economy purchase from and sell to one another. By applying this framework, it is possible to estimate how expenditure in one industry flows through to other industries, generating wider economic effects.

- The impacts estimated are measures of economic activity supported by the project rather than indicators of improved productivity or net welfare and are distinct from efficiency effects we also estimated

We estimate two types of impact through the I/O methodology: Type I and Type II:

- Type I impacts capture the direct and indirect effects of a project. Direct effects refer to the economic activity generated by the project itself, such as employment and output within the project delivery. Indirect effects arise from the project's supply chain, for example when the project purchases goods and services from other industries, which in turn generate further economic activity.
- Type II impacts extend the analysis by including induced effects. Induced effects reflect the additional economic activity associated with spending by employees supported through the direct and indirect effects. Type II estimates therefore include a broader range of effects than Type I estimates, while Type I estimates are limited to production and supply-chain linkages.

We estimated the following economic impacts over 20-year period:

	FTE	GDP
Type I	6.7	$1.39 million
Type II	8.7	$1.76 million

Limitations of this analysis

I/O analysis relies on simplifying assumptions, including:

- The method assumes labour, materials, and other inputs are available to meet extra demand without pushing prices up. If resources are already fully utilised, some of the estimated activity may simply be drawn away from elsewhere in the economy.
- I/O tables assume each industry buys its inputs in fixed proportions, based on the economy's structure when the tables were compiled. They don't allow for businesses switching inputs, new technology, or changes in the economy's structure over time.
- The model doesn't capture how prices, wages or exchange rates might respond to a project.
- These assumptions mean I/O results, especially Type II results that include household spending, are generally treated as an upper-end estimate of economic activity rather than a precise forecast.

Nevertheless, these limitations do not undermine the estimates produced. I/O remain a widely used and accepted tool of estimating economic impacts.

Assessment of economic efficiencies

Our efficiency assessment examined whether the proposed facility would allow waste to be managed more efficiently than under alternative scenarios.

Rather than focusing only on expenditure generated by project, the assessment considered whether resources across Canterbury could be used more efficiently because of:

- reduced haulage distances;
- reduced travel time;
- lower vehicle operating costs;
- lower emissions; and
- reduced crash risks and road externality costs.

Our analysis compared the economic cost of disposal of Class 3 materials at Whiterock against other disposal sites in the region. We estimated the following efficiency gains over a 20-year period:

Scenario	Benefit	vs. Taiko Road	vs. Kate Valley
Base case (no consent constraint)	Value of time	$23,429,348	$1,665,204
	Avoided emissions	$4,534,628	$492,216
	Avoided injuries	$7,148,778	$783,380
	Total	**$35,112,753**	**$2,940,800**
Consent-constrained (2,976 trips per year)	Value of time	$1,992,165	$215,473
	Avoided emissions	$606,096	$64,133
	Avoided injuries	$960,075	$101,375
	Total	**$3,558,336**	**$380,981**

Key assumptions and evidence sources

The efficiency gains estimated were informed from the following assumptions and parameters:

Assumptions and parameters	Value	Source	Confidence
Contaminated soil per m^2 of development	$0.2m^3$	Conservative estimate from industry consultation	Medium – based on practitioner experience rather than a measured dataset. Reasonable and intentionally conservative, but actual contamination volumes may vary considerably between sites.
Density of soil	1.6 tonnes per m^3	Hill Labs (n.d.)	High – based on established engineering values. Actual densities vary by soil type but are generally within a narrow range.

Payload per truck movement	32 tonnes	Conservative estimate from industry consultation	Medium – reflects industry practice and vehicle capacity but may vary depending on vehicle type, loading restrictions, route characteristics and operator practices.
Development locations	5,800 developments completed in 2025 across the Canterbury region	CoreLogic	High – based on observed development activity rather than forecast activity.
Travel times and distances	Estimate using OSRM drivetimes from development locations to fill sites	Estimated	High – derived from actual road network modelling and observed site locations. Some differences from real-world travel conditions may occur, but these are unlikely to materially affect the results at a regional scale.
Value of time	$37.92 per hour per person	NZTA (2025)	High – official transport appraisal parameter used nationally.
Emissions-factor (emissions from a heavy vehicle)	1.51 kg CO_2e	Ministry for the Environment (2023)	High – based on established emissions guidance.
Shadow price of carbon	$0.10 (2025) - $0.16 (2045)	NZ Treasury (2025)	High – official government guidance used for policy and investment appraisal.
Population growth (development growth proxy)	Average of 1.04% p.a. in 2025 to 0.41% p.a. in 2045 (varies by area)	Stats NZ	High – official demographic projections., These are the standard projections used for long-term planning.
Crash rates	1 fatal crash in 250 million kilometres driven 1 non-fatal crash in 2.1 million kilometres driven	NZTA Waka Kotahi (2026) and NZ Transport Agency Waka Kotahi (2026b)	Medium – avoided injury costs represent an "expected cost" in that they are adjusted for probability; crashes will either occur or not occur, so actual costs in the counterfactual will be at either extreme. However, because we estimate these gains over a long period of time (20 years), we can expect the actual cost to more closely align with expected costs.
Social cost of crashes	$19.5 million per fatal crash $393,700 per non-fatal crash	Ministry of Transport (2026)	Medium – based on observed data, but actual cost will likely vary significantly in practice based on number of occupants in a vehicle affected, damage caused, etc.

Contribution of the continued function of Kate Valley and other regionally significant infrastructure

New Zealand's waste disposal framework directs waste to facilities with containment standards appropriate to its risk profile. The WasteMINZ Technical Guidelines for Disposal to Land[1] establish a hierarchy of disposal facilities, ranging from Class 1 landfills with the highest containment standards to Class 3 managed fills intended for lower-risk contaminated soils and earthworks materials.

Directing waste to appropriately consented facilities avoids the costs of higher containment standards where they are not required. Providing additional Class 3 capacity therefore supports efficient resource allocation and aligns with the framework's principle of matching waste types to appropriate disposal facilities.

Preserving strategic Class 1 capacity

Class 1 landfill capacity represents a scarce and difficult-to-replace regional resource due to the significant engineering, consenting and environmental requirements associated with establishing new facilities.

Stakeholder engagement undertaken for our economic assessment indicated that Kate Valley Landfill is regularly used for contaminated soil disposal, including material that may be suitable for a Class 3 facility where capacity is available.

Detailed information regarding Kate Valley's remaining airspace, waste acceptance profile, annual filling rates, and long-term operational planning is not publicly available. Accordingly, it is not possible to robustly quantify:

- the volume of Class 3 material currently being disposed of at Kate Valley;
- the proportion that may instead be directed to Whiterock;
- the resulting reduction in Class 1 airspace consumption; or
- the extent to which this may extend the operational life of the landfill.

The scale of any effect therefore cannot be meaningfully quantified from the available information. However, to the extent that material suitable for disposal at a Class 3 managed fill is directed to Whiterock rather than Kate Valley, a corresponding volume of Class 1 landfill capacity would remain available.

Accordingly, the Whiterock proposal can reasonably be expected to:

- preserve some quantity of Class 1 landfill airspace within Canterbury;

[1] https://transwastecanterbury.co.nz/wp-content/uploads/2020/02/Kate-Valley-Landfill.pdf

- reduce the rate at which finite Class 1 landfill capacity is consumed;
- reserve higher-specification disposal infrastructure for wastes requiring Class 1 containment;
- improve the allocation of waste streams across the regional disposal network; and
- increase the resilience and flexibility of Canterbury's long-term waste management system.

Supporting a regionally significant infrastructure asset

The relevant analytical question is whether Whiterock would affect the utilisation and remaining capacity of Kate Valley, rather than whether it would extend Kate Valley's operating life by a specific number of years.

Kate Valley serves as Canterbury's principal Class 1 landfill and was developed as a long-term regional waste management solution. Publicly available information indicates that the facility was designed with a capacity of approximately 9 to 12.5 million tonnes and that approximately 6 million tonnes of waste had been deposited by 2024. Public sources also indicate that the landfill was developed to operate over a period of approximately 35 years and is expected to remain operational into the late 2030s or around 2040[2].

Kate Valley involved substantial investment in regional waste infrastructure. Publicly available information indicates that construction required the movement of more than 1.5 million cubic metres of soil and rock, together with landfill engineering, containment, leachate management, stormwater, gas collection and environmental monitoring systems.

The facility also operates within a highly regulated environment. The original development was supported by extensive environmental assessments, hydrological investigations, geological studies, traffic assessments, cultural impact assessments, economic evaluations, and multiple consenting processes.

These matters are relevant because Class 1 landfill capacity may be costly and time-consuming to replace. Establishing new Class 1 disposal infrastructure typically requires suitable geology, engineering investment, environmental assessment, stakeholder engagement, consultation, and consenting. Kate Valley provides an example of the requirements associated with establishing this type of infrastructure.

On this basis, retaining available Class 1 airspace may have value even where an extension in operational life cannot be quantified. A lower rate of Class 1 capacity use would increase the amount of capacity available for future waste requiring Class 1 containment and could defer the timing of investment in replacement capacity.

[2] https://www.boffamiskell.co.nz/projects/kate-valley-landfill-resource-consent

Regional network effects

Whiterock and Kate Valley could perform complementary roles within Canterbury's waste management system rather than compete directly for waste volumes, although we acknowledge some competition would naturally occur. Kate Valley would remain the region's principal Class 1 disposal facility, while Whiterock would provide additional capacity for waste suitable for Class 3 disposal.

This would improve the alignment of waste streams with appropriate disposal facilities, reduce reliance on Class 1 capacity for waste that can be managed elsewhere, and support more efficient use of the region's disposal infrastructure. The proposal would also increase network capacity and resilience by diversifying available disposal options.

In the absence of Whiterock, eligible material would likely continue to be transported to more distant facilities, including higher-specification disposal infrastructure. This would result in higher transport costs, increased vehicle kilometres travelled, greater emissions, and continued consumption of finite Class 1 landfill capacity.

The regional effects of the proposal would arise from both the operation of the managed fill and any changes it produces in the wider waste management network. These may include additional disposal capacity, changes in the allocation of waste streams, retention of Class 1 capacity, and effects on development and infrastructure projects that require access to suitable disposal facilities.

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