Attachment 9

Persons Affected, Treaty Settlements and Consultation (and Engagement) Record

Persons Affected, Treaty Settlements and Consultation (and Engagement) Record

1. Persons Affected

The following is a list of the persons, groups and/or entities who are likely to be affected by the Project. *(as set out at section 13(4)(j)(ii)-(viii) of the Fast-track Approvals Act 2024)*

- Environment Canterbury Regional Council (CRC) - Regional authority
- Waimakariri District Council (WDC) - Local Authority
- Te Rūnanga o Ngāi Tahu (Ngāi Tahu) - iwi for South Island
- Ngāi Tūāhuriri Rūnanga (Ngāi Tūāhuriri) - a principal hapū of Ngāi Tahu for the takiwā
- Ministry for the Environment (MfE)
- Owners (and occupiers if any) of adjacent land

2. Treaty Settlements

The Ngāi Tahu Claims Settlement Act 1998 applies to the majority of the South Island, including the entire Canterbury Region. The relevant principles and provisions in that settlement include:

(a) The Crown recognises Ngāi Tahu as the tāngata whenua of, and as holding rangatiratanga within, the takiwā of Ngāi Tahu Whānui;
(b) The settlement provides for statutory acknowledgements and nohoanga entitlements.

There are no statutory acknowledgment areas or treaty settlement areas in the vicinity of the Project area.

3. Consultation (and Engagement) Record

Table 1 below provides a record of the consultation with statutory and affected parties for the Project. Also included in the table is a summary of the community engagement undertaken. Two phases of consultation are recorded initially under a Council RMA process and more recently with respect to the Fast-Track Approvals process.

Note: The Red bold parties are those groups and/or entities <u>that must be</u> notified in writing for a referral application as set out at section 11(1)(b) of the Fast-track Approvals Act 2024 (FTAA))

Table 1. Whiterock Quarry and Managed Fill - Consultation and Community Engagement Record

Party	Local authorities	Environment Canterbury Regional Council (CRC)
Council RMA Process - Applications lodged in April 2024	**Pre-application 2023**	13 July 2023: An in-person pre-application meeting was held at CRC offices in Christchurch. Attended by CRC Principal Consent Planners and various CRC Scientists. This was a Focused Pre-Application Meeting – on the detail for the Groundwater and Surface Water Assessments and a run through of the national and regional plan regulations and rules which had been assessed in detail. Also discussed was consultation and community engagement, and the public notification threshold.
	Before public notification 2024	15 May 2024: General meeting with CRC Senior Consent Planner on items requiring clarification and timeframes. 22 May 2024: Meeting with CRC Senior Consent Planner and Principal Contaminated Sites Advisor to explain the Waste Acceptance Criteria (WAC) rationale. 20 June 2024: CRC Request For Information (RFI) received. Responded to 23 August 2024.
	Post public notification 2025	25 March 2025: CRC s42A report (and supplementary expert review reports) for the hearing were circulated to the Applicant and submitters. The s42A and expert review reports provided a significant level of feedback to the Applicant with respect to the current Proposal.
FTAA Referral Application 2025	**Late April early May 2025**	30 April 2025: A letter by WSP was sent to the CRC Principal Consents Planner for the Council processing informing of the intention to lodge a FTAA referral application and requesting feedback. 5 May 2025: An in-person meeting was held at CRC with the original Consent Planner and another CRC Principal Consents Planner, and a CRC Project Management Officer. WSP and two representatives of the Applicant attended. In addition to general FTAA referral processes, the following items were discussed: ▪ Confirmation the FTAA approvals sought for the Project will be similar to the proposal sought under the Council RMA applications ▪ Consenting triggers and planning documents ▪ Confirmed that no RMA enforcement action has been taken against the Applicant ▪ Update on iwi consultation ▪ No infrastructure constraints on CRC ▪ Timing of referral application
	How Consultation informed the Project - as at 20 May 2025	In response to the CRC RFI: minor additional detail and layouts for the landfill design were added to address technical comments; and the WAC was amended to prohibit gypsum products such as plasters, drywall (wallboard or plasterboard), ceiling tiles, partitions, and building blocks. Gypsum was neither acceptable nor prohibited in the original WAC (i.e. silent). Wetland extent and water level monitoring were added to the monitoring programme. Updates and improvements to the draft Site Management Plan and proposed conditions was undertaken. It was outlined at the FTAA meeting that the Project was not materially changing for the FTAA applications. However, aspects identified in the s42A reports for improving the Project (mitigation etc.) were being considered and would be incorporated if practicable. There were some useful insights provided by CRC for the Applicant to include in the application as to reduce the risks of the application not being considered complete.
	Comments on 2025 referral application	CRC responded to the formal invitation to provide written comments on the referral application. In summary their comments were: *The Whiterock fast-track proposal is essentially the same as suspended RMA applications, with the applicant claiming significant strategic, economic, social, and environmental benefits. The concerns raised by the CRC regarding effects are relevant to the application from Whiterock, being:* ▪ *Significant residual environmental risks.*

		▪ *While the landfill design resembles Class 1 standards, uncertainties remain around long-term containment, leachate management, stormwater controls, and ecological impacts.* ▪ *Persistent contaminants could pose enduring risks to groundwater, surface water, and wetlands, particularly once engineered mitigation fails.* ▪ *The proposal may also create long-term public liabilities, with inadequate certainty about post-closure management.* ▪ *Ngāi Tūāhuriri Rūnanga has expressed opposition to the proposal.* ▪ *Social and economic benefits, such as reduced disposal costs and housing affordability, lack robust evidence.* ▪ *The Canterbury Regional Policy Statement (CRPS) emphasises waste minimisation, reuse, and integrated management, discouraging proliferation of new local landfills. The Whiterock proposal is inconsistent with this direction and may undermine regional and national initiatives on soil reuse and waste reduction.* *Overall, CRC considers the proposal does not demonstrate significant regional benefits sufficient to justify referral under the FTAA; specifically, that the environmental risks associated with the Whiterock proposal outweigh the proposed benefits put forward by the applicant. It is the position of the CRC that integrated regional planning and the existing capacity of the regions landfills already meet Canterbury's needs.*
FTAA Referral Application 2026	**Consultation as part of preparing 2026 referral application**	On 3 June 2026 the Applicant met with CRC staff to provide an update about the project including outlining the additional work undertaken in 2026: ▪ Project team worked to understand the information gaps that led to the earlier referral decision ▪ Key gaps identified where the application had not sufficiently evidenced regional significance, demand, economic and employment outcomes, the inadequacy of existing options, and the broader benefits beyond economics ▪ Looked at other decisions given the time that has elapsed and projects that had advanced through the FTAA process. Noted that the way economics works has been approached varies across projects – there are 2 North Island quarry projects that are applicable to Whiterock. The RMLA Insights piece written by Market Economics (released 30 April 2026) provides commentary on approaches/methods that have been used. ▪ Commissioned additional economic work undertaken by Sapere ▪ RMA application technical reports – been working in the background updating the reports to respond to s42A reports The Applicant also advised that a consultation package would be forthcoming along with notice under section 11 of the FTAA. On 8 June 2026 notice under s11 of the FTAA was provided and 20 working days given to respond. The information provided included: ▪ Economic benefits report by Sapere ▪ Supporting economic assessment and linkage to FTAA criteria commentary ▪ Section 22(1)(a) Significant regional or national benefits overview On 2 July the Applicant met jointly with CRC and WDC staff for them to provide their initial response to the information provided under the section 11 notification. On 3 July CRC provided their formal comments in response to the section 11 notice. The CRC response is attached. In summary, their response is that CRC accepts that managed fill capacity is a legitimate regional issue but considers the updated economic evidence insufficient to demonstrate the significant regional or national benefits required under the FTAA, while also noting that its earlier concerns about adverse effects remain unresolved due to a lack of updated information.
	How Consultation informed the Project - as at 15 July 2026	In late 2025, the Applicant commenced work on updating the RMA application technical reports to respond to the matters raised in the council s42A report. The Applicant and CRC have agreed to initiate expert caucusing to work through the matters raised in the s42A report. A response to the Meade report has been prepared by Sapere and is provided as Attachment 6b.

Party	Local authorities	Waimakariri District Council (WDC)
Council RMA Process - Applications lodged in April 2024	**Pre-application 2023**	3 August 2023: An in-person pre-application meeting was held at WDC offices in Rangiora with a WDC Principal Consent Panner. The meeting was a high-level discussion of the level of detail of assessment required. Consultation and community engagement, and public notification threshold were also discussed.
	Before public notification 2024	21 June 2024: WDC RFIs received. Responded to 23 August 2024.
	Post public notification 2025	25 March 2025: WDC s42A report (and supplementary expert review reports) for the hearing were circulated to the Applicant and submitters. The s42A and expert review reports provided a significant level of feedback to the Applicant with respect to the current proposal.
FTAA Referral Application 2025	**Late April early May 2025**	30 April 2025: A letter by WSP was sent (by email) to the WDC Senior Consents Planner for the Council processing the application informing of the intention to lodge a FTAA referral application and requesting feedback. 7th May 2025: An MS Teams meeting (online) was held with the WDC Senior Consents Planner, WSP person and two representatives of the Applicant. The following items were discussed: ▪ Confirmation the FTAA approvals sought for the Project will be similar to the proposal sought under the Council RMA applications ▪ Consenting triggers and planning documents ▪ Confirmed that no RMA enforcement action has been taken against the Applicant ▪ Update on iwi consultation ▪ No infrastructure constraints on CRC ▪ Infrastructure constraints on WDC were limited to roading infrastructure and entrance off Quarry Road ▪ Timing of FTAA referral application
	How Consultation informed the Project - as at 20 May 2025	In response to the WDC RFI more details were provided on the terrestrial ecology improvement purposes and their security long term. The FTAA meeting with WDC was mostly process focused and there were some useful insights for the Applicant to include in the application as to reduce the risks of the application not being considered complete. It was outlined that the Project was not materially changing for the FTAA applications, however aspects identified in the s42A reports for improving the Project (mitigation etc.) were being considered and would be incorporated if practicable.
	Comments on 2025 referral application	WDC responded to the formal invitation to provide written comments on the referral application. In summary their comments were: ▪ *Competing Application Already Lodged – The same application has been lodged and is being processed by Waimakariri District Council and Canterbury Regional Council. The application has been publicly notified, with 573 submissions, and is subject to hearing requests of 80 submitters. Allowing Whiterock to proceed via fast-track process would bypass the hearing process and undermine fairness and natural justice to the community who have submitted on the proposal.* ▪ *Not a Priority Project -The proposal is not identified in any central government or local government strategy, spatial plan, or infrastructure priority list, and therefore carries no recognised strategic weight.* ▪ *Lack of Regional or National Benefit – The project duplicates services already provided in North Canterbury and does not address any identified infrastructure gap. It would not deliver significant regional or national benefits.* ▪ *Alternative Facility Already Available – Existing infrastructure already provides secure regional capacity for residual waste disposal, making the Whiterock proposal unnecessary*

		▪ *Environmental and Ecological Risks – The project, under the current resource consent process, was deemed to have adverse effects on the environment, particularly concerning biodiversity and freshwater, due to its location and incomplete information provided. This was detailed in Waimakariri District Council (Annexure 1) and Canterbury Regional Council s42A Officer Reports.* ▪ *Cultural Opposition and Values – Based on advice received by the Council as part of the resource consent process, mana whenua (Ngāi Tūāhuriri) strongly oppose the project due to effects to cultural landscapes, mahinga kai, and kaitiakitanga.* ▪ *Inconsistency with District Plan Objectives – The current proposal for resource consent was identified as inconsistent with the Strategic Directions, natural environment, cultural, and ecosystems provisions of the District Plan.*
FTAA Referral Application 2026	**Consultation as part of preparing 2026 referral application**	On 3 June 2026 the Applicant met with WDC staff to provide an update about the project including outlining the additional work undertaken in 2026: ▪ Project team worked to understand the information gaps that led to the earlier referral decision ▪ Key gaps identified where the application had not sufficiently evidenced regional significance, demand, economic and employment outcomes, the inadequacy of existing options, and the broader benefits beyond economics ▪ Looked at other decisions given the time that has elapsed and projects that had advanced through the FTAA process. Noted that the way economics works has been approached varies across projects – there are 2 North Island quarry projects that are applicable to Whiterock. The RMLA Insights piece written by Market Economics (released 30 April 2026) provides commentary on approaches/methods that have been used. ▪ Commissioned additional economic work undertaken by Sapere ▪ RMA application technical reports – been working in the background updating the reports to respond to s42A reports The Applicant also advised that a consultation package would be forthcoming along with notice under section 11 of the FTAA. On 8 June 2026 notice under s11 of the FTAA was provided and 20 working days given to respond. The information provided included: ▪ Economic benefits report by Sapere ▪ Supporting economic assessment and linkage to FTAA criteria commentary ▪ Section 22(1)(a) Significant regional or national benefits overview On 2 July the Applicant met jointly with WDC and CRC staff for them to provide their initial response to the information provided under the section 11 notification. On 6 July WDC provided their formal comments in response to the section 11 notice. The WDC response is attached. In summary, their response is that Council continues to rely on and adopt the comments set out in the RMA application section 42A report; Council's original referral comments from 2025; and the peer review of the Sapere Economic Assessment.
	How Consultation informed the Project - as at 15 July 2026	In late 2025, the Applicant commenced work on updating the RMA application technical reports to respond to the matters raised in the council s42A report. The Applicant and WDC have agreed to initiate expert caucusing to work through the matters raised in the s42A report. A response to the Meade report has been prepared by Sapere and is provided as Attachment 6b.

Party	**Relevant iwi authorities**	**Te Rūnanga o Ngāi Tahu (Ngāi Tahu) - iwi for South Island**
Council RMA Process - Applications	**Pre-application 2023**	No consultation was undertaken with Ngāi Tahu. There are no statutory acknowledgment areas or treaty settlement areas in the vicinity of the Project area. It was expected that iwi engagement for the Project was more appropriate with the principal hapū.

lodged in April 2024	**Before public notification 2024**	It is not understood if the local authorities approached Ngāi Tahu directly.
	Post public notification 2025	Ngāi Tahu did not submit on the public notification of the applications.
FTAA Referral Application 2025	**Late April early May 2025**	1 May 2025: A letter by the Applicant was sent (by email) to Ngāi Tahu, noting they had not submitted on the Council applications, that the principal hapū had and were opposed. Details of what the Applicant had undertaken to address some of the hapū technical concerns were provided. The consultation advised of the intention to pursue a FTAA referral application. Feedback was requested on what, if anything, would differ in their position through the FTAA.
	How Consultation informed the Project - as at 20 May 2025	No response from Ngāi Tahu was received as at 20 May 2025. The Applicant sought assistance from a cultural advisor and has been made aware of ways they could have carried out a more meaningful and culturally sensitive engagement at the commencement of the Project. Moving forward, a process has been identified for the Applicant to follow, under a Cultural Engagement Plan. Starting with a review by the Applicant of the iwi management plan, and submissions documents, to identify the iwi's footprint, ancestors, values, and what's important to them. Followed by a cultural competency workshop with the cultural advisor. Other steps to follow are outlined to hopefully better enable future consultation and engagement with iwi and hapū.
	Comments on 2025 referral application	Ngāi Tahu did not respond to the formal invitation to provide written comments on the referral application.
FTAA Referral Application 2026	**Consultation as part of preparing 2026 referral application**	On 8 June 2026 notice under s11 of the FTAA was provided and 20 working days given to respond. The information provided included: ▪ Economic benefits report by Sapere ▪ Supporting economic assessment and linkage to FTAA criteria commentary ▪ Section 22(1)(a) Significant regional or national benefits overview No response was received.
	How Consultation informed the Project - as at 15 July 2026	Feedback has informed updates to technical assessments undertaken since the original resource consent applications were lodged. While differing views remain regarding the Project, the Applicant remains committed to ongoing engagement and to ensuring these matters are fully considered through the approvals process.

Party	**Relevant iwi authorities**	**Ngāi Tūāhuriri Rūnanga (Ngāi Tūāhuriri) - a principal hapū of Ngāi Tahu**
Council RMA Process - Applications lodged in April 2024	**Pre-application 2023**	14 February 2023: The Applicant sought via email to consult with Ngāi Tūāhuriri via their agent Mahaanui Kurataiao Ltd (Mahaanui) seeking the input of Mahaanui on the Project site's cultural value and asking what information they would require from the Applicant to provide the advice. 15 February 2023: The response by Mahaanui email was "Please work with the local Council to prepare your resource consent and they will send to Mahaanui at the appropriate time." 10 June 2023: The applicant contacted Mahaanui again via email in further seeking a proactive engagement process and provided a project introduction outlining details of the Managed Fill proposal. The purpose of the approach was to solicit feedback to incorporate within the project design and subsequent resource consent application. 13 June 2023: Mahaanui responded advising that their preference was to comment on the full proposal within the resource consent process via the regional authority after resource consent applications were lodged.
	Before public notification 2024	28 August 2024: Cultural advice on the proposal from Mahaanui that was sought by the local authorities was obtained by the Applicant. The advice was relayed

		by the Kaitiaki for Ngāi Tūāhuriri, who advised they are opposed to the application and consider themselves an affected party. 30 August 2024: The Applicant approached Mahaanui via email to discuss these concerns and sought advice on how to address concerns relating to cultural values into this development.
	Post public notification 2025	9 October 2024: Ngāi Tūāhuriri lodged a submission on the public notification of the application. This submission was opposed to the proposal and sought a decline, due to no current or foreseeable need for the landfill within North Canterbury. The location and repurposing of a limestone quarry was cited as being unsuitable, with the potential for significant long-lasting harm to cultural heritage and customary food gathering practices not having been avoided, remedied or mitigated. 4 March 2025: The Applicant sent a letter (via email) to Te Ngāi Tūāhuriri Chair to request a meeting to better understand the matters raised in their submission. No response was received prior to the next contact made by the Applicant
FTAA Referral Application 2025	**Late April early May 2025**	1 May 2025: The applicant sent a letter (via email) to Ngāi Tūāhuriri Chair. The letter acknowledged their opposition, and described what the applicant had undertaken and would be proposing to address some of the technical concerns raised. Further the consultation advised of the intention to pursue a FTAA referral application. Feedback was requested on what, if anything, would differ in their position through the FTAA. 2 May 2025: The Ngāi Tūāhuriri Chair responded via email, noting that the letter did not respond to the central issue their opposition was based upon, namely that Ngāi Tūāhuriri worked with all stakeholders in Canterbury to support a single landfill to end multiple sites such as the site proposed. They confirmed they did not wish to meet and will continue with their opposition.
	How Consultation informed the Project - as at 20 May 2025	The applicant has sought to address the technical issues raised by Ngāi Tūāhuriri. For example, a full macroinvertebrate and periphyton assessment of the Karetu River has now been undertaken, options to not use water treatment chemicals for sediment removal have been detailed. The direct discharge of underdrainage groundwater to the Karetu river has been removed as an option. Additionally, involvement of an aquatic ecologist during bridge construction works will be proffered to provide further mitigation of construction effects. A more detailed analysis of the need and benefits of the Project has been undertaken for this FTAA referral application. Refer above Ngāi Tahu row / this column for Applicant steps to follow to hopefully better enable future consultation and engagement with the iwi and the principal hapū Ngāi Tūāhuriri.
	Comments on 2025 referral application	Whitiroa Centre Limited commented on behalf of Ngāi Tūāhuriri that they oppose the application for the following reasons: ▪ *The application does not provide significant regional benefits, as there is sufficient capacity in the existing regional landfill* ▪ *The Karetu River is a significant cultural landscape and mahinga kai which would be adversely affected by the project* ▪ *The applicant did not engage with Ngāi Tūāhuriri during the site selection process* ▪ *The application poses risks of contaminants discharge, has an unacceptable impact on wetlands and rivers, and does not include sufficient information about these risks*
FTAA Referral Application 2026	**Consultation as part of preparing 2026 referral application**	On 8 June 2026 notice under s11 of the FTAA was provided and 20 working days given to respond. The information provided included: ▪ Economic benefits report by Sapere ▪ Supporting economic assessment and linkage to FTAA criteria commentary ▪ Section 22(1)(a) Significant regional or national benefits overview No response was received.
	How Consultation informed the	Feedback has informed updates to technical assessments undertaken since the original resource consent applications were lodged. While differing views remain regarding the Project, the Applicant remains committed to ongoing

	Project - as at 15 July 2026	engagement and to ensuring these matters are fully considered through the approvals process.

Party	**Relevant administering agencies**	**Ministry for the Environment (MfE)**
Council RMA Process - Applications lodged in April 2024	**Pre-application 2023**	None undertaken for Council process as not required or considered necessary
	Before public notification 2024	
	Post public notification 2025	
FTAA Referral Application 2025	**Late April early May 2025**	1 May 2025: An email was sent by WSP to the MfE. This email included a concise Project summary and attached development plans for the Project. 5 May 2025: A response from MfE was received via an email with an attached section 11 letter..
	How Consultation informed the Project - as at 20 May 2025	The MfE letter prompted the referral application to consider the National Policy Statement on Urban Development 2020 as relevant, as it had otherwise not been given assessment.
FTAA Referral Application 2026	**Consultation as part of preparing 2026 referral application**	Following the decision to decline referral, feedback was sought and provided: ▪ The overall narrative failed to establish that the project would be regionally significant, meaning that the broader benefits flowing from the project needed to be built out explicitly. ▪ General information about landfills was provided, but this was not tied back to the specific project or to developments and proposed works that would benefit from Whiterock's approval. ▪ The underlying rationale for reduced gate costs was unclear and required more rigorous substantiation. ▪ The application needed to demonstrate demand more clearly, specifically, who would use Whiterock and why existing options are inadequate. ▪ The fact that contaminated soil was being transported to South Canterbury and Greymouth due to cost and capacity pressures was not adequately explained and should have been. ▪ Employment figures should not be limited to the managed fill operation itself; indirect and induced employment should be quantified and evidenced. ▪ Benefits beyond economics, including environmental compliance, safety, and development enablement should be more explicitly articulated. Industry body support could usefully be obtained to corroborate the demand case. An informal meeting with MfE was held on 13 May 2026 to understand how a second referral application would be processed.
	How Consultation informed the Project - as at 21 July 2026	The feedback received and referral decision have been used to assist with the nature and type of information included in this referral application.

Party	Owners of adjacent land	Immediate neighbours to project site. 3 persons / properties
Council RMA Process - Applications lodged in April 2024	**Pre-application 2023**	As per Community Engagement below. 25 January 2024: A meeting was held with the immediate neighbour / farmer on the eastern boundary of the Project site. This meeting was requested and attended by the Applicant and WSP. This meeting took place at the respective landowner's home. More details of the managed fill Project were shared with the landowner and their questions were answered as far as practicable.
	Before public notification 2024	As per Community Engagement below. 25 January 2024: A meeting was held with the immediate neighbour / farmer on the eastern boundary of the Project site. This meeting was requested and attended by the Applicant and WSP. This meeting took place at the respective landowner's home. More details of the managed fill Project were shared with the landowner and their questions were answered as far as practicable.
	Post public notification 2025	October 2024: Close of submissions. All immediate neighbours lodged a submission to the public notification in opposition and seeking a decline to the managed fill proposal, most neighbours did not oppose the lime quarrying and processing continuing.
FTAA Referral Application 2025	**Late April early May 2025**	None undertaken.
	How Consultation informed the Project - as at 20 May 2025	Site wind data was analysed to respond to concerns about the site being in a high wind zone and the asbestos risk. There was a generally perceived lack of need for the Project (Managed Fill). A more detailed analysis of the need and benefits of the Project has been undertaken for this FTAA referral application.
	Comments on 2025 referral application	N/A
FTAA Referral Application 2026	**Consultation as part of preparing 2026 referral application**	No additional engagement is being undertaken.
	How Consultation informed the Project - as at 15 July 2026	No changes since the 2025 FTAA referral application.

Party	Community Engagement	This included all Quarry Road properties who were also likely users of groundwater that is connected to the Karetu River. Water is likely used for domestic drinking water and stock water supply.
Council RMA Process - Applications lodged in April 2024	**Pre-application 2023**	January and February 2024: Engagement with the local community was undertaken over this period. The purpose of the engagement was to provide upfront information to the community regarding the proposed Project and to obtain initial views and any potential apprehensions relating to the project from the community. The engagement approach included a letter and pamphlet drop to directly neighbouring properties to the proposal site and a further pamphlet drop to community along Quarry Road. Follow up phone queries were received from the community. A meeting at the proposal site was then facilitated with individuals and/or community who wished to raise concerns or discuss the project further.
	Before public notification 2024	No additional engagement was undertaken.
	Post public notification 2025	9 October 2024: Close of submissions. The applications received 573 submissions: 510 opposed, 6 neutral, 57 in support. 14 March 2025: Applicant sent a letter (via email) to the Tihiraki North Loburn School Board of Trustees to request a meeting to better understand the matters raised in their submission mainly about heavy vehicle movements impacts and children safety. No response has been received to date.

FTAA Referral Application 2025	**Late April early May 2025**	None undertaken.
	How Consultation informed the Project - as at 20 May 2025	An Engagement Report for pre-lodgment engagement was prepared and provided with the application. The majority of the feedback about the proposal from the local community has been unsupportive of the proposal with several prominent themes of concern and the details of these documented. The Applicant is now proposing to not have heavy vehicle trucks drive past the Tihiraki North Loburn school during drop off/pick up time. A common theme within the submissions involved the concern for the local and community intrinsic values held. There was a generally perceived lack of need for the Project (Managed Fill). A more detailed analysis of the need and benefits of the Project has been undertaken.
	Comments on 2025 referral application	N/A
FTAA Referral Application 2026	**Consultation as part of preparing 2026 referral application**	No additional engagement is being undertaken.
	How Consultation informed the Project - as at 15 July 2026	No changes since the 2025 FTAA referral application.

Attachments

CRC response to section 11 notification
Meade report
WDC response to section 11 notification

3 July 2026

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

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Kia ora Steph

Thank you for providing Canterbury Regional Council (CRC) notice under section 11(1)(b)(i) of the Fast-track Approvals Act (FTAA) on 8 June 2026. Section 11(1)(c) states that CRC have 20 working days in which to respond to this notice. Please consider this as CRC's response to that notification.

The following consultation documents were provided in addition to the formal notification;

- Notice under section 11(1)(b) of the Fast-track Approvals Act 2024 dated 8 June 2026
- Whiterock Quarry and Managed Fill – Consultation Material (undated)
- Whiterock Class 3 Managed Fill - A review of economic benefits prepared by Sapere Ltd dated April 2026.
- Combined letters of support document dated 30 January 2026
- Economic Assessment for Fast Track Approvals Act 2024 (undated)

The proposal was initially lodged as an application under the Resource Management Act 1991 (CRC reference: CRC243699 – CRC243243706) and subsequently as an application for referral under the Fast-Track Approvals Act 2024 (FTAA) (CRC reference: RMA261903).

On 27 November 2025 the Minister declined the referral application under sections 21(3)(a) and 21(3)(c) of the FTAA. The decision primarily rested on the assessment that the application contained insufficient detail or evidence around the project's economic and employment outcomes.

The Applicant has stated in the consultation documents that since December 2025, a range of additional technical, economic, and strategic work has been undertaken to better understand the basis for the earlier referral decision, including;

- Updated analysis by Sapere Ltd, including assessment of both direct economic activity additionality and system-level efficiency benefits.
- Further analysis of existing constraints within that network, including capacity, acceptance criteria, cost, haulage distance and operational limitations.
- Further development of the significant regional benefits assessment, including the Project's regional as enabling infrastructure for construction, housing, commercial development and public infrastructure delivery.

- Additional clarification of the environmental and waste management benefits, including its role in directing Class 3-suitable material to an appropriately designed facility and preserving higher-order landfill capacity.
- Further development of proposed consent conditions and operational controls.

The Applicant has stated that in all other respects, the proposal is materially the same as the initial application for referral under the FTAA (RMA261903).

The consultation documents relate only to the additional work undertaken by the Applicant since December 2025. However, CRC note that the consultation documents provided to CRC did not contain any proposed conditions or discussion on operational controls.

CRC's feedback is captured below.

PROJECT SUMMARY

As CRC understand it, Whiterock Lime Limited is proposing the development and operation of a dedicated Class 3 managed fill facility utilising the existing limestone quarry pit at Whiterock, Loburn approximately 20 km northwest of Rangiora, Canterbury.

The Class 3 managed fill facility (with a Class 1 liner design) would accept sorted inert construction and demolition waste, contaminated soils, and asbestos, but excludes any putrescible organic materials.

The proposal would utilise the existing quarry void to provide approximately 500,000 m^3 (around 800,000 tonnes) of capacity for material consistent with defined waste acceptance criteria.

The facility would have an expected operational life of 20 years (approximately 40,000 tonnes per year). The Applicant anticipates continued lime quarrying and processing for approximately 10 years that would shape the floor and walls of the managed fill as part of ongoing operations.

FEEDBACK

CRC acknowledges that the provision of compliant cleanfill and managed fill capacity is an issue that has been the subject of ongoing discussion between the quarrying, construction and development sectors, local government and other stakeholders.

CRC recognises that the availability and management of suitable disposal capacity is an important consideration for the region. CRC's comments are therefore directed specifically to the material provided in support of the referral criteria under the Fast-track Approvals Act.

The Applicant submitted a Review of Economic Benefits (the Sapere Report) dated April 2026 in support of its current referral application. CRC commissioned a review of the Sapere Report by Richard Meade of Cognitus Ltd. In summary, Mr Meade concluded that;

- The Sapere Report is not, or only partially, fit for purpose under the FTAA framework.
- The Project's assessed benefits and GDP impacts are immaterial, even at the Canterbury regional level.

- It is implausible that the project delivers significant net regional or national benefits as required under the FTAA.

CRC acknowledges that economic assessments can adopt different analytical approaches depending on the purpose of the assessment, the nature of the proposed activity and the information available at the time of the review. CRC's comments are therefore based on the independent review it commissioned of the economic evidence provided for this proposal before us at this time.

CRC also acknowledges that referral decisions under the Fast-track Approvals Act involve consideration of a range of statutory matters. The comments above relate specifically to the economic material provided by the Applicant and the independent review commissioned by CRC. They should not be interpreted as expressing a view on the overall referral decision, which is ultimately a matter for the Minister having regard to all relevant information

Mr Meade's comments are attached as Appendix 1.

CRC raised concerns about adverse effects on the proposal, including residual unacceptable effects, in our advice on the Applicant's previous referral application. CRC understands that aspects of the proposal have since been or are in the process of being refined but no details have been provided to CRC at this stage. Therefore, CRC cannot make any further comment in relation to those matters. However, CRC would encourage further discussion with the Applicant about these matters if the proposal progresses through the Fast-track process.

Canterbury Regional Council confirms that this response may be relied upon as evidence of consultation for the purposes of section 11 of the Fast-track Approvals Act. Should the application progress, CRC looks forward to continuing to engage with the Applicant as appropriate.

Ngā mihi

s 9(2)(a)

Principal Consents Planner

LIST OF ATTACHMENTS:

Attachment 1: Cognitus Audit

ATTACHMENT 1: COGNITUS AUDIT

IN THE MATTER **AND** **IN THE MATTER**	of the Fast-track Approvals Act 2024 (**FTAA**) of an application for approvals under the FTAA for the Whiterock Class 3 Managed Fill development **FTAA-2502-1062**

STATEMENT OF EVIDENCE OF DR RICHARD BRENT MEADE

27 June 2026

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1. Introduction

1.1 Scope of this Evidence

1. I have been asked by Environment Canterbury to assess the economic analysis (**the Analysis**) provided by Sapere on behalf of Whiterock Lime Limited (**the Applicant**) in support of the Whiterock Class 3 Managed Fill application (**the Application**) under the Fast-track Approvals Act 2024 (**FTAA**) for the development of a Class 3 managed fill facility at the Whiterock Lime Quarry near Loburn in Canterbury (**the Project**).

2. In particular, I have been asked whether, in my opinion as an expert economist, the Analysis credibly and robustly demonstrates the extent of the Project's regional or national benefits, and whether there are material adverse impacts arising from the Project either not addressed or inadequately accounted for in the Analysis. I have also been asked to provide my opinion on the significance of the Project's regional or national benefits.

1.2 Background, Experience and Code of Conduct

3. I am a professional economic consultant and researcher with 34 years' experience in providing economic and financial analysis and advice. My primary professional role is as Principal Economist at Cognitus Economic Insight, an economic consulting and research practice I founded in 2002. Since 2023, I have been an Adjunct Associate Professor at Griffith University, and was appointed a Lay Member of the High Court for Commerce Act matters in 2024. In June 2025, I retired after being on the organising committee of the Law & Economics Association of New Zealand for 10 years, having been president for three years, and Auckland vice president for six years.

4. Prior to founding Cognitus, I was an investment banker with Credit Suisse First Boston (1992-1998), through which I was a valuation and corporate finance specialist. I have also taught undergraduate and MBA finance and/or corporate finance for Victoria University of Wellington in New Zealand and Hong Kong multiple times, and completed a graduate-level course in finance as part of my PhD (further details below).

5. I have also been a Research Principal at the New Zealand Institute for the Study of Competition and Regulation (2001-2011), and a Senior Research Fellow at Auckland University of Technology (2015-2025). In addition to teaching finance or corporate finance, I have also lectured in industrial organisation and/or environmental economics at Auckland University of Technology and University of Auckland multiple times.

6. Since 1992, I have provided independent advice to 10 iwi/tribes, or groups of iwi, in negotiations with the Crown for settlements of historical claims arising from Crown breaches of the Treaty of Waitangi, including the landmark Ngāi Tahu settlement. I have also provided independent expert advice for multiple other Māori organisations, and government agencies in relation to Māori matters, on a range of policy and commercial matters.

7. I hold the following qualifications: a PhD (awarded with Distinction) in industrial organisation and regulation, as well as an MPhil and MSc in economic theory and econometrics, all from Toulouse School of Economics. I also hold a BSc (Hons, First Class) in statistics and operations research (including papers in economics and finance), a BSc in statistics and operations research, and a BCA in economics and finance, all from Victoria University of Wellington.

8. I belong to multiple professional and academic associations, including the Law & Economics Association of New Zealand (Member), Competition Law & Policy Institute of New Zealand (Member), Asia-Pacific Industrial Organisation Society (Member), New Zealand Association of Economists (Member), the New Zealand Institute of Forestry (Ordinary Member), and the Australian Centre for International Commercial Arbitration (Associate Member).

9. Relevant examples of my work for this exercise include:

    9.1. Assessing economic evidence provided in support of other applications under the FTAA, including for the Waihi North and Bendigo-Ophir gold-mining applications, the Te Ākau Bream Bay sand-mining application, the Delmore and Sunfield housing applications, and the Stella Passage port expansion application;

    9.2. Undertaking numerous and often-times complex financial evaluations;

    9.3. Applying the total economic value (**TEV**) framework for describing and categorising the full range of economic values that attach to a given activity or resource, and also non-market valuation (**NMV**) techniques for ascribing monetary values to product or service attributes that are not traded in markets and hence which lack identifiable market prices;

    9.4. Co-authoring a study commissioned by Te Puni Kōkiri on the economic value of recognising and protecting Māori taonga, sole-authoring a study on the economic value of access to kapa haka festivals, and providing expert evidence before the Waitangi Tribunal assessing the welfare costs to whānau of inequitable access to Māori language immersion schooling;

9.5. Providing expert evidence or commercial advice regarding fair sharing – e.g. of net social benefits or commercial returns;

9.6. Co-authoring a study commissioned by Kāhui Wai Māori on translating traditional Māori concepts regarding customary rights (over freshwater and geothermal resources) into contemporary economic terms;

9.7. Undertaking research on how land use is affected when land provides cultural services as well as commercial value, as well as research more broadly on the role of cooperative ownership in affecting business viability and behaviour; and

9.8. Providing expert economic evidence (including for multiple landmark cases) in the High Court, Waitangi Tribunal, and Environment Court.

10. I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses (**the Code**), and have complied with it in the preparation of this evidence. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.

1.3 Documents Reviewed

11. In preparing this evidence, I have reviewed the following documents:

11.1. A report prepared by Sapere for Whiterock dated April 2026, *Whiterock Class 3 Managed Fill: A Review of Economic Benefits* (**Sapere Report**);

11.2. An undated report prepared by WSP, *Attachment 8: Anticipated and Known Adverse Effects* (**WSP Report**);

11.3. An undated document prepared by or on behalf of the Applicant entitled *Whiterock Quarry and Managed Fill – Consultation Material* (**Consultation Material**);

11.4. An undated document prepared by WSP on behalf of the Applicant, *Appendix R: Containment Risk Assessment* (**Containment Risk Report**); and

11.5. Other documents and materials as referenced throughout this statement of evidence.

1.4 Summary of Main Conclusions

12. In the following sections I set out my detailed assessment of the Analysis. By way of summary, it is my opinion that:

12.1. The FTAA requires a clear assessment of whether the Project delivers net benefits to New Zealand's social welfare once all costs, disbenefits, and adverse impacts are accounted for. In economic terms, this necessitates a cost-benefit analysis (**CBA**), rather than an economic impact assessment (**EIA**).

12.2. The Sapere Report provides both an EIA (for full-time equivalent (**FTE**) employment impacts, and regional GDP impacts) and a partial CBA (for certain non-market benefits, ignoring non-market costs) – it is therefore not, or only partially, fit for purpose under the FTAA framework. Its EIA measures economic activity rather than benefits, includes costs as benefits, and overstates impacts due to use of input-output (**I-O**) multipliers which are known to over-state project impacts. Its CBA assesses non-market benefits but omits significant non-market adverse impacts. In either case, the results materially overstate the project's economic contribution. Accordingly, the Project's claimed impacts, let alone benefits, are not robustly established.

12.3. Critically, the Project's assessed benefits/impacts are immaterial at even the Canterbury regional level (hence only even more immaterial at the national level), even before allowing for potentially substantial unmitigated cultural adverse impacts, which costs are likely to be sufficient to offset any claimed Project impacts/benefits.

12.4. On the available evidence, it is implausible that the project delivers significant net regional or national benefits as required under the FTAA.

2. Comprehensive Cost-Benefit Analysis Required, Not Economic Impact Analysis or Only Partial Cost-Benefit Analysis

2.1 Overview

13. In this section I:

13.1. Explain why I understand the FTAA to require a comprehensive (not selective or partial) CBA of the Project's net benefits, accounting for both market and non-market benefits and costs; and

13.2. Explain why EIA of the sort used in the Analysis, which assesses the Project's "impacts" rather than its "benefits", is inappropriate, and how reliance on project "impacts" can result in projects being approved that lessen social welfare/wellbeing – i.e. result in disbenefits at a regional or national level.

2.2 Cost-Benefit Analysis Framework

14. I understand the framing of the FTAA to require a CBA, since the focus of s.3 is on projects that deliver significant regional or national "benefits":

14.1. By any interpretation, a regional or national "benefit" is something that makes a region or the nation "better off" in some sense – which is what "social welfare" in the CBA framework captures:

14.1.1. By contrast, impacts identified using EIA may or may not make a region or the nation better off, and do not do so comprehensively (since EIA's focus is on "market economy" impacts only – it ignores non-market considerations altogether, as discussed further in Section 3.2 below).

15. It follows that s. 3 must be focusing on projects that deliver positive net benefits (since if a project's net benefits are negative, then by definition the project is not beneficial):

15.1. By construction, EIA does not weigh benefits against costs, and can even conflate them by counting costs as relevant impacts (making it impossible in that case to determine net benefits).

16. These features alone point to the FTAA requiring some form of CBA (and not EIA, except as below) – it requires a comparison of project (gross) benefits (things that make a region or the nation better off) with project costs (things that make a region or the nation worse off), with the difference between the two measuring the extent to which the project generates "benefits":

16.1. I understand s. 85(3) of the FTAA to support this interpretation, requiring a consideration of a project's adverse impacts, which under the standard CBA framework – if applied comprehensively – would naturally be incorporated

(including non-market impacts), either quantitatively if possible or qualitatively otherwise;

16.2. Either way a Panel, as for any CBA, is able to weight relevant costs and benefits as it considers appropriate, and a formal CBA systematically transparently sets out all relevant costs and benefits, which helps to avoid omissions or double-counting.

17. Notably, the s. 3 focus is on "benefits" – if Parliament had intended that s. 3 should instead focus on "impacts", "GDP impacts", "GDP", "economic impacts", or "economic activity", I would have expected it and the FTAA to have said so:

17.1. <u>These other measures are only pertinent if and to the extent they measure "benefits"</u> – i.e. things that improve social welfare;

17.2. Impacts or activity are not necessarily beneficial – e.g. socially-harmful activities like illegal drug supply – this implies a need to establish how impacts or activity improve social welfare (whereas by definition "benefits" in a CBA are necessarily things that improve welfare).

18. From an economic perspective, that naturally favours CBA, and not EIA, especially if "impacts" include costs, which favours inefficient projects over comparable but efficient ones.

19. Note that the legislation does not specifically require or mandate CBA, but I understand that it does so in effect due to its framing (as above), with CBA in any case an economically coherent and systematic framework that directly aligns with the s. 3 focus on "benefits", and also informing s. 85(3) assessments (without precluding panel weighting, and helping to avoid omissions or double counting):

19.1. By contrast, in my opinion EIA is <u>inconsistent with</u> FTAA requirements <u>unless</u> it speaks directly to assessing net benefits – since it is not complying with the s. 3 focus on "benefits" otherwise.

19.2. EIA is remote from s. 3 "benefits" focus, and therefore needs to demonstrate how impacts are benefits, and properly distinguish costs from benefits, whereas CBA directly aligns with that focus.

20. In summary, the FTAA's focus on project "benefits" (net of monetary project costs and other monetary disbenefits), suitably weighed against project adverse impacts (including, among

other things, non-monetary costs), necessarily requires an assessment of how that project enhances New Zealand's social welfare/wellbeing (at a regional or national level), since if a project does not increase social welfare/wellbeing, then in economic terms it is not beneficial at an aggregated (i.e. regional or national) level:

20.1. I note that my conclusion, that the FTAA requires a CBA and not an EIA to assess a project's (net) benefits, has been echoed in a recent article by two other prominent New Zealand economists, Dr Timme Denne of Resource Economics, and Dr Adolf Stroombergen of Infometrics;[1]

20.2. I further note that the Sapere Report plainly acknowledges that it has assessed the Project's impacts on economic activity, and not its contribution to social welfare.[2]

2.3 Focus on Benefits – Not Impacts – Essential for Assessing Whether Projects Improve Social Welfare/Wellbeing

21. Elaborating on the above discussion, following Treasury guidance, and based on my own assessment – for the purposes of sound economic decision-making – any assessment of whether the Project gives rise to significant regional or national benefits as required under the FTAA necessarily requires a CBA, and not an EIA (and partial CBA) as provided in the Analysis (discussed further below):

21.1. Such a CBA measures the net benefits of an undertaking like the Project, being the total incremental benefits of the Project, less its total incremental costs (including opportunity costs, and both indirect market and non-market costs and benefits as well as direct ones), appropriately adjusted for time and risk, and allowing for any salient distributional impacts;

21.2. By contrast, EIA purports to measure the economic impact of the Project, not its benefits (and hence not its contribution to social wellbeing) *per se* – including by treating Project costs as benefits, even if national wellbeing could be improved by allocating fewer resources elsewhere:[3]

[1] https://www.rmla.org.nz/rmla-insights/benefits-analysis-under-the-ftaa.

[2] Sapere Report, at p. 16.

[3] Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 54.

21.2.1. The classic example of EIA indicating a benefit, when society is not in fact made better off by the relevant activity, is paying a person to dig a hole and then pay them to fill it in again.

21.2.2. This is counted as a gain under EIA – two payments of wages – but not under CBA – wage costs are incurred for a socially pointless activity, when the relevant labour resources could have been used for socially beneficial activities elsewhere in the economy at the same wage cost.

22. Indeed, Treasury argues for the use of CBA as follows:[4]

22.1. "[A]ll advice that is aimed at helping decision-makers make a decision, should adopt a CBA framework as an organising principle"; and

22.2. Investment in systematic CBA is justified whenever decisions impact on large numbers of people.

23. By contrast, Treasury notes the following additional shortcomings of EIA (which measures components of GDP):[5]

23.1. It does not measure social welfare *per se*;

23.2. It makes no inherent distinction between economic impact accruing to local parties and economic impact accruing to overseas parties – i.e. it fails to identify whether project impacts accrue to New Zealand (as is required by "significant regional or national benefits") or to overseas parities (about whose welfare the FTAA appears to be unconcerned);

23.3. It ignores non-market effects, which can be socially important; and

23.4. It offers no insight as to any distributional concerns – i.e. whether resources are allocated to groups deemed in need of greater access than others.[6]

[4] Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 39.

[5] Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 47.

[6] This latter issue can be partially addressed through an alternative approach involving a social accounting matrix (**SAM**), which the Analysis does not apply.

24. Treasury concludes that "EIA can provide useful contextual information for decision-makers, but it is not suitable as a tool for measuring the balance of costs and benefits of a decision to society"[7] [emphasis added]:

    24.1. This appears highly pertinent to assessing FTAA applications.

25. To Treasury's list I would also point out that EIA typically focuses on only gross Project "market" (versus "non-market") economic impacts – see Section 3.2 below for further discussion – and as such does not account for adverse Project economic impacts (whether market or non-market) or non-market Project benefits for that matter. Hence EIA is inherently partial in its coverage, whereas CBA, if applied properly, captures all relevant positive or negative project effects:

    25.1. Furthermore, as above, EIA can even treat adverse project impacts as benefits – e.g. by treating expenditures to remediate adverse impacts as desirable Project impacts – such as due to requiring expenditures on capital, labour or other inputs (whereas in CBA terms such expenditures would be counted as costs incurred to mitigate the social costs of the relevant adverse impacts, with any such mitigation counting as a social benefit).

26. By way of illustration, if an oil spill creates $10m in non-market social costs (e.g. environmental harms not directly affecting market economic activity), but those social costs are halved by spending $1m on cleanup, then CBA counts the cleanup costs as a cost, while recording a reduction in the oil spill social costs of $5m (still counting the remaining unremedied $5m of the spill's social costs as an outstanding social cost):

    26.1. EIA by contrast ignores the social costs of the spill (whether pre- or post-cleanup), but counts the expenditure on cleanup as a positive economic impact – as if a social welfare gain has been enjoyed due to the oil spill, when in net terms society bears $5m in unmitigated social costs, and spent $1m of resources that could have been used elsewhere for social benefit (e.g. spending on health, education, infrastructure, etc).

27. As such, failing to assess the Project in terms of its net social benefits under a CBA framework risks misallocating national resources, with purported regional or national benefits potentially being lower – and distributed more inequitably – than what could be

[7] Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 39.

achieved through more efficient and equitable use of resources (as might be identified using CBA).

28. I consider a full CBA of the Project to be feasible, and warranted given its identified adverse impacts (discussed further in Section 3.4 below).

29. A hypothetical example further illustrates how relying on project impacts rather than project benefits can lead to a reduction in social welfare/wellbeing – i.e. negative project benefits, or net project disbenefits (either way, failing to achieve the FTAA's purpose). Specifically, if two projects deliver exactly the same non-employment benefits, but one of them involves twice the employment level of the other:

    29.1. EIA would suggest that the project with the higher employment level is to be preferred due to having larger employment impacts – yet the other project is by assumption twice as labour-efficient, since it can deliver the same non-employment benefits with only half the required employees (also meaning that the extra employees required to deliver the less efficient project could be deployed elsewhere in the economy, and thereby generate even further benefits for the region or nation);

    29.2. A CBA would prefer the project that delivers the given level of non-employment benefits with the lower required workforce, and lead to better overall economic outcomes – i.e. would deliver greater economic "benefits" as required for FTAA purposes, if not higher economic "impacts" (as measured by EIA).

3. Assessment of Sapere's Economic Analysis

3.1 Overview

30. In this section I explain how the Analysis:

    30.1. Applies EIA to assess the Project's employment (i.e. full-time equivalent, **FTE**) and GDP impacts (as opposed to benefits), and a one-sided and partial CBA of certain Project non-market benefits (ignoring offsetting Project non-market costs);

    30.2. Overstates the Project's impacts due to its use of I-O multipliers which are known to produce biased (i.e. overstated) impacts because they rest on certain restrictive assumptions that are typically not valid in practice;

30.3. Further overstates the Project's impacts/benefits by not accounting for all relevant project costs, disbenefits, or adverse impacts – notably, unmitigated cultural costs, which I conservatively show to be of an order of magnitude sufficient to either fully or largely offset the Project's claimed impacts/benefits;

30.4. Implicitly assumes, without providing justification, that existing waste levels are socially desirable, and that it is desirable to accommodate those waste levels, albeit more efficiently, via the Project;

30.5. Claims that the Project provides important enabling benefits (i.e. benefits to other sectors such as construction), but explicitly assumes that the Canterbury region's waste requirements will be met without the Project (just at very slightly higher costs);

30.6. Incorporates certain technical errors – both material and immaterial;

30.7. Fails to provide sensitivity analyses, and is insufficiently transparent to fully test and validate its key assumptions and modelling choices;

30.8. Provides assessed Project impacts/benefits differing by an entire order of magnitude across scenarios, making it difficult to understand what the true level of claimed Project impacts/benefits really are; and

30.9. Results in claimed Project impacts/benefits which, even if taken at face value, are immaterial at a regional level (and hence only even more immaterial at a national level), so cannot plausibly constitute significant regional or national benefits as required under the FTAA.

3.2 Sapere Report Does Not Provide a Comprehensive Assessment of Project Benefits

31. The Sapere Report provides a hybrid form of analysis, comprising:

31.1. An EIA of the Project's employment (i.e. FTE) and GDP impacts; and

31.2. A partial but one-sided assessment of the Project's non-market benefits – specifically, the value of travel time savings, reduced greenhouse gas emissions, and avoided crash costs are assessed, but offsetting non-market Project costs (i.e. cultural costs) are not assessed.

32. As explained in Section 2, impacts assessed using EIA are not the same as benefits as required under the FTAA, so by definition EIA fails to provide an accurate assessment of even the Project's "market" benefits:

    32.1. On the other hand, while the Analysis legitimately assesses non-market Project benefits, its omission of relevant non-market costs means it further fails to fully assess the Project's (net) benefits.

33. To better understand the distinction between "market" and "non-market" benefits and costs, market-based values relate to things (like commodities, or labour) that are traded in markets and which can be valued by reference to market prices. Conversely, non-market goods or services are not traded in markets:

    33.1. This does not mean non-market goods or services are unimportant (publicly-provided health or education services are a prominent example), but rather that their value is often overlooked or incompletely assessed because it is not possible to use market prices to estimate their value – when they are not treated commensurately with market goods or services, their values tend to be under-acknowledged;[8]

    33.2. Such non-market costs/benefits are typically not immaterial just because they lack market prices – according to a prominent study assessing non-market values of New Zealand's land-based ecosystems, those non-market values can be at least as great as their market values.[9]

34. A framework commonly used by economists to characterise the full range of both market and non-market values is the so-called Total Economic Value (**TEV**) framework:[10]

    34.1. For example, the TEV framework can be used to characterise the full range of values that can be attached to things like natural resources;[11]

[8] Eppink et al., 2016, *Non-Market Values in a Cost-Benefit World: Evidence from a Choice Experiment*, https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0165365.

[9] Patterson and Cole, 2013, *'Total Economic Value' of New Zealand's Land-Based Ecosystems and their Services.*

[10] A survey of the TEV literature is provided in NZIER, 2018, *What's the Use of Non-Use Values?*

[11] It is also increasingly being used to assess cultural value. For a survey, see Allan et al., 2013, Value and Culture, Motu Working Paper 13-09.

34.2. Relatedly, over many decades economists from multiple specialisations (e.g. environmental, transport, labour, health, education and cultural economics) have developed an extensive and well-established range of sophisticated non-market valuation (**NMV**) techniques to objectively estimate people's subjective non-market values.

35. A 2018 Treasury discussion paper applies the TEV framework to the valuation of natural capital (i.e. minerals, energy resources, land, soil, water, trees, plants and wildlife),[12] stating that the "general framework has been recognised for the past 30 years".[13]

36. In short, the TEV framework recognises that the value attaching to any given resource (e.g. minerals) is not confined to the value that can be realised in a market exchange of that resource or the commercial produce it can sustain, but can either:

36.1. Sustain a range of co-existing and additive other values (e.g. social, environmental or cultural values), even if market prices do not exist to directly quantify those other values; or

36.2. Conflict with those other values – e.g. creating non-market opportunity costs.

37. While there are numerous variants of the TEV framework applied in practice,[14] Figure 1 illustrates one such variant, based on a prominent study assessing TEV for New Zealand's land-based ecosystems.[15] Importantly, the Analysis:

37.1. Considers via its EIA only impacts (vs benefits) relating to what Figure 1 characterises as just a subset of "use value" relating to the Project, namely provisioning services value;

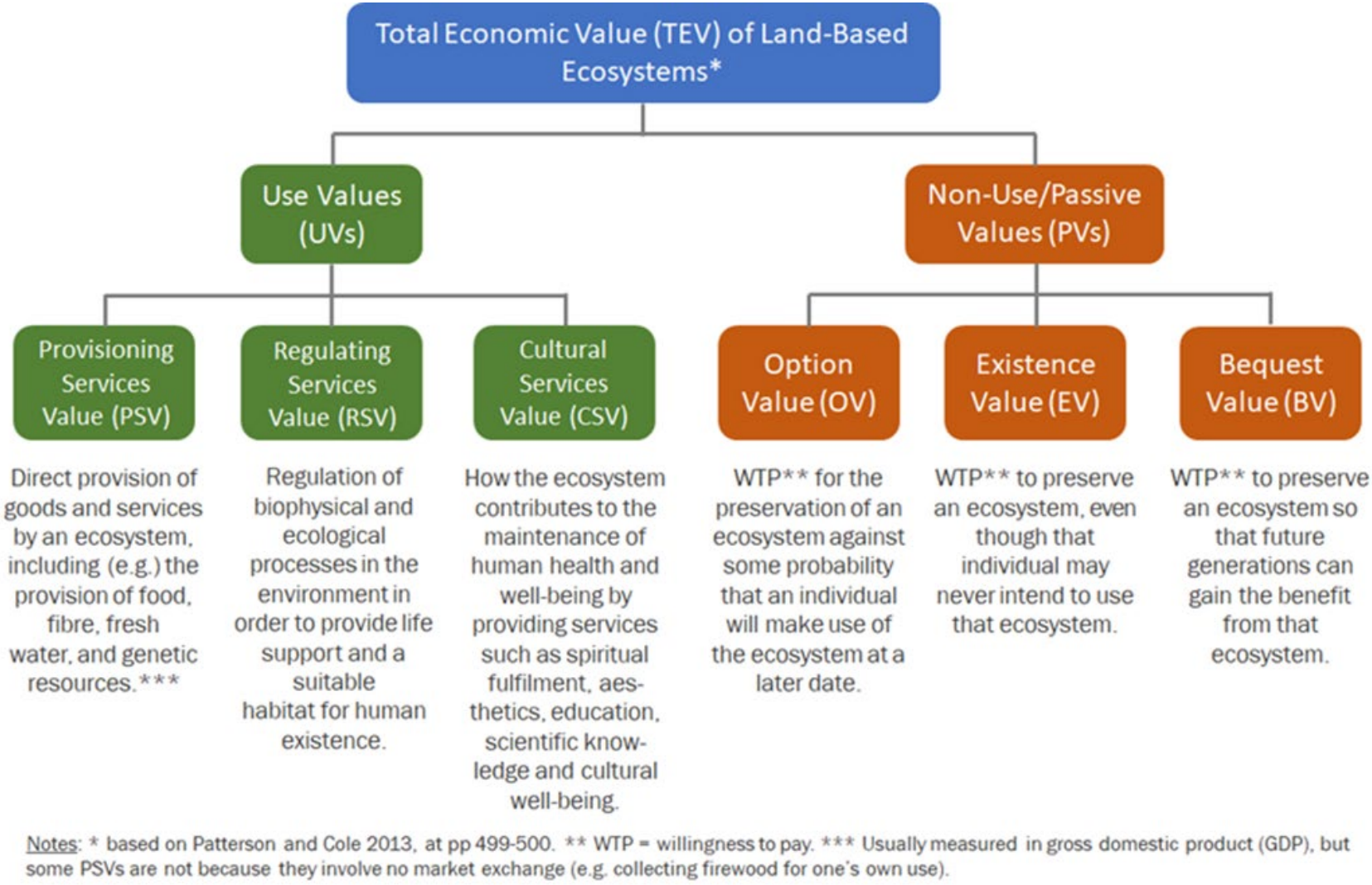
[12] van Zyl and Au, 2018, *The Start of a Conversation on the Value of New Zealand's Natural Capital*, Treasury Discussion Paper 18/03.

[13] van Zyl and Au, 2018, *The Start of a Conversation on the Value of New Zealand's Natural Capital*, Treasury Discussion Paper 18/03, at p. 7.

[14] For multiple examples, see van Zyl and Au, 2018, *The Start of a Conversation on the Value of New Zealand's Natural Capital*, Treasury Discussion Paper 18/03, Appendix 1, at pp 36-39.

[15] Patterson and Cole, 2013, *'Total Economic Value' of New Zealand's Land-Based Ecosystems and their Services*.

Figure 1 – Total Economic Value (TEV) Framework as Applied to New Zealand's Land-Based Ecosystems by Patterson and Cole 2013



Source: Author's adaptation of Patterson and Cole 2013.

37.2. Considers benefits – or in this case, avoided costs – relating to other use values (regulating services value), but not foregone cultural services value (i.e. cultural costs); and

37.3. Ignores other likely important values relating to the Karetu River, such as "passive values" relating to option, bequest and existence values, all of which are likely to be important components of cultural values attaching to the river.

38. Notable in relation to the latter, the WSP Report acknowledges that the Project has more than minor adverse effects, or potentially significant adverse effects, on the cultural landscape because Ngāi Tūāhuriri, as local mana whenua and cultural experts:[16]

38.1. Oppose the Project; and

38.2. Consider themselves adversely affected by the Project due to its proximity to the Karetu River, including (among other things) because it diminishes the river's mauri.

39. Clearly it is open to the Panel to weigh any adverse impacts of the Project against claimed Project benefits (whether measured as impacts or benefits) with or without any or all of those adverse impacts being monetised. However:

39.1. This would seem incongruous if any adverse effects are inherently monetisable and benefits/impacts have been presented in monetary terms;

39.2. Good modelling practice would be to systematically and transparently include all credibly monetisable costs and benefits in the model itself, since omitting relevant and material costs or benefits clearly risks misleading modelling conclusions being reached;

39.3. If relevant and material adverse effects are not monetised in some objective way, they can only be weighed in purely subjective terms against monetised (net) project benefits, which calls the very purpose of economic modelling into question (if it is not necessary for adverse effects, then is it necessary for benefits/impacts, and if not, then what would be the basis for assessing regional or national benefits?);

39.4. Hence, monetising impacts – where this can be done credibly – should assist Panels in their assessment of how project benefits compare with project adverse impacts.

[16] WSP Report, at p. 27.

40. In practice, many non-market benefits can only be monetised approximately. However, it is a false dichotomy to suggest that any or all market impacts/benefits can be monetised more accurately. This is because the Project's market impacts/benefits arise over a future 20 year period, and it is impossible to accurately assess Project impacts/benefits arising in even five let alone 20 years' time, given the relevant market prices and production technologies are inherently uncertain and impossible to predict with accuracy:

    40.1. This is not to suggest that modelling should be abandoned – rather that it be applied as systematically, transparently and robustly as it can be, highlighting the implications of key areas of uncertainty for modelled results – e.g. performing sensitivity analyses on key input assumptions, as discussed further in Section 3.8 below;

    40.2. That would then better support any remaining subjective trade-offs that need to be made, while avoiding the need for subjective trade-offs wherever possible.

41. In any case, I agree in general terms with the approach taken in the Sapere Report to apply widely-used metrics of relevant non-market values to assess the Project's non-market benefits – Sapere has not taken the position that only market impacts/benefits can or should be monetised:

    41.1. My main point of departure with Sapere's approach to assessing non-market impacts/benefits is that only non-market benefits have been monetised, and no attempt has been made to asses even the relevant order of magnitude of any corresponding non-market (e.g. cultural) costs;

    41.2. As a consequence, the Sapere Report presents an upwards-biased assessment of the Project net non-market impacts/benefits.

3.3 Multiplier-Based Economic Impact Analysis Has Known Limitations Leading to Overstated Benefits, Which Alternative Methods Avoid

42. Even if an EIA were deemed appropriate for establishing significant regional or national benefits, this requires use of an approach that more properly assesses the flow-on economic impacts of the Project than the I-O multiplier method used in the Sapere Report. That method

has widely-acknowledged limitations due to the restrictive and unrealistic assumptions it is based upon, and systematically overstates economic benefits due to those limitations.[17]

43. For example, the Australian Bureau of Statistics (**ABS**) ceased publishing I-O multipliers almost 25 years ago due to the method's unrealistic assumptions and inherent bias, stating:[18]

> "Production of multipliers was discontinued with the 2001–02 issue for several reasons. There was considerable debate in the user community as to their suitability for the purposes to which they were most commonly applied, that is, to produce measures of the size and impact of a particular project to support bids for industry assistance of various forms. …
>
> "I–O multipliers are most commonly used to quantify the economic impacts (both direct and indirect) relating to policies and projects. While their ease of use makes I–O multipliers a popular tool for economic impact analysis, they are based on limiting assumptions that results in multipliers being a biased estimator of the benefits or costs of a project." [emphasis added]

44. The ABS summarises the "inherent shortcomings and limitations of multipliers for economic impact analysis" as follows:[19]

    44.1. **Lack of supply–side constraints:** The most significant limitation of economic impact analysis using multipliers is the implicit assumption that the economy has no supply–side constraints. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.

    44.2. **Fixed prices:** Constraints on the availability of inputs, such as skilled labour [or housing], require prices to act as a rationing device. In assessments using multipliers, where factors of production are assumed to be limitless, this rationing response is

[17] For example, see Counsell, K., 2024, "Improving economic analysis in environmental decision-making: a tale of two coal mines", *Resource Management Journal*, August. A more comprehensive discussion of I-O multipliers and their alternatives for economic impact analysis is given in Dwyer, L., Forsyth, P. and W. Dwyer, 2020, chapter 9, "The Economic Impacts of Tourism", *Tourism Economics and Policy*, Channel View Publications.

[18] https://www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/5209.0.55.001Main%20Features42009-10.

[19] https://www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/5209.0.55.001Main%20Features42009-10.

assumed not to occur. Prices are assumed to be unaffected by policy and any crowding out effects are not captured.

44.3. **Fixed ratios for intermediate inputs and production:** Economic impact analysis using multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. As such, impact analysis using multipliers can be seen to describe average effects, not marginal effects. For example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount;

44.4. **No allowance for purchasers' marginal responses to change:** Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.

44.5. **Absence of budget constraints:** Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government [e.g. local government] consumption is not subject to budget constraints.

44.6. **Not applicable for small regions:** Multipliers that have been calculated from the national I–O table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter–industry linkages are normally relatively shallow. Inter–industry linkages tend to be shallow in small regions since they usually don't have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions.

45. Notably, for the Project, the Analysis' methodology not allowing for supply–side constraints means that competition for things like (skilled) labour, materials, or accommodation for construction and other workers – if there is not significant excess capacity for those things – might simply displace economic activity elsewhere.

46. Likewise, due to implicitly assuming fixed input prices, the Project's purported impact may turn out to be much less beneficial than as assessed if competition for things like (skilled)

labour or temporary accommodation for development and other workers bids up prices such as wages and rents.

47. Given these limitations, Treasury guidance when assessing project proposals is that I-O multipliers of the sort used in the Analysis of the Project should be ignored unless there is significant unemployment (I would add, or other significant spare capacity – e.g. in accommodation for construction workers, etc) in the economy:[20]

    47.1. This means, at best, the Project's assessed impact (let alone benefit) is at most that assessed in the Analysis;

    47.2. In reality, since the Analysis ultimately measures gross economic impact, and does so using I-O multipliers, its assessment of the Project's economic impact will *overstate* the Project's actual benefits.

48. A technique better suited to assessing the economic impact of the Project is computable general equilibrium (**CGE**) analysis. Unlike I-O multipliers-based EIA, CGE more comprehensively and realistically accounts for how an economic stimulus ripples through other parts of the economy (either by sector or region), including by allowing for constraints in the supply of labour, housing (etc), and also allowing for prices to adjust in response to the proposed stimulus:

    48.1. In my opinion, where an EIA is used, it is preferable to undertake a full CGE analysis of the Project's regional and national impacts – though, as above, only if and to the extent that such impacts constitute regional or national benefits;

    48.2. By better accounting for regional and economy-wide feedback loops than I-O multipliers-based EIA, CGE analysis would better identify whether the Project gives rise to net regional benefits, and also net national benefits.

3.4 Unmitigated Cultural Costs are Likely to Fully or Largely Offset Claimed Project Impacts/Benefits

49. As noted above, the WSP report acknowledges that the Project has more than minor adverse effects, or potentially significant adverse effects, on the cultural landscape. While I defer to Ngāi Tahu rūnanga, Ngāi Tūāhuriri – as mana whenua – to represent the scale of such adverse effects, here I show, by reference to published willingness-to-pay (**WTP**) metrics that

[20] Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 16.

are likely to very conservatively understate the Project's cultural costs, that those costs are plausibly sufficient to offset the Project's claimed impacts/benefits.

50. As to the latter, the Analysis claims the following impacts/benefits:

    50.1. Minimum GDP impacts of $1.39m/year, and maximum GDP impacts of $1.76m/year;[21]

    50.2. Minimum "efficiency gains" (i.e. avoided travel time, emissions, and crash costs) of $34,747/year to $185,448/year (Kate Valley counterfactual), and maximum efficiency gains of $306,711/year to $1,764,395/year (Taiko Road counterfactual).[22]

51. This implies:

    51.1. Minimum claimed annual Project impacts/benefits of $1.39m + $0.035m = c. $1.4m/year; and

    51.2. Maximum claimed annual Project impacts/benefits of $1.76m + $1.764m = c. $3.5m/year.

52. Published research on New Zealand (i.e. not necessarily Māori – let alone Ngāi Tūāhuriri or Ngāi Tahu) individuals' WTP to achieve moderate (respectively, good) lowland freshwater outcomes, instead of poor outcomes, is $89/person/year (respectively, $100/person/year; midpoint $94.50) in 2026$, even when those individuals do not directly engage with those lowland freshwater habitats:

    52.1. When those individuals do directly engage with those lowland freshwater habitats, the corresponding figures are $95-107/person/year (midpoint $101).[23]

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[21] Sapere Report, at p. 16.

[22] Underlying figures taken from Sapere Report at Tables 7-9 ("Base case" without resource consenting constraints), and from p. 25 ("Consent constraints" case).

[23] All figures taken from Table 3.5 of Tait et al., 2017, *Assessing New Zealand public preferences for native biodiversity outcomes across habitat types: A choice experiment approach incorporating habitat engagement*, Lincoln University AERU Research Report No. 345. CPI adjustments from 2015 to 2026 were made using the Reserve Bank's inflation calculator: https://www.rbnz.govt.nz/monetary-policy/about-monetary-policy/inflation-calculator.

53. I do not suggest that these figures represent the WTP of Ngāi Tūāhuriri member's for improved freshwater outcomes, which only those members can advise:

    53.1. Rather, I reference these published WTP metrics as conservative lower bounds on what that WTP might be, to illustratively identify how even such conservatively assessed costs affect whether the Project's claimed impacts/benefits are more or less than those costs – i.e. whether the Project's claimed impacts/benefits are net positive or net negative even allowing for only conservatively-assessed cultural costs.

54. To make this illustrative assessment, it is necessary to make assumptions as to the relevant affected populations, which in this case might include:

    54.1. Ngāi Tūāhuriri (adult) members;

    54.2. Ngāi Tahu (adult) members based in Canterbury; or

    54.3. Ngāi Tahu (adult) members.

55. Due to data limitations, for illustrative purposes I conservatively assume either 17,265 adult Canterbury Ngāi Tahu members, or 60,158 Ngāi Tahu adult members, in each case using 2023 Census data:[24]

    55.1. Assuming the former population, the illustrative conservative total WTP to avoid the Project's cultural impacts would be in the order of 17,265 x $94.50 = $1.63m/year, which is almost half of the maximum claimed Project impacts/benefits of $3.5m/year, and greater than the minimum claimed Project impacts/benefits of $1.4m/year;

    55.2. Assuming the latter population, the illustrative conservative total WTP to avoid the Project's cultural impacts would be in the order of 60,158 x $94.50 = $5.7m/year, which clearly exceeds even the maximum claimed Project impacts/benefits of $3.5m/year.

56. Once again, I stress I am not purporting to represent the position of Ngāi Tūāhuriri as to the actual level of cultural costs arising due to the Project (or whether those costs can or should be monetised):

[24] https://tewhata.io/ngai-tahu-kai-tahu/.

56.1. Instead, I demonstrate, using conservative publicly-available WTP metrics, that those cultural costs alone could easily far exceed the Project's claimed impacts/benefits.

3.5 Sapere Report Implicitly Assumes that Current Waste Levels are Socially Desirable

57. The Sapere Report assesses the Project's claimed efficiency benefits in terms of enabling existing waste levels to be accommodated more cheaply than can be achieved through alternative means. It stresses that the Project does so by reducing travel time, emissions, and crash costs for handling those waste levels.

58. However, this presumes that the current level of waste is in some sense socially desirable, and hence we should only care about handling that waste as efficiently as possible. The implicit assumption is that absent the Project the costs (i.e. transport-related costs and gate fees) of handling waste will be in some sense "too high":

58.1. No evidence is presented to justify this assumption, and in reality it is possible that the total costs of handling the region's existing waste reflect only private costs, and do not fully internalise the total costs, including social costs, of such waste;

58.2. As such, it could in fact be socially desirable to <u>increase</u> the costs of handling such waste, to achieve a reduction in such waste, which the Project – if its efficiency benefits are real – might frustrate.

3.6 Sapere Report Does Not Assume Regional Waste Needs Will Not Be Met Absent the Project

59. The Sapere Report stresses that the Project will:

59.1. "[E]nable the continued functioning of existing regionally significant infrastructure";[25] and

59.2. "[A]lign with both national and regional direction by enabling more cost-effective diversion of inert materials, reducing pressure on Class 1 facilities, and supporting more efficient and sustainable waste system performance across the region."[26]

[25] Sapere Report, at p. 6.

[26] Sapere Report, at p. 9.

60. However, the Project's assessed efficiency benefits are predicated on the region's existing waste management needs being accommodated even without the Project, just at slightly higher travel time, emissions, and crash costs:

    60.1. As such, and because those efficiency benefits are so modest, there is nothing in the Analysis that suggests the region's waste management needs cannot be effectively accommodated even without the Project proceeding;

    60.2. Indeed, for the reasons discussed above, the Project could in fact result in perpetuating a socially-excessive level of regional waste.

3.7 Sapere Report Contains Material and Immaterial Technical Errors

61. The formula provided in the Sapere Report for converting 20 years of annual GDP impacts into a present value of $17.3m is incorrect, and impossible to interpret given the provided variable definitions:[27]

    61.1. That said, the $17.3m figure provided is correct, so this error is immaterial in practice.

62. More materially, travel time savings are presented as social benefits, and private transport cost savings (i.e. of waste transporters) due to the Project are argued to be transfers that re not relevant for CBA purposes:[28]

    62.1. In this case, however, any travel time savings are likely to be private in nature – i.e. accruing to users of waste transport services in the form of lower waste transport costs;

    62.2. Such private benefits are very much relevant for transport CBA purposes, and are not treated as transfers that can be ignored in such CBAs.[29]

[27] Sapere Report, at p. 17. The correct formula is $PV = (A / r) \times [1 - (1 + r)^{-n}]$.

[28] Sapere Report, at p. 23.

[29] For example, see De Rus et al., 2022, "Cost-benefit analysis of transport projects: Theoretical framework and practical rules", *Transport Policy*, 123, at pp 25-26, 29-30, and 36.

63. Critically, the assumed travel time, emissions cost, and crash cost savings attributed to the Project are based on social savings metrics that accrue to all New Zealand, not specifically to Canterbury:

    63.1. As such, the claimed Project impacts/benefits cannot be understood to be just regional impacts/benefits, which is relevant to assessing their regional or national significance (as discussed further in Section 3.10 below).

3.8 Sapere Report Fails to Provide Sensitivity Analyses, and is Insufficiently Transparent

64. While the Sapere Report does consider various scenarios (e.g. comparing the Project's travel time, emissions, and crash costs with those relative to both Taiko Road and Kate Valley), it does not follow standard modelling practice of showing how modelled efficiency results change in response to plausible changes in input assumptions, particularly where those input assumptions are material, and their values are not certain (including over time):[30]

    64.1. Indeed, FTE and GDP impacts are presented as point estimates only, with not even scenario modelling provided.

65. This means the results presented for each modelled scenario hinge on the assumed input values, and the sensitivity of scenario results to changes in those assumptions cannot be determined:

    65.1. As such, the Panel has not been presented with sufficient information to assess the robustness of the modelled results to changes in input assumptions.

66. Relatedly, the Analysis is insufficiently transparent and replicable to either test its assumptions and approach, or to translate the claimed Project impacts into annual figures over time (particularly in relation to efficiency benefits, which are stated to grow in line with district-level population growth,[31] for which no data are provided):

[30] For example, waste generation assumptions are set out in Table 5 of the Sapere Report, and key efficiency assumptions are set out elsewhere on pp 23-25, but results are not reported for plausible different values of such assumptions.

[31] Sapere Report, at p. 26.

66.1. Such transparency is a matter of good modelling practice, since it clearly identifies both key assumptions, and how those assumptions affect key modelling outputs – both of which are essential for establishing the veracity of the Analysis.

3.9 Assessed Project Efficiency Benefits Differ by Orders of Magnitude, Complicating Interpretation

67. While the Project's claimed FTE and GDP impacts are essentially point estimates, with no variation, its claimed efficiency benefits differ by orders of magnitude, i.e. referring to the annual impacts/benefits summarised in Section 3.4 above:

67.1. For the Taiko Road counterfactual, annual efficiency benefits range from $1.76m/year in the "Base case" (with no resource consent constraints) down to $0.31m/year in the "Consent constraints" case – some 82% lower;

67.2. For the Kate Valley counterfactual, the corresponding figures are $0.19m/year down to $0.035m/year – also some 82% lower;

67.3. For the "Base case", benefits are assessed to be as high as $1.76m/year for the Taiko Road counterfactual, and as low as $0.185m/year for the Kate Valley counterfactual – some 89% lower; and

67.4. For the "Consent constraints" case, benefits are assessed to be as high as $0.307m/year for the Taiko Road counterfactual, and as low as $0.035m/year for the Kate Valley counterfactual – also some 89% lower.

68. While it is legitimate and desirable to allow for key Project uncertainties, as captured in these modelled scenarios, the utility of the modelled results is reduced when those results are so highly-sensitive to the scenario descriptions:

68.1. When the variability of results is this high, then absent further information to understand which scenario is the most reliable, it is hard to meaningfully interpret those results;

68.2. All that can be said otherwise is that the results might be at a certain level, or a vastly different level – this makes it hard for decision-makers (e.g. the Panel) to understand what the true level of claimed impacts/benefits really are.

3.10 Even Claimed Impacts/Benefits are Immaterial, So Not Significant at Either a Regional or National Level

69. When Project impacts/benefits are measured in FTE or GDP terms, it is natural to consider their regional or national significance by reference to their regional or national FTE and GDP counterparts:[32]

    69.1. For reference purposes, Canterbury employment and GDP in 2025 were 365,376 filled jobs (not FTEs per se) and $53,919m respectively.[33]

70. Taking the Project's claimed maximum FTE impact of 8.7 jobs as stated, this amounts to just 0.0024% (i.e. 24 millionths) of Canterbury's filled jobs – in other words, Canterbury's number of filled jobs is more than 40,000 times the Project's maximum claimed FTE impact.

71. Taking the Project's claimed maximum annual GDP impact of $1.76m/year as stated, this amounts to just 0.0033% (i.e. 33 millionths) of Canterbury's annual GDP – in other words, Canterbury's annual GDP is more than 30,000 times the Project's maximum claimed GDP impact:

    71.1. While the Project's maximum claimed efficiency benefits of $1.76m/year (coincidentally the same figure as the maximum claimed GDP impacts) is not directly comparable to regional GDP, the same conclusion applies – annual regional GDP is more than 30,000 times those claimed maximum annual efficiencies;

    71.2. For the Project's minimum claimed efficiency benefits of $0.035m/year, the comparison is even more stark – Canterbury's annual GDP is more than 1.5 million times those claimed benefits.

72. At these levels, the Project's claimed maximum FTE and GDP impacts are not even statistical noise:

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[32] While practice in this regard differs across FTAA applications, I note that the economist for the applicant in the Bendigo-Ophir gold-mining FTAA application chose to assess the significance of claimed Project FTE and GDP impacts by reference to regional FTE and GDP levels.

[33] Using regional economic data published by Infometrics: https://regions.infometrics.co.nz/canterbury-region/.

72.1. The average annual change in Canterbury's filled jobs is 5,175 jobs, so the Project's claimed maximum FTE impact of 8.7 jobs is an immaterial share (0.17%) of even the average annual change in the region's employment;

72.2. The average annual change in Canterbury's GDP is $1,068m, so the Project's claimed maximum GDP impact of $1.76m is also an immaterial share (0.16%) of even the average annual change in the region's employment.

73. As such, if the Project did not proceed, that would not affect Canterbury's employment or GDP in any discernible way:

73.1. Since Canterbury's waste management needs are assumed in the Sapere Report to be fulfilled even without the Project, just at very modestly greater cost, this too points to the Project not having discernible regional effects more generally.

74. Notably, all of these conclusions apply before:

74.1. Allowing for the fact that not all EIA-based impacts are benefits;

74.2. Deducting the non-market value of cultural costs – which I showed above to conservatively be possibly as great as the claimed Project impacts/benefits, i.e. essentially causing those impacts/benefits to be zero or possibly even negative in net terms; and

74.3. Allowing for the fact that the claimed efficiency benefits are based on social cost metrics that apply at a national level, so cannot be assumed to be attributable to just the Canterbury region.

75. This means that the claimed Project impacts/benefits – whether in terms of FTE, GDP, or waste management service provision – are immaterial, and in net terms are even zero or negative, at a regional level:

75.1. As such, they are even more immaterial at a national level.

76. In my opinion, it is implausible to conclude that even the Project's claimed impacts/benefits – let alone its actual net benefits – are significant at a regional or national level, as required under the FTAA.

4. Conclusions

77. In conclusion, it is my opinion that:

77.1. The FTAA requires a clear assessment of whether the Project delivers net benefits to New Zealand's social welfare once all costs, disbenefits, and adverse impacts are accounted for. In economic terms, this necessitates a CBA, rather than an EIA.

77.2. The Sapere Report provides both an EIA (for FTE employment impacts, and regional GDP impacts) and a partial CBA (for certain non-market benefits, ignoring non-market costs) – it is therefore not, or only partially, fit for purpose under the FTAA framework. Its EIA measures economic activity rather than benefits, includes costs as benefits, and overstates impacts due to use of input-output (I-O) multipliers which are known to over-state project impacts. Its CBA assesses non-market benefits but omits significant non-market adverse impacts. In either case, the results materially overstate the project's economic contribution. Accordingly, the Project's claimed impacts, let alone benefits, are not robustly established.

77.3. Critically, the Project's assessed benefits/impacts are immaterial at even the Canterbury regional level (hence only even more immaterial at the national level), even before allowing for potentially substantial unmitigated cultural adverse impacts, which costs are likely to be sufficient to offset any claimed Project impacts/benefits.

77.4. On the available evidence, it is implausible that the project delivers significant net regional or national benefits as required under the FTAA.

Richard Meade (PhD, Toulouse School of Economics)
Principal Economist, Cognitus Economic Insight

From: Tim Johnston <t[redacted]>
Sent: Monday, 6 July 2026 11:25 am
To: Brown, Steph [redacted]>
Subject: RE: Protranz/Whiterock Lime Limited - consultation material and s11 FTAA notice

Kia ora Steph,

Thank you for the opportunity to review the Economic Report and for your notification. Council notes that the required notification period closes today, 6 July 2026.

Having reviewed the additional information provided, Council's position remains unchanged. The only new information submitted is the Economic Report, as you are aware Council has already obtained and considered an independent peer review of that assessment as discussed on the 2 July 2026.

Accordingly, Council continues to rely on and adopt the comments set out in:

- The Section 42A Report;
- Council's original referral comments; and
- The peer review of the Economic Assessment.

These documents are attached for ease of reference.

Should any further information or amended technical assessments be provided, Council would welcome the opportunity to review and comment on that material, provided sufficient notice and time is available to undertake an appropriate assessment.

Kind regards,

Tim Johnston | Principal Resource Management Planner
Plan Implementation Unit

Phone: 0800 965 468 (0800 WMK GOV)
Mobile: [redacted]
DDI: [redacted]

WAIMAKARIRI DISTRICT COUNCIL

waimakariri.govt.nz

From: Brown, Steph [redacted]>
Sent: Monday, 8 June 2026 1:41 PM

To: Tim Johnston s 9(2)(a) >
Subject: Protranz/Whiterock Lime Limited - consultation material and s11 FTAA notice

Caution: [THIS EMAIL IS FROM AN EXTERNAL SOURCE] DO NOT CLICK links or attachments unless you recognise the sender email

Kia ora Tim

Thanks for meeting with us last week to provide an update on the project.

As mentioned at the meeting, the Applicant has put together a package of consulation material and is also giving notice of the intention to submit a referral application.

Attached to this email is:

- Consultation material that includes the Sapere economic report and letters of support. I have also attached the Market Economics Ltd paper that was mentioned during our meeting.
- The referral proposal 'notice'

Please do not hesitate to get in touch if you have any questions.

It would be appreciated if you could acknowledge receipt of this email.

Ngā mihi,
Steph

NOTICE: This communication and any attachments ("this message") may contain information which is privileged, confidential, proprietary or otherwise subject to restricted disclosure under applicable law. This message is for the sole use of the intended recipient(s). Any unauthorized use, disclosure, viewing, copying, alteration, dissemination or distribution of, or reliance on, this message is strictly prohibited. If you have received this message in error, or you are not an authorized or intended recipient, please notify the sender immediately by replying to this message, delete this message and all copies from your e-mail system and destroy any printed copies.

WAIMAKARIRI DISTRICT COUNCIL

SECTION 42A REPORT

FILE NO:	RC245076
DATE:	24 March 2025
REPORT TO:	Independent Hearings Panel
FROM:	Senior Resource Management Planner – Tim Johnston
SUBJECT:	Publicly notified land use consent application for the establishment of a landfill and associated quarrying at 150 Quarry Road, Whiterock.
ACTIVITY:	Waimakariri Operative District Plan – Discretionary Activity Waimakariri Proposed District Plan - Restricted Discretionary Activity
RECOMMENDATION:	Decline

INTRODUCTION

1. My name is Timothy Barrie Johnston, and I have prepared a Section 42A report for this resource consent application.

2. I am a Senior Resource Management Planner and employed by the Waimakariri District Council. I hold a Bachelor of Science in Geography and Environmental Management from Otago University.

3. I have had six years of resource management experience. I have prepared consent recommendations for a range of resource consents including land development projects, large residential developments, landfills, discharges to land, water and air, surface and groundwater takes and coastal permits.

4. This report is prepared under the provisions of section 42A of the Resource Management Act 1991 (RMA). This section allows a council officer, consultant or any other person commissioned by the consent authority to provide a report to the decision-maker on a resource consent application made to the Council and allows the Hearing Panel to consider the report at the hearing.

5. Section 41(4) of the RMA allows the Hearing Panel to request and receive, from any person who makes a report under section 42A "*any information or advice that is relevant and reasonably necessary to determine the application*".

6. This report will provide the Hearing Panel with information and advice related to:

    a) The background to the application;
    b) Details of the notification of the application and submissions received;
    c) An outline of the relevant legal and planning provisions;

d) An audit of the assessment of environmental effects provided by the applicant;
e) An assessment of Council policy relevant to the applications;
f) Recommendations in relation to the matters specified in section 104 and Part 2 of the RMA; and
g) Recommendations on the decision to be made by the Hearing Panel including comments on whether the application can be granted or should be refused; if the application is to be granted what measures are required to avoid, remedy or mitigate any adverse effects, and what monitoring could be undertaken.

7. This report draws on conclusions made in technical reports provided by a number of experts, each expert has prepared a report in accordance with Section 42A of the RMA, conclusions made in each report are referenced in this report. The following appendices attached to this report, include:

a) **Appendix 1**- Herpetology Section 42A report, prepared by Dr Mandy Tocher, LizardExpertNZ,(Note also attached to CRC Planning Report)

b) **Appendix 2**- Avifauna Section 42A report prepared by Hamish Dean, SLR Consulting, Hamish Dean

c) **Appendix 3**- Vegetation and Wetland Section 42A report, prepared by Dr Stephen Rate, SLR Consulting. ,(Note also attached to CRC Planning Report)

d) **Appendix 4**- Geotechnical Section 42A report, prepared by Clive Anderson, Tonkin + Taylor. (Note also attached to CRC Planning Report)

e) **Appendix 5**- Transportation Section 42A report prepared by Alan Gregory, Tonkin + Taylor,

f) **Appendix 6**- Landscape and Natural Character Section 42A report prepared by Naomi Crawford, Glasson Huxtable.

8. It should be emphasised that any conclusions reached, or recommendations made in this report are not binding on the Hearing Panel. It should not be assumed that the Hearing Panel will reach the same conclusion or decision having considered all the evidence to be brought before it by the applicant and submitters.

9. Following the initial, high-level review of the applicant's AEE by Waimakariri District Council staff and external experts, a request for further information (RFI) under Section 92(1) of the RMA was sent on 20 June 2024. A response to the RFI was received in late August and early September 2024.

10. The proposal, as amended by the RFI responses and further correspondence with the applicant, has been considered in this report.

11. I undertook a site visit on 30 June 2024, together with Regional Council staff, technical experts acting on behalf of the Wamakariri District Council (WDC) and Canterbury Regional Council (CRC), the applicant and the applicant's experts.

12. This resource consent application is being processed on a joint basis with CRC as resource consents are required from both Councils and the applications have been publicly notified. Accordingly, all resource consent applications will be considered concurrently by the Hearings Panel.

13. While this is not a hearing before the Environment Court, I can confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New

Zealand Practice Note 2023 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

APPLICANT

14. Protranz International Limited

PROPERTY LOCATION

15. 150, 154 ,174 176 Quarry Road, Loburn.

LEGAL DESCRIPTION

16. Lot 1 DP 388690, Lot 2 DP 497185, Lot 4 DP 755, Part 2 DP 755, Crown - Riverbed and Road Reserve

ZONING

17. Operative Waimakariri District Plan – Rural

18. Proposed Waimakariri District Plan – Rural General

DESCRIPTION OF PROPOSED ACTIVITY

19. Protranz International Limited (The Applicant) has applied for resource consent to continue existing quarrying operations and establish and operate a construction and demolition waste (C+D waste) landfill at 150 150, 154 ,174,176 Quarry Road (the site). The site is shown in Figure 1.

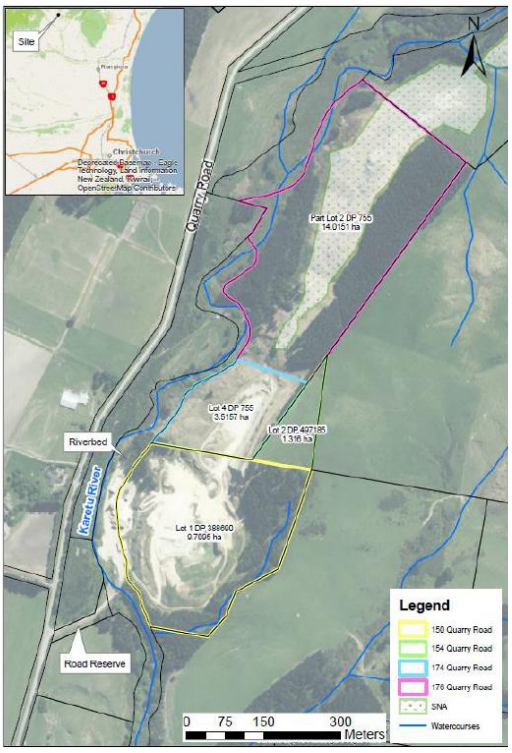


Figure 1 – Location of applicant's site

20. A detailed description of the proposal is provided in the AEE (pages 29 to 48). Further details, specifically on the landfill design and operation, are provided in the Landfill Engineering Report (Appendix 3 of the AEE), the Landfill Management Plan (Appendix 8 of the AEE) and the engineering drawings (Appendix 2 of the AEE). Proposed resource consent conditions were proffered in Appendix 10 of the AEE.

21. I adopt Ms Katie Nagy Canterbury Regional Council, s42A officer's report description.

22. The proposal includes the following:

    a) Earthworks and clearance within waterway margins

    b) General earthworks for information of a landfill

    c) Bridge structure within a waterway setback

    d) Increased rate of mineral extraction

    e) Operate a managed fill landfill

    f) Construction of outfall within a sites and Areas of Significance to Maori

    g) Earthworks and stockpiling associated with quarrying and landfill construction

23. The applicant has labelled the proposed landfill as a Class 3 Managed Landfill in accordance with the WasteMINZ Guidelines (2023), with the inclusion of inert and sorted construction and demolition (C&D) waste and other specific inert wastes including contaminated soils and asbestos.

24. I note that the proposal is more of a hybrid approach and should not be classified as a Class 3 Managed Landfill.

25. A liner design consistent with the Class 1 Landfill requirements is proposed for the site as shown in Figure 2 of this report.

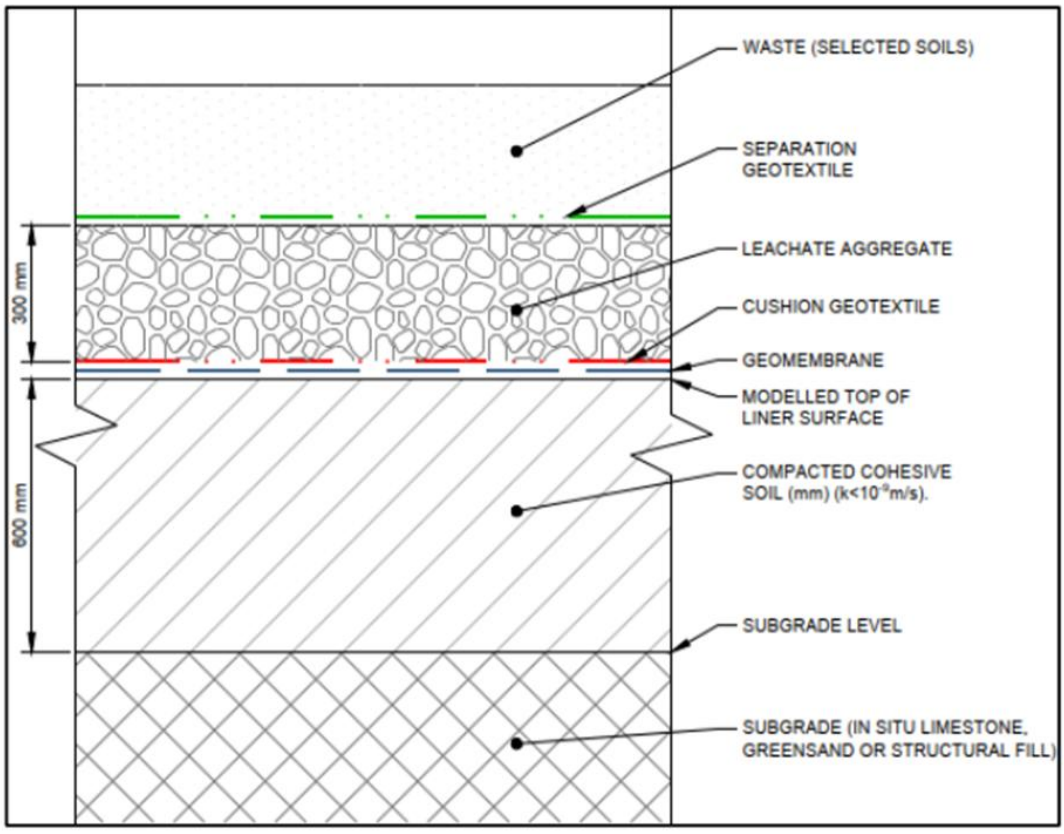


Figure 2: Landfill Liner Design

26. Leachate extraction will be designed to capture any mobilised contaminants.

27. The total airspace capacity of the landfill will be 500,000m^3 across a 4.0 ha waste placement footprint, with an average landfilling rate of 30,000 tonnes per year determined by demand. It is expected that the landfill will have a lifespan of approximately 20 years.

28. Prior to the commencement of the landfilling activity, a perimeter fence will be established around the landfill footprint. Fencing will be akin to a deer type fence and be constructed to a minimum 2.2 m in height and include security features that inhibit climbing or similarly restricts ease of access to the site.

29. Operating hours of the site will be restricted to 0700 to 1900 hours Monday to Saturday excluding public holidays.

30. Development of the landfill will occur in two stages in the existing quarry pit area. It is proposed to form a suitable floor and slopes.

31. Average vehicle movements per day associated with the operation of the combined lime quarrying and landfill activities are expected to be:

    a) 18 truck and trailer movements (9 vehicles)
    b) 6 service trucks (3 vehicles)
    c) 10 staff light vehicle movements (5 vehicles)
    d) 2 servicing light vehicle movements (1 vehicle).

32. The applicant has proposed fencing of the Significant Natural Area, riparian planting and wetland enhancement as per the below figure 3

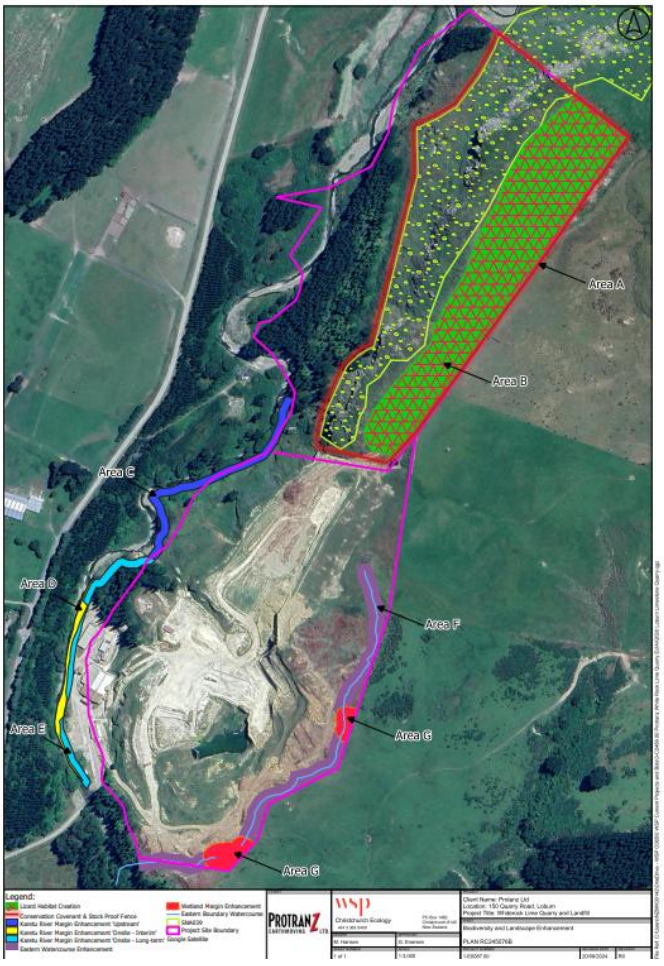


Figure 3;Applicant proposed ecological rehabilitation

Schedule 1

Column 1 Requirement by Consent Holder	Column 2 Applicable Area	Column 3 Objective to be achieved	Column 4 Timeframe
Conservation Covenant - *Register the area of land within 176 Quarry Road, Loburn (Part Lot 2 DP755) identified as "Area A" demarcated by the red boundary in **Plan RC245076C** as a conservation covenant with the Department of Conservation.*	A	➢ To provide additional enhancement opportunities and protection of naturally rare or distinctive ecosystems in perpetuity associated with SNA039 as identified and mapped in the Waimakariri District Plan. ➢ Provide a buffer protection area to the southeast of SNA039 in perpetuity which will provide additional protected areas for greater biodiversity enhancement.	Within 3 months of exercising the resource consent.
Stock Exclusion Fencing - *Install stock proof fencing around the perimeter of "Area A" demarcated by the red boundary in **Plan RC245076C.***	A	➢ Create a "habitat island" that support specialised plant communities and native fauna. ➢ Provide a safe refuge for relocated lizards and ongoing protection for the covenanted area from livestock. ➢ Provide clear on-ground identification of the conservation convent area.	Within 12 months of exercising the resource consent.
Lizard Habitat Creation - *Mass planting of suitable habitat (rank grass) for targeted lizard species within Area A identified in green and red hash in **Plan RC245076C.***	B	➢ Offset the loss of lizard habitat within the operational quarrying and landfill area. ➢ Provide an enhanced area of habitat for lizard species that fall within the geographical range of the site.	Within 12 months of exercising the resource consent.
Karetu River Margin Enhancement 'Upstream' - *Planting of a 10 m riparian margin in indigenous species on the true left bank identified as dark blue in **Plan RC245076C*** between NZTM50 BW23:5555-2179 and BW23:5536-2157. - *Undertake gradual removal of pest willow tree species as indigenous species mature.*	C	➢ General ecological and landscape enhancement. ➢ Improve the cultural health of the Karetu River and support Mahinga Kai opportunities. ➢ Indigenous riparian enhancement planting will replace gradually removed willow trees. ➢ Provide stabilisation of the banks of the Karetu River from erosion and scour. ➢ Provide habitat and a food resource for indigenous birds known on-site or that are present within proximity to the site.	Completed by the second planting season following exercising of the resource consent.
Karetu River Margin Enhancement 'Onsite-Interim' - *Planting of a riparian margin with an average width of 2-3 m with indigenous species where practicable along the true left bank identified as yellow in **Plan RC245076C** between NZTM50 BW23:5530-2155 and BW23:5528-2129.*	D	➢ Provide interim protection of the existing bund while the lower terrace is being actively used for limestone processing activities. ➢ Where a genuine conflict arises between the location of the site security fence and the requirement to achieve an average of 2-3m, the security of the site shall take precedence. ➢ The objective of the planting is to provide stabilisation of the bund and bank and achieve an ecological function at the low flow edge. The type of planting should reflect this objective and the potential need to undertake ongoing maintenance of the fence or bund (i.e., limit plantings to lower ground cover species).	Completed within the first planting season following the granting of resource consent.

Column 1 Requirement by Consent Holder	Column 2 Applicable Area	Column 3 Objective to be achieved	Column 4 Timeframe
Karetu River Margin Enhancement **'Onsite – Long-Term'** - *Planting of a 10 m riparian margin in indigenous species on the true left bank identified as dark blue in **Plan RC245076C** between NZTM50 BW23:5536-2157 and BW23:5528-2129.*	E	➢ Provide long term stabilisation of the banks of the Karetu River from erosion and scour. ➢ General ecological and landscape enhancement. ➢ Improve the cultural health of the Karetu River and support Mahinga Kai opportunities. ➢ Provide habitat and a food resource for indigenous birds known on-site or that are present within proximity to the site.	Completed within the first two planting seasons following the completion of limestone processing activities at the site.
Eastern Watercourse Enhancement - *Planting of a 10 m riparian margin in indigenous species on both margins identified as purple on **Plan RC245076C** between NZTM50 BW23:5563-2156 and NZTM50 BW23:5535-2120.* - *Where a 10 m margin cannot be achieved due to private property constraints, the planting shall cease at the legal boundary.*	F	➢ General ecological and landscape enhancement. ➢ Provide habitat and a food resource for indigenous birds known on-site or that are present within proximity to the site. ➢ Bank stabilisation through erosion and scour protection without compromising the flood carrying capacity. ➢ Enables complimentary lizard habitat to be naturally formed around riparian margins.	Completed by the third planting season following exercising of the resource consent.
Wetland Margin Enhancement - *Planting of a 10 m riparian margin of indigenous species.* - *Where a 10 m margin cannot be achieved due to private property constraints, the planting shall cease at the legal boundary.*	G	➢ General ecological and landscape enhancement. ➢ Improve the cultural health of the Karetu River and support Mahinga Kai opportunities. ➢ Provide habitat and a food resource for indigenous birds known on-site or that are present within proximity to the site.	
Stock Exclusion - *Install stock proof fencing to keep stock out of the eastern watercourse* -	F	➢ Erosion protection of the beds and banks of the waterway ➢ Protection of indigenous planting and associated habitats	Prior to plant-ing occuring

33. The applicant has provided a draft set of conditions in Appendix Y of the application.

SITE DESCRIPTION

34. A detailed description of the site is provided in the AEE. I also note the Canterbury Regional Council s42 A officer's report has provided a comprehensive description.

35. In summary:

a) The quarrying and landfill application site comprises an area across three adjoining properties being at 150, 154 and 174 Quarry Road, Loburn Canterbury as shown in Figure 1 and 4 of this report.



Figure 4: Existing Quarry Site

b) Existing quarry infrastructure at the site comprises a weighbridge (and building) adjacent to the site access with a site office to the northeast providing for onsite staff amenities. Further north are the main processing facilities including a furnace and rotary kiln, crusher, lime and urea silos, conveyor belt machinery and storage sheds for machinery and bunkers for coal storage. The coal storage area comprises two covered bunker stores.

c) The proposal lies within the rohe of Te Ngāi Tūāhuriri Rūnanga. The Karetu River is classed in the Proposed District Plan as a site of significance to iwi. The Karetu River SASM 028 is classified as a Nga Wai being a tributary to the Okuku River and which is identified as having Mahinga Kai environments, habitats and taonga species.

d) Three main lithological units exist within the quarry including the Tokama Siltstone, Whiterock Limestone, and Berrydale Greensand which are all part of the Motonau Group 5. The lithological units from youngest to oldest includes Loess, Kowai Formation, Tokama Siltstone, Whiterock Limestone and Berrydale Greensand.

e) The Significant Natural Area (SNA 039) as identified in the Proposed District Plan at 176 Quarry Road is owned by Protranz. SNA039 is known as the Whiterock Limestone Vegetation and described as containing indigenous grassland, shrubland and indigenous limestone rock outcrop vegetation. Notable flora on site includes at risk-declining species such as speargrass *(Aciphyllasubflabellata),* matagouri/tūmatakuru *(Discaria toumatou)* and New Zealand linen flax (*Linum monogynum).* It also contains threatened-nationally endangered species such as *Gingidia enysii var. enysii* and Weka Pass sun hebe *(Heliohebe maccaskillii),* kānuka *(Kunzea serotina)* (threatened-nationally vulnerable), and Waipara gentian *(Gentianella calcis subsp. waipara)* (threatened-nationally critical).

f) Two activities and or industries on the Ministry for the Environment Hazardous Activities and Industries List (HAIL) have been identified as occurring or have occurred within isolated areas of the site. These HAILs are A17 – Storage tanks

or drums for fuel, chemicals or liquid waste, associated with an Above Ground Storage Tank (AST) for diesel, and E3 – Cement or lime manufacture using a kiln including the storage of wastes from the manufacturing process.

g) Flood modelling for 1 in 200-year and 1 in 500-year flood events identifies the Karetu River, and the western part of the site, which includes the main accessway and buildings, as being within the High Hazard zone.

h) The site falls within the Oxford Ecological District (ED) of the Canterbury Foothills Ecological Region.

i) The site contains significant indigenous vegetation and fauna habitats, particularly for lizards (Canterbury grass skink, Waitaha gecko) and wetland plant species.

j) The site is not within an outstanding landscape area or within any of the sub areas, nor contains a prominent ridge.

k) There are two dwellings within 250 metres of the site both are located on the same property to the west of the site. I note these dwellings are within Hurunui District.

l) Quarry Road is not on a school bus or other bus route, the closest school being North Loburn School, about 8 km from the site located on Loburn Whiterock Road.

m) The Site is approximately 1.5km North of the intersection with Loburn Whiterock Road and Taaffes Glen Road

n) The accessway and quarry buildings are in Crown Land.

DISTRICT PLAN REQUIREMENTS

Operative Waimakariri District Plan

36. The application site is within a Rural zone. In assessing the proposed activity regard has first been given to the definitions in the District Plan and what definitions the activity would fall within. The following definitions are considered relevant:

Earthworks
Earthworks means the disturbance of land by excavating, placing or replacing soil or other material, and includes driveway and access construction, and land drainage works, but excludes earthworks involving:

a. cultivation for, or harvesting of agricultural and horticultural crops;

b. domestic gardening;

c. digging of postholes for the construction of fences;
d. works for research and monitoring such as coring, water bores and use of piezometers;

e. maintenance and enhancement of any wetland; or

f. ripping in of water pipes.

Landfill
Landfill means an area used for the disposal of solid waste into or onto the land other than a farm landfill.

Structure
Structure means any building, equipment, device, or other facility made by people and which is fixed to land; and includes any raft" (section 2 Resource Management Act 1991).

37. Following an analysis of the above it is considered that the proposed activity falls within the definition of being a landfill. This includes that all facilities ancillary to that activity such as internal roads, buildings and the transfer area are considered to also be part of a 'landfill'. The formation of the landfill, together with the establishment / building of transfer areas etc are also considered to constitute earthworks.

38. In addition, consideration has been given to whether the landfill would constitute a 'structure'. On the basis of the definition and that the landfill will be made by people, including careful construction via a series of cells, it is considered that the landfill could potentially also constitute a 'structure' but it is less clear whether a landfill could be considered to be 'fixed to land'. While uncertainty does exist as to whether the landfill would constitute a structure, a conservative approach has been taken and the landfill has been assessed as being a 'structure'. This ensures a comprehensive assessment of all relevant rules and avoids any later risk of it being identified that other rules might be applicable. It is anticipated this issue can be explored further, as part of later assessments, if considered necessary.

39. On the basis of the above, the various provisions of the District Plan have been assessed, and resource consent is required for the following reasons:

Chapter 23 Land and Water Margins	
Rule	**Comment**
23.1.1.3 There shall be no earthworks: a. within 20m of any river or lake; or b. within 50m of any wetland.	The proposal will undertake earthworks within 20 metres of the Karetu River. The earthworks include the earth bund, installing fencing, and constructing the bridge. Therefore, it does not comply with this rule.
23.1.1.4 There shall be no vegetation clearance: a. within 20m of any river or lake; or b. within 50m of any wetland	The proposal will undertake vegetation clearance within 20 metres of the Karetu River. The vegetation clearance is required to construct the earth bund, bridge and other erosion sediment controls required. Therefore, it does not comply with this rule.
23.1.1.8 Earthworks, including the extraction of minerals, in the Rural Zones, other than in the	The applicant has detailed that they assume the continuation of the quarrying activity and landfill construction activities will not be within the threshold of this rule.

bed of any river, shall not involve the disturbance of more than 1000m2 of soil and/or rock per any 1ha.	I agree with the applicant's assumption, therefore the proposal does not comply with this rule.
Rule 23.3.1 Any land use that does not comply with one or more of the conditions under Rules 23.1.1.1 to 23.1.1.6 is a discretionary activity (restricted), except where exempted by Rule 23.1.2.	As the proposal does not comply with Rule 23.1.1.4 and 23.1.1.4, earthworks and vegetation clearance within 20 metres of the Karetu River is a restricted discretionary activity.
23.3.2 Any land use involving earthworks, including the extraction of minerals, that does not comply with Rules 23.1.1.7 to 23.1.1.10 is a discretionary activity (restricted), except where exempted by Rule 23.1.2.	As the proposal does not comply with Rule 23.1.1.8, all earthworks are a restricted discretionary activity.
23.4.2 Landfills (excluding offal pits) and solid waste transfer stations are discretionary activities.	Under this rule landfilling is a discretionary activity.
Chapter 27 Natural Hazards	
Rule	**Comment**
27.1.1.2 Any structure shall be set back a minimum of 10m from the edge of the bed of any river, edge of any public drain, edge of any wetland, or the centreline of any stopbank, whichever is the further from the river or wetland, except where a different setback is provided for in Rule 27.1.1.1.	A new bridge structure will be within the 10m setback requirement. As there is no existing bridge, the exemption listed under 27.1.2.2 which applies to the replacement, maintenance and minor upgrading of an existing utility, does not apply. Therefore the proposed bridge does not comply with this rule is classified as a discretionary activity under Rule 27.2
27.2.2 Except as provided by Rules 27.3 or 27.4, or where exempted under Rule 27.1.2, any land use which does not comply with one or more of the conditions under Rule 27.1.1, is a discretionary activity (restricted).	

40. Overall, the proposal is considered to be a **discretionary activity** under the provisions of the Operative Waimakariri District Plan 2005.

Proposed Waimakariri District Plan

41. Consideration has been given to the applicability of the Proposed Waimakariri District Plan (PDP) which was publicly notified in September 2021. The hearings have been completed, but no decisions have been issued yet.

42. WDC has been granted a time extension for decisions to be released, until the end of June 2025. Therefore, the PDP provisions are subject to submissions and do not have legal effect yet. The only rules that have legal effect are those set out in Section 86B(3) and rules relating to subdivision and density in the General Rural Zone which were granted immediate legal effect status by the Environment Court.

43. The site is identified as being within the General Rural Zone. The applicant has undertaken an assessment of the relevant rules, which I have reviewed and delated the relevant rules to the proposal that have legal effect below.

SASM - Ngā whenua tapu o ngā iwi - Sites and Areas of Significance to Māori	
Rule	**Comment**
SASM-R4 **Earthworks and land disturbance associated with other activities** *This rule applies to Wāhi Tapu/Wāhi Taonga, Ngā Tūranga Tūpuna and Ngā Wai in SASM-SCHED1 except where SASM-R1 to SASM-R3 apply.* ***Activity status: PER*** *Where:* 1. *the earthworks and land disturbance is limited to:* a. *planting of trees;* b. *gardening;* c. *building foundations, septic tank and swimming pool installations where the combined volume of earthworks is 350m³ or less;* d. *freestanding sign foundations to a maximum depth of 200mm or to the depth already disturbed (whichever is the greater);* e. *drain and track maintenance;* f. *cultivation, stopbanks, roadworks and other activities*	The proposal breaches this rule as the applicant is proposing to undertake earthworks within SASM 028 for building a structure, being a bridge. The applicant is of the opinion that the bridge is a building and that the earthworks for "building foundations" are therefore a permitted activity. I note the definition of building is as follows: ***BUILDING*** *means a temporary or permanent movable or immovable physical construction that is:* *a) partially or fully roofed; and* *b) is fixed or located on or in land;* In my opinion the bridge is a structure but does not fall into the definition of a building as it is not roofed. Therefore, the earthworks related to the bridge do not meet any of the activities under SASM-R4. Therefore, the earthworks within the nga wai is a restricted discretionary activity.

	within land previously disturbed by previous earthworks to the depth already disturbed; *g. cultivation to a maximum depth of 200mm;* *h. a customer connection between a building, other structure, site, and infrastructure as per EI-R4; and* *i. the drilling of a well or bore.*	

44. Overall, the proposal is considered to be a **restricted discretionary activity** under the 'legal effect' provisions of the Proposed Waimakariri District Plan 2021.

Summary

45. Overall, the entire proposal is a **Discretionary activity** under the Operative District Plan. Under the Proposed District Plan, land use consent is only required for the earthworks for construction of the bridge, and this is a **Restricted Discretionary** activity.

46. Where more than one activity is proposed, and those activities are inextricably linked, best practice is that the activity statuses are bundled and the most restrictive activity status applies to the entire proposal.

47. In relation to the district council consents, I consider it is appropriate to bundle all activities together as a discretionary consent.

SUBMISSIONS

48. Submissions closed on 09 October 2024.

49. During late November 2024, the CRC became aware of issues with the online submission form on the CRC's website. Several submitters reported that submissions were not recorded, despite having received an automated email confirming receipt of the submission.

50. The applicant was advised of this issue on 11 December 2024. The week prior to Christmas, a notice was published on the CRC's website and the local papers used for the original notification, requesting that submitters notify their missing submission by the 31st January 2025 and requesting proof of the original confirmation email for late acceptance of the submission.

51. In total, 573 submissions were received. Of those, 24 were re-submissions. A summary of submissions is outlined below:

    a 510 submissions oppose the proposal in whole or in part;

    b 6 submissions indicated a neutral position in whole or in part;

    c 57 submissions support the proposal in whole or in part.

52. Of the submissions received, 89 indicated that they wish to be heard.

53. A full summary of submissions received is included in Appendix 3 of the CRC Officer Report.

54. The following is a list of the key issues raised by submitters that I will be addressing further in my report:

a) **Rural Amenity** – submissions focus on preserving rural character, scenic values, and minimising industrial impact, including that traffic noise and visual pollution reduce rural amenity.

b) **Cultural Matters** - submissions focus on water contamination, heritage protection, and land use conflicts. Te Rūnanga o Tūāhuriri specifically highlight the Karetu River's cultural significance. The submissions cite potential harm to Māori heritage and local communities.

c) **Traffic Matters -** 243 of the submissions raised concerns around the increase in heavy traffic, the routing of vehicles through the rural road network, increase in safety risk, maintenance liability for the local road network and concerns of increased traffic around North Loburn School.

d) **Terrestrial Ecology** - submissions focused on habitat destruction, re-homing concerns, and water contamination risks.

e) **Natural Hazards** - Concerns that the site is in an earthquake-prone area, risk of landfill containment failure, risk of flooding impacting landfill stability and leading to contaminated runoff, land stability and the potential for erosion to undermine the landfill structure.

f) **Recreation** - Submitters have raised concerns that the proposal will negatively affect walking, cycling, hiking, and horse riding in the area. Loss of access to public spaces and concerns that the landfill will limit access to popular recreational spots. Health and safety for recreational users, including risks from increased traffic, air pollution, and water contamination that could make the area unsafe for outdoor use.

55. In relation to water quality, aquatic ecology and air discharge matters, I defer to the reporting planner Ms Nagy's s42A report for CRC.

SECTION 104 OF THE RESOURCE MANAGEMENT ACT 1991

56. Under Section 104, when considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to–

(1) (a) any actual and potential effects on the environment of allowing the activity; and

(ab) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and

(b) any relevant provisions of—

(i) a national environmental standard:

(ii) other regulations:

(iii) a national policy statement:

(iv) a New Zealand coastal policy statement:

(v) a regional policy statement or proposed regional policy statement:

(vi) (vi) a plan or proposed plan; and

(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

(2) When forming an opinion for the purposes of subsection (1)(a), a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect.

57. All matters listed in s104(1) are subject to Part 2 of the Act which contains its purposes and principles

58. In addition, Section 104B of the Act relates to the determination of applications for discretionary activities. It states that after consideration of an application, a consent authority may grant or refuse the application and if granted, may impose conditions under section 108.

59. Section 104(1)(a) of the Act requires that the Council have regard to any actual and potential effects on the environment of allowing the activity. 'Effect' is defined in section 3 of the Act as including:

a) Any positive or adverse effect; and
b) Any temporary or permanent effect; and
c) Any past, present, or future effect; and
d) Any cumulative effect which arises over time or in combination with other effects– regardless of the scale, intensity, duration or frequency of the effect, and also includes –
e) Any potential effect of high probability; and
f) Any potential effect of low probability which has a high potential impact.

60. Section 104(2) of the RMA directs that the decision maker may disregard an adverse effect on the environment of an activity if a rule in the District Plan permits an activity with that effect, a concept known as the permitted baseline. The application of the permitted baseline is discretionary, and case law has established that the permitted baseline test relates to the effects of non-fanciful hypothetical activities which could be carried out as of right under the District Plan, as well as any existing lawfully established activity on the site. The existing environment also includes any activity for which resource consent has been granted.

61. Quarrying is a restricted discretionary activity in the Rural Zone and landfill is a discretionary activity. Therefore, there is no permitted activity or other activity of a similar scale that is permitted that could provide an appropriate baseline against which to consider the effects of the proposal.

ACTUAL OR POTENTIAL ENVIRONMENTAL EFFECTS

62. I have considered the matters raised in the application and further information requests. I also note that in assessing the actual and potential effects of the proposal, I have considered the following expert assessments:

63. The applicant's assessment of actual and potential effects (pages 69 to 93 of the AEE) which focuses on the following effects:

a Effects on water quality;

b Effects on water quantity;

c Effects on aquatic ecology;

d Effects on water users;

e Effects on terrestrial ecology;

f Effects on land stability;

g Effects from fire and flood hazards;

h Effects on air quality and human health;

i Effects of greenhouse gas emissions;

j Effects of transportation;

k Effects on Te Ngai Tūāhuriri Runanga values and use;

l Effects on landscape values;

m Effects on amenity and recreation values;

n Effects on wider community;

o Containment failure risks.

64. As a discretionary activity, the consent authority's discretion is unrestricted and all actual and potential effects of the activities must be considered.

65. Given the nature of the proposal, I consider that the following District matters provide for the principle actual or potential adverse effects to be considered:

a Effects on amenity and character (visual, landscape, nuisance).

b Effects on terrestrial ecology;

c Effects on land stability;

d Effects from fire and flood hazards;

e Effects of transportation;

f Effects on Te Ngai Tūāhuriri Runanga values and use;

g Positive effects

66. I have not provided an assessment of effects on groundwater, water quality, drinking water, stormwater management and landfill design, as these effects have been comprehensively considered by Ms Nagy.

67. In considering the potential effects of the proposal, I have turned my mind to the following potential or actual adverse environmental effects.

Rural Amenity and Character

68. The proposal will be located in the Rural Zone of the Operative District Plan and General Rural Zone of the Proposed District Plan. Therefore, it is important to understand the effects of this type of proposal on the amenity and character of the rural zone and local environment and whether the location is appropriate.

69. I do acknowledge that the quarry is existing, however the effects from the proposed activity should be understood together with the quarry activities and the landfill activity.

70. The anticipated effects on the rural landscape have been considered as part the Landscape Assessment lodged in support of the application (in the RFI response supplied by the Applicant). The Applicant's landscape expert from WSP provided an assessment of the current landscape value of the site, as set out in the Table below.

LEGAL SITE	DESCRIPTION	CURRENT LANDSCAPE VALUE
150 Quarry Road	Broadly characterised as an open lime quarry landscape on the upper portion of the site (quarry pit) with the associated quarrying and processing infrastructure on the lower terrace. Access to the site is via a gravel road from Quarry Road which crosses the Karetu River via a ford.	Very low
154 Quarry Road	Includes a triangular area above the quarry bench currently comprising pasture grass.	Low
174 Quarry Road	Comprises a benched hillslope area from previous lime extraction originally under lease, which has had quarry overburden spread to the west over time.	Very Low
176 Quarry Road	SNA. Whiterock Limestone Vegetation containing indigenous grassland, shrubland, and indigenous limestone rock outcrop vegetation.	Moderate

71. The applicant has assessed the visual amenity effects on the surrounding environment which is in table 6.1 of the landscape assessment in the RFI. In summary the Applicant has detailed:

"From properties on Quarry Road where the Proposal will not be visible, other landscape effects are considered including the increase in vehicle movements. Overall, the landscape effects during the operation of the Proposal will be at most low. At the conclusion of the Proposal, the effects will be very low. There will also be positive effects during and at the conclusion of the Proposal due to returning the proposal site to a landform to a landscape more in line with the former character, habitat enhancement in riparian areas, wetland areas and within the SNA and disestablishment of built form such as the buildings."

72. Ms Naomi Crawford on behalf of Council has undertaken an assessment of the visual and landscape values in Appendix 6 of this report. In summary:

a. *"The Application is adequately described, key aspects of the statutory context are discussed, the landscape context and character are covered appropriately, potentially effected neighbours are correctly identified, and an assessment of effects is undertaken using the TTatM prescribed 7-point scale. The assessment is supported by helpful graphics including site location maps, plans, character images, a viewpoint location map and supporting panoramas.*

b. *The Site is screened by topography to the north and east. The area is also visually contained by the hillscapes and roadside vegetation. Ms. Back assessed the effects of the Application on landscape values when viewed from ten locations. She determined that the visual effect on the residents of 144 and 179 Quarry Road will be* ***low*** *during the works and* ***very low*** *following disestablishment of the landfill (presumably adverse). Visual effects at all other locations were determined to be* ***very low****. I agree with the above findings. However, I would also include numbers 62 and 12 Quarry Road within the above property cluster. Number 62 Quarry Road (which is a dwelling located close to the roadside, plus a secondary dwelling immediately next door) was not accessed by Ms. Black as part of her LVA. This property is located closer to the quarry than some of the properties previously assessed. Again, the visual effect on the residents of this address are likely to be* ***low*** *due to the approximate 835 metre distance from the quarry.*

c. *Number 12 Quarry Road is also located next to the road but at a distance of 1.3km. Adverse visual effects are likely to be* ***very low****.*

d. *It is my understanding that the SNA will be avoided by the Application and will be protected by fencing it off from the rest of the Application Site. If appropriate, the Applicant may also like to consider further rehabilitation or enhancement of this area.*

e. *Submitters concerns in relation to landform centre around the modification of the river and the possibly of earthworks within the waterway. The Applicant has confirmed that there will be no central pier used in the new bridge crossing the Karetu River. However, further information is needed on the location of bunds and their locations and dimensions near the waterway. It is not clear whether the existing bunds beside the river are being utilised and stabilised. Without this information, it is difficult to quantity the effect of the Application on landform.*

f. *upon completion quarrying and then landfill activity, the site will be rehabilitated into a pastoral landuse, much like the surrounding hillscape. The addition of the aforementioned further planting areas and the rehabilitation of the disturbed areas of the site will result in long-term* ***entirely positive effects on landcover****."*

73. Ms Crawford agrees with the applicant in principle around visual amenity and rural landscape with recommendations made in Ms Crawfords s42 A report on the proposed conditions which I agree with and recommend the changes if the consent was to be granted.

74. Further, Rural Character is defined in the operative district plan under Objective 14.1.1. as:

a) *the dominant effect of paddocks, trees, natural features, and agricultural, pastoral or horticultural activities;*

b) *separation between dwellinghouses to maintain privacy and a sense of openness;*

c) *a dwellinghouse clustered with ancillary buildings and structures on the same site;*

d) *farm buildings and structures close to lot boundaries including roads;*

e) *generally quiet – but with some significant intermittent and/or seasonal noise from farming activities;*

f) *clean air – but with some significant short term and/or seasonal smells associated with farming activities; and*

g) *limited signage in the Rural Zone.*

75. The proposal is using an existing site that has been disturbed by quarrying and is extending the margin of the quarry activities slightly which as detailed by Ms Crawford will not have significant visual effects on the surrounding environment.

76. Noise from the site will predominantly consist of vehicle movements including the arrival and departure of delivery trucks and the operation of mule vehicles, but also the loading and unloading of vehicles both at the container terminal area and also at the dump face of the landfill.

77. Due to the scale of the site and surrounding area, it is not anticipated that noise will be of such a level as to be a nuisance, but noise is likely to be audible from the surrounding area such that persons will be aware of the operation of the activity. This can lead to impacts on a person's appreciation of the amenity and character of the area.

78. The applicant has provided a noise assessment (Appendix V) and detailed that the operational areas of the quarry and proposed landfill are at least 180 m from the nearest resident. Also, that the proposed haul road access will be approximately 150 – 160 m from the nearest residential dwelling, which again provides a substantial separation distance from a potential vibration source.

79. I concur with the applicant's noise assessment and consider that noise is sufficiently addressed and can be appropriately managed through the proposed hours of operation and number of truck movements.

80. The proposal will have limited signage, with one sign at the site entrance and internal signage for health and safety purposes.

81. I note that, due to the location of suitable rock formations and the nature of the activities, quarries and landfills are usually located in rural areas. Overall, I am of the opinion the proposal is best suited in the Rural Zone, is not out of character and the effects on rural character would be less then minor. In terms of amenity values including visual, noise from operations and traffic, I consider the effect to be minor.

Natural Character

82. The proposed site is directly adjacent to the Karetu River classified as a 'Significant Site to Māori' and adjacent to a Significant Natural Area. Therefore, the surrounding environment, in my opinion, has significant natural character values that need to be protected and enhanced.

83. The Applicant is proposing works within the margins of the Karetu River to construct a bridge, install a bund (which has been undertaken already) and riparian planting. In terms of the SNA, the applicant is proposing fencing and weed control methods within the SNA.

84. The Applicant's Landscape expert has assessed the natural character, and provided the following assessment:

"The current natural character is degraded with many years of quarrying operations altering the form of the hillside and natural concourse of the Karetu River (with the ford and berms). Effects on natural character resulting from the proposed landfilling are considerably diminished with the bulk of the Proposal occurring within the existing quarried space. The proposal includes positive effects such as:

a) The removal of the ford and the inclusion of a bridge structure, which will generate a short duration adverse effect but a permanent positive effect by returning to a natural rivercourse through removing vehicle movements through the waterway as well as removing the need for ongoing maintenance of the ford.
b) Removal of buildings and access tracks.
c) Indigenous riparian planting of the Karetu River, eastern watercourse and onsite wetland areas which will improve the riparian surrounds.
d) Return to a more natural landform, with vegetation (pasture grass) re-established in keeping with surrounding agricultural properties.
e) Fencing for protection and enhancement of the SNA, including increasing the suitability of the area for fauna such as lizards."

85. Ms Crawford has undertaken a **landscape** natural character assessment in her s42A report which in principle Ms Crawford agrees with the applicants assessment that the effects will be positive due the Karetu River being degraded.

86. In summary Ms Crawford has detailed the following:

*"The Application will result in **positive effects** on natural character due to:*

i. *Less disturbance to the riverbed due to traffic no longer moving through it.*
ii. *Additional riparian planting of the Karetu River, eastern watercourse and onsite wetland areas.*
iii. *Longterm removal of buildings and access tracks and a return of the land to pastoral grass (removing much of the existing quarry scar). "*

87. Ms. Crawford has provided recommendations including on conditions in Appendix 6 of this report. However, I am of the opinion the key recommendation is that prior to consent being(if) granted is for the applicant to provide a detailed landscape plan and cross sections.

88. I agree with Ms Crawford and the applicant that the rehabilitation of the river margins will be positive and begin to restore the natural character of the Karetu River.

89. However Natural Character involves the landscape features along with the freshwater ecosystems, water quality and Cultural Values.

90. Therefore, taking into account the cultural effects assessments and I defer to CRC technical experts and planning reports for wetlands, freshwater ecosystems and water quality.

91. I am of the opinion the natural character of the riparian margins landscape values is enhanced but other features of natural character are potentially adversely affected with the current form of the proposal.

Effects on Terrestrial Ecology.

92. The Applicant has undertaken an assessment of terrestrial ecology within the AEE and Appendix G being the Ecological Impact Assessment (EcIA).

93. SLR Consulting Ltd and LizardExpertNZ were engaged to review the assessment methodology presented by the applicant and audit the applicant's conclusions in relation to terrestrial effects expected to arise from the proposal. The s42A reports of Dr Mandy Tocher (herpetology) can be found in **Appendix 1** of this report.

94. Hamish Dean,SLR Consulting Ltd has addressed terrestrial ecology, including bats, birds and mammalian pests. The s42A report can be found in **Appendix 2** of this report.

95. Dr Stephen Rate, SLR Consulting Ltd was engaged to review the proposal's effects on vegetation and wetlands. The s42A report can be found in **Appendix 3** of this report.

Herpetofauna

96. The site contains lizards, Canterbury Grass Skink, and Waitaha geckos as detailed by Dr Tocher evidence in **Appendix 1** of this report.

97. In February 2025, the Applicant obtained a DOC permit to salvage and relocate lizards which was provided to the Council alongside the Lizard Management Plan.

98. Dr Mandy Tocher has undertaken a review of the applicants' assessment and lizard management plan which evaluates the effects on indigenous lizard populations and their habitats.

99. Dr Tocher has identified concerns about the lizard survey and effects assessment. In summary:

a) The survey was inadequate as it lacked a permit to handle lizards, leading to misidentification of species.
b) The extent of lizard habitats affected by quarry activities is underestimated.
c) The pre-mitigation effects assessment, which rated the impact as "negligible," is flawed.
d) The applicant referenced a Department of Conservation (DOC) salvage permit in the Application, but no valid permit existed at that time.
e) The DOC permit later issued (107310-FAU) is considered unlawful as it allows incidental harm to lizards, conflicting with recent case law.
f) Avoidance and remediation measures are insufficient.
g) Lizard salvage from 1.9 ha is planned, but the actual affected area may be much larger (~4.5 ha).
h) Proposed pest control and habitat enhancement actions are vague and may not adequately compensate for habitat loss.

100. Submissions raised concerns about the impact on lizards, questioning the effectiveness of the relocation plan and the underestimation of effects.

101. To better understand the effects on lizards, Dr Tocher recommends that the applicant fully identifies affected lizard species and estimated population. The LMP should be revised prior to consent being granted (if granted) to improve clarity on habitat and avoidance strategies, align with best practice principles for lizard salvage and relocation, and assess residual effects and apply compensation following the NSP-IB principles.

102. Further, I agree with Dr Tocher's following statement:

"that managing effects over indigenous lizard habitats are very clearly within the mandate of the RMA (1991) and its planning tools overseen by WDC and ECAN. This is especially so for significant fauna habitats occupied by grass skinks (and perhaps Waitaha gecko) that are addressed in the RMA as a Part II matter (Section 6c), and feature prominently in the NPS-IB."

103. I am of the opinion that requiring a survey and updating a lizard management plan after the consent being granted to address potential effects, is potentially not lawful.

104. This forms part of my opinion that the consent should not be granted until the decision makers are satisfied that all the critical and adverse effects are identified as detailed on the quality planning website[1] which states the following:

"It has become relatively common in these situations to either provide for subsequent management plans or some technical matter to be approved by a council representative after consent has been granted. However, this type of condition is not lawful because it leaves a decision to a subjective discretion.

Instead of requiring management plans conditions must provide clear performance or environmental standards that are to be certified by an appropriately qualified and experienced person as being achieved. This approach is appropriate for both simple and complex applications, with requirements responding to the issues to be addressed

[1] https://www.qualityplanning.org.nz/node/917

varying from being relatively minimal, to stringent and complex for complex developments.

Critical actual or potential adverse effects need to be identified, appropriately avoided, remedied or mitigated with conditions before a decision to grant is made and not left to be addressed via a future management plan. Management plans should be limited to non-critical operational processes that lie behind a performance or operational standard. For example, a certified Noise Management Plan could be used to complement noise limits specified by other conditions."

105. Overall, I am of the opinion there is uncertainty around the effects on lizards. At this stage I am of the opinion the proposal fails to meet RMA requirements for protecting indigenous fauna, and without stronger mitigation and compensation measures, significant residual effects on lizard populations are likely.

Avifauna

106. The applicant provided an assessment and detailed that:

"an existing low ecological value and a resultant negligible magnitude of effect on avifauna, a pre mitigated level of effect on avifauna is assessed as very low. Avifauna utilising the SNA to the north are not expected to experience any disturbance from proposed activities due to the distance from the project site.

Notwithstanding a very low level of effect on avifauna, bird management protocols will be incorporated into the overarching ecology management plan for the project. Protocols will include an Accidental Discovery Protocol (ADP) for all 'Threatened' and 'At Risk' species that could utilise vegetated habitats onsite during development. Example protocols will likely include site walkovers pre vegetation clearance"

107. Mr Hamish Dean's s42A report is attached in Appendix 2 of this report. Mr Dean has reviewed the applicants' sections in the EcIA relating to Avifauna.

108. Mr Dean is of the opinion the assessment of effects on avifauna were understated given that habitat for indigenous bird species is being destroyed and there is potential for nests. The assessment on kārearea (NZ Falcon) may be slightly understated because there is at least potential for a greater level of effect than has been assessed which is further discussed in Appendix 2 of this report.

109. Mr Dean on behalf of Council has undertaken a review of the applicant's assessment of Avifauna and concluded the following:

"I consider that the proposal is likely to have only a Low level of effect on avifauna with two exceptions:

a) Potential adverse effects on kārearea could be of a Moderate level and need to be managed;
b) Potential downstream adverse effects on threatened avifauna in the Okuku and Ashley/Rakahuri rivers resulting from contaminants entering the Karetu river need to be carefully considered."

110. Mr Dean has reviewed the submissions in relation to avifauna and has detailed the following:

"large number of submissions mentioned effects on birds or wildlife in general. These varied in the level of specificity but were generally relating to the following potential or perceived effects on birds:

a. Adverse effects on birds resulting from contaminants entering the environment via dust or discharge of leachate. This included concern about impacts on the bird habitats of the Ashley River downstream of the site;

b. *Disturbance of birds by increased levels of noise from traffic and other activity associated with the site;*

c. *Non-specific effects on flora and fauna from the activity as a whole; and*

d. *An increase in scavenger birds."*

111. Mr Dean has detailed that the only concern is around kārearea and no other bird species and that he is of the opinion that scavenger birds and rodents will not be an issue due to the type of waste.

112. Mr Dean has provided recommendations to ensure the effects on avifauna are mitigated, in particular on kārearea. Mr Dean recommended the following:

a) *"a suitably qualified and experienced ecologist to undertake a search for kārearea nests prior to any expansion of earthworks or vegetation clearance during their peak breeding season (September to March). If nests are found, the area should be avoided, and an appropriate buffer set up until the chicks have fledged.*
b) *The applicant's ecologist should be required to provide a brief report to the consenting authority on the findings of any such nest search and the management measures to be undertaken.*
c) *an advice note on compliance with the Wildlife Act 1953 should also be included.*
d) *Monitoring recommendations made by Ms Tiernan (CRC Expert), including the addition of PFAS/PFOS monitoring as a means of assessing potential risk on downstream avifauna*."

113. Overall, after reviewing Mr Dean's evidence and the Applicant's assessment, I consider the effects on Avifauna will be less than minor, as long as the recommendations by Mr Dean are adopted to ensure the kārearea are protected.

Wetland

114. I note the CRC Planning officer, Ms Nagy has comprehensively assessed effects on wetlands due to the National Environmental Standards for Freshwater being triggered, which is the responsibility of the Regional Council.

115. Therefore, the effects assessment is more suited to be undertaken by Ms Nagy.

Vegetation

116. The applicant has detailed that:

"the earthworks associated with landfill development and track widening is likely to result in the clearance of scattered exotic shrubs and some amenity plantings around the fringes of the existing excavated area equating to approximately 5 ha. Potential bund improvements, designed to manage flood risk associated with the Karetu River may also require the removal of a small number of exotic trees and shrubs."

Due to the minor shift away from the existing baseline condition of the site, the magnitude of effect is however low with changes arising from the loss or alteration of vegetation within the site being discernible. On closure of the landfill, the vegetation cover across the site will be substantially increased and well in excess of the 5-ha removed during the construction phase.

In combination with negligible baseline values, the increase in vegetation cover at project completion, the inclusion of stock fencing around the SNA and proposed enhancement planting around riparian margins with indigenous planting, the resultant effect on vegetation is considered positive with their being a net gain."

117. The site adjoins a Significant Natural Area which is known as the Whiterock Limestone Vegetation and described to contain indigenous grassland, shrubland and indigenous limestone rock outcrop vegetation

118. The Applicant reiterated in the RFI response that the proposal does not seek to undertake works within the SNA. However, as per the application a stock proof fence is proposed to protect the SNA area. In most part, this fence already exists but it is proposed to upgrade the fence to ensure it achieves the objective of stock proofing the SNA.

119. The evidence of Dr Stephen Rate is attached Appendix 3 of this report. Mr Rate has reviewed the applicants' sections in the EcIA relating to vegetation. Dr Rate focuses on potential impacts on terrestrial vegetation and wetlands. The report evaluates the applicant's assessment and mitigation proposals, and recommends further actions.

120. In summary, Dr Rate's evidence has highlighted:

a) *It was noted that the highest ecological values lie within the Significant Natural Area (SNA 039), which will not be directly affected in terms of vegetation.*
b) *The quarry operations will primarily impact exotic vegetation; significant indigenous vegetation is within the SNA.*
c) *The proposed mitigation (redirecting groundwater, planting native vegetation) is uncertain in effectiveness.*
d) *Some mitigation measures are appropriate (e.g., fencing riparian margins, hydroseeding, wetland plantings).*
e) *A Wetland Management Plan (WMP) should be developed to ensure no net loss of wetland function.*
f) *Additional weed control is necessary to manage impacts from fencing the SNA.*

The concerns of the submitter regarding potential adverse effects on terrestrial vegetation has been addressed by the applicant and Dr Rate's evidence in Appendix 3 of this report.

121. Overall, I am of the opinion the effects on terrestrial vegetation can be managed appropriately to ensure the effects are less than minor. I acknowledge that there remain issues around the wetland assessment, but I defer this to Ms Nagy, as she has completed a comprehensive assessment on wetlands.

Geotechnical effects

122. The Applicant provided a geotechnical assessment (Appendix E) and slope stability assessment (Appendix Q) as part of the application.

123. An assessment was undertaken by Tonkin and Taylor reviewing the applicant's AEE and submitter's concerns. The evidence of Mr Clive Anderson is attached in Appendix 4.

124. In summary Mr Anderson has detailed the following:

a) *Movement on the observed small-scale faults within the quarry is unlikely during the life of the landfill. There is no evidence of movement on these faults since the overlying loess soils were deposited following the end of the last ice- age about 12,000 years ago (Ref Appendix E Section 5.1.2). Therefore, a loss of contaminants caused by short fault rupture of any containment structure is unlikely during the life of the landfill.*

b) *The impact of the wedge failure mechanisms on the landfill design was queried during my initial review of the application. The applicant's response states that the wedge failures are "relatively uncommon", of "small volume and do not significantly affect the overall stability of the slopes. The wall liner detail can accommodate any small-scale wedge failures that occur following slope cutting". I observed these potential failure mechanisms during my site visit on 25 June 2024 and based on my geotechnical experience and engineering judgement I concur with the Applicant.*

c) *A further Section 92 question was in regard to the potential for existing landslides to move further and enter the quarry area. The reviewer agrees with the explanation provided by the applicant that this is considered a low risk as the slope between the existing landslide and the quarry is 'considerably flatter'.*

d) *The Applicant's proposed bench heights of 15 m max together with benches of 8m minimum width are endorsed from a stability and safety perspective.*

e) *the proposed landfill design is properly executed in the detailed design and then construction, then there is no geotechnical impediment to developing the proposed landfill. However, this conclusion is totally dependent on the proposed containment system being properly constructed. This is because the local geology and topography would not provide effective long-term containment of fugitive leachate.*

125. Overall, I consider that the risk of failure of the landfill in terms of geotechnical should be considered low but could still lead to a high impact consequence if failure was to occur, which could lead to significant regional effects as identified in Ms Nagy's report.

Effects of transportation

126. The anticipated effects resulting from traffic generation and effects on the network have been considered as part the Transport Assessment lodged in support of the application.

127. The proposed local transportation network consists of Loburn Whiterock Road which is approximately 14.5 km long and links Dixon Road (Arterial Road) with Quarry Road (Collector Road), passing through the villages of Loburn and North Loburn.

128. The application notes that the quarry and landfill operations will result:

"*on average 36 vehicle* movements *per day which equates to approximately 14% of the threshold that the operative district plan anticipates before consideration is given to a high trip generating activity. Based on the annual average daily traffic volumes for Quarry Road, the proposal is expected to result in an overall increase of 24% for vehicle movements on Quarry Road while on Loburn Whiterock Road an increase of 18% is expected"*

The Assessment of Effects prepared by WSP concludes the following: The proposed vehicle movements are also well below the proposed district plan thresholds.

On the basis of the activity generating a small fraction of the district plans high trip generating threshold and the minor increase in expected movements on the surrounding road network, traffic impacts on the network associated with the proposal are assessed as negligible."

129. I do note that the Applicant has undertaken an effects assessment based on the Operative District Plan's permitted activity rule of 250 vehicle movements per day and the Proposed District Plan's high traffic generation threshold for activity within a Rural Zone being:

a) Greater than 200 vehicle movements per day (average).
b) Greater than 50 heavy vehicle movements per day (average).

130. In my opinion, care should be undertaken when using the above numbers for an activity that is a discretionary activity. As I note, roads throughout the district vary in the ability to handle certain volumes of traffic movements and contain specific characteristics in the environment (e.g. schools nearby, high crash rates, traffic speeds, undersized roads) that need to be considered when consent is being sought for a new activity.

131. Mr Aaron Gregory from Tonkin and Taylor has provided evidence on behalf of Council. Mr Gregory s42A report is attached as Appendix 5 of this report.

132. Mr Gregory provides a more detailed analysis, however in summary, the key findings are as follows:

a) *the proposal has the effect of increasing the existing heavy vehicle movements on Quarry Road to 24, a net increase of 18 to 20 truck movements, or 10 trucks in each direction. This represents a 50% increase in average daily heavy vehicle movements on Quarry Road, or an overall increase in average daily traffic (ADT) of approximately 12%. As the total traffic is likely to remain between 150 and 200 vehicles per day, I do not consider this to be a significant change.*

b) *A Section 92 query was raised about the potential impact the proposed activity has on the existing high crash rate on the route to the site. The Applicant's response stated most of the crashes occurred at night and none involved heavy vehicles and concluded that as the proposed activity would generally result in traffic generated in day light that there was no reason to consider that there would be an identifiable increase in crashes resulting from the proposed activity. I agree with the Applicant's assessment of risk.*

c) *Whilst there are minor safety risks associated with this, there are likely to be ongoing maintenance liabilities for Council as continued overrunning will result in edge break on the seal of Quarry Road.*

d) *The sensitivity test carried out referred to in paragraph 30 above, examines the scenario of doubling the landfill volume and I anticipate that an infrequent intensification of daily traffic to 40 truck movements is unlikely to have a significant detrimental effect*

e) *the traffic generation through the proposed activity, being a lime quarry and landfill operation, will not present any significant detriment to the safety and efficiency of the existing transport network if the aforementioned changes to the conditions and mitigating measures are enacted.*

133. Mr Gregory addresses the 243 submissions related to traffic matters within his report. The main concerns raised by the submitters were increase in heavy traffic, increase in safety risk, increase in maintenance liability for the local road network and the routing of vehicles through the rural road networks, in particular past North Loburn School.

134. Mr Gregory is recommending the following*:*

1. Truck movements do not exceed 40 on any one day,
2. A condition should be included with the effect that the entrance to the site will be sealed to a sufficient width for a length of 20m to allow for two-way traffic.
3. Provide a W18-4 "trucks operating" sign in advance of the site entrance.
4. Carry out a baseline assessment of Loburn Whiterock Road and include an appropriate review and repair clause to the satisfaction of the road controlling authority.

135. I agree with Mr Gregory's recommendations, in particular changing the applicant's suggested condition from an average to a maximum of cars per day, as this will provide certainty of the transport effects.

136. Overall, after reviewing the Applicant's AEE, Mr Greogory's evidence and the concerns raised by the submitters, I am of the opinion that the effects on the transport network and user's safety will be less than minor.

Effects on Te Ngai Tūāhuriri Runanga values and use

137. The application details that the proposal lies within the rohe of Te Ngāi Tūāhuriri Rūnanga.

138. Th application site is not mapped as being a Runanga sensitive area, silent file area, statutory acknowledgement area or subject to any other Ngāi Tahu layers.

139. The Karetu River is identified in the Proposed District Plan (SASM028) as an area of significance to Māori as it is a tributary of the Ōkuku River, which is recognised as having mahinga kai environment, habitats and taonga species.

140. The applicant has provided an assessment of the proposal against the Mahaanui Iwi Management Plan 2013 (Mahaanui IMP) and the Ngāi Tahu Freshwater Policy (NTFWP) in section 10.9, and Appendix X of their AEE.

141. Actual and potential adverse effects on cultural values have been assessed in the applicant's application (see section 8.12 of the AEE). In summary, the Applicant states that:

1. *"It is acknowledged that the site, and Karetu River in particular, is an area of significance to Māori due to mahinga kai values, and habitat of taonga species.*
2. *The level of effects on cultural values is therefore stated to be strongly associated with effects on the Karetu River and its water quality, and consequently effects on mahinga kai.*
3. *The applicant references an attempt to engage with Te Ngāi Tūāhuriri Runanga, but in the absence of a response has deferred its assessment to the consents process".*

142. WDC sought advice on the potential effects of the proposed activity on cultural values from Mahaanui Kurataiao Limited.

143. A response was received, dated 23rd April 2024, which provides a position on behalf of Te Ngāi Tūāhuriri Rūnanga following presentation of the proposal to Kaitiaki representatives of the Rūnanga. The response includes an assessment of relevant objectives and policies and an outline of the values that are associated with the project site area.

144. In summary, "*Te Ngāi Tūāhuriri Rūnanga are opposed to the granting of this resource consent and consider themselves to be an adversely affected party due to the proximity of Karetu River, the impact on (and risk to) the cultural landscape, mahinga kai, taonga species and water quality."*

145. The Runanga has provided further comment via a submission. These are addressed in the next section.

Submission

146. Following notification of the proposal, Te Ngāi Tūāhuriri Rūnanga provided a submission outlining the following:

a) *The proposed site is located between both the Ōkūkū and Rakahuri rivers, both of these awa and their surrounding environment are of significant cultural value to Ngai Tūāhuriri.*
b) *This ongoing connection with the Rakahuri River, and its tributaries, continues into the modern day, where the Ngāi Tahu Claims Settlement Act 1998 provides for two customary fishing entitlement areas, being the Taerutu Reserve (schedule 113(b)) and Te Aka Aka Reserve (schedule 113(c)).*

147. Te Ngāi Tūāhuriri Rūnanga request that the application be declined and state that "*the potential for significant long-lasting harm to the cultural heritage and customary food gathering practices has not been avoided, remedied or mitigated.*

The Karetu River is a significant cultural landscape which would be adversely affected. The proposal is inappropriate at the head of the catchment and would diminish the mauri of the waterway.

The Applicant failed to engage with Ngai Tūāhuriri during the site selection process and has therefore failed to abide by industry best practice, represented by the WasteMINZ Guidelines (2023). Ngai Tūāhuriri Runanga were approached following site selection, at which stage the options for meaningful input were reduced to a level that are described as pointless.

Overall, the proposal:

i *poses an unacceptable risk of contaminant discharge;*

ii *has an unacceptable cumulative impact on the lower wetland;*

iii *creates an unacceptable construction phase impact on the river and biota;*

iv *uses an unacceptable assessment of the magnitude of effects;*

v *fails to provide relevant information; and*

vi *suffers from a lack of clarity about the degree of impact from the current unmitigated impacts on the receiving environment."*

Summary

148. Based on the submission by mana whenua, who are the cultural experts, I consider that there is a potential for significant effects on mana whenua from the proposal as currently sought.

149. If consent is to be granted, it is my opinion that conditions around ongoing consultation with mana whenua are strongly recommended alongside management plans that integrate cultural values.

150. Based on the feedback from MKL and the assessment of effects above, I have also undertaken a review of the IMP and commented on the relevant policies. This is set out below in the other matters section of this report.

Fire & Natural Hazards

151. It is understood that landfills can be more vulnerable to the risk of fire. Active on-site management is required to reduce any potential risk. The Applicant has detailed a combination of measures to manage this risk including:

- The lack of putrescible material.
- Permanent presence of large earth moving machinery that can be quickly utilised to address any fire.
- For fires occurring outside of the landfill footprint such as within buildings on the lower terrace of the site, adequate onsite storage and couplings for the delivery of water for firefighting purposes will be available.
- Fire Emergency Management Plan

152. Generally, it is considered that the risk of fire can be controlled through the use of conditions and management plans such that potential effects can be reduced but given the risk associated with fire and the potential impacts if a fire was to occur, careful management of this issue is required

153. With regards to risk from natural hazards, it is considered that the position of the landfill potentially reduces some risks, such as flooding but heightens other risks such as slippage due to a seismic event. This matter, including the design of the landfill, its' containment and structural design are matters that need to be considered in assessing the potential effects of the proposal. I do note that Ms Nagy and the CRC Landfill Engineer have provided a comprehensive assessment of natural hazard effects relating to the landfill design. Therefore, the outcome of their assessment will determine if there are potential effects on the proposal from natural hazards and likewise whether the proposal will exacerbate any natural hazard risks.

Crown Land

154. The proposal includes existing structures, bunds, riparian planting, a bridge, access to the site and other ancillary activities to the quarry and landfill, which are located within Crown Land, being the land adjacent to the Karetu River which is administered by LINZ.

155. I am not aware of any formal agreement between the Crown and the applicant. There is no evidence that the applicant has landowner approval. The applicant considers that land ownership is not an RMA function. However, the encroachment of these ancillary activities associated with the quarry and landfill onto riparian land has the potential to affect the Karetu River.

156. As discussed in this report, the technical expert and CRC planning officer's reports consider there is potential for adverse effects. Consequently, in my opinion, the location of the ancillary activities on Crown Land is relevant in considering the application. Mitigation measures could include moving some of these activities away from the river and rehabilitating the land.

Public Access

157. The proposal includes access to the quarry via Crown Road reserve, from Quarry Road to the Karetu River, and Crown riverbed.

158. The applicant currently has a security fence, gate and camera located on the Crown Road Reserve which restricts access to the site. This also restricts access to the Karetu River. The public are entitled to use the road reserve to access the Karetu River, as I am not aware of the applicant having any formal agreement restricting public use.

159. Further, it is recognised in the applicant's AEE that there are no obvious public access points (paper roads etc) to the Karetu River immediately downstream of the site other than the Loburn Whiterock Road bridge which is 2 km downstream. Public access is available to the Karetu River where its confluence meets the Grey River approximately 6 km from the site, off Loburn Whiterock Road.

160. For access to the site for the landfill operation, the applicant is proposing that a new 23m single span bridge will be constructed across the Karetu River, to replace the existing ford crossing.

161. The current security gate (which is potentially unlawful) will remain in the same location, in the Crown Land and will continue to prevent public access to the Karetu River. It is noted that if public access was available to the river in this location, the intensification of truck movements and cautionary signs about contaminated waste would be likely to deter people from using the access.

162. Therefore, I am of the opinion the proposal creates adverse effects on public access to the Karetu River due to the restrictions in place, and the further intensification of activity on the site.

163. I recommend the applicant either move the security gates to the proposed bridge, or provide a new public access point to the Karetu River in another location that avoids the waste disposal heavy vehicles.

Site Rehabilitation, Liability and Long-Term Management

164. The applicant proposes capping the landfill post-closure to restrict rainfall infiltration into the landfill. The final landform will be revegetated to support final land uses such as light grazing or natural state vegetation as shown in figure 3 of this report.



Figure 3: Applicants proposed remediation – Current (left) and Rehabilitated (right)

165. The rehabilitation of the site will have a significant impact on the scale of effects from the proposed activity. These effects are also relevant in the long-term management of the site, including when the landfill has ceased operation. For example, the liner of the landfill has a specified life, and it needs to be determined whether there is the potential for environmental impacts beyond this period.

166. As part of any long-term management of the site, and ongoing maintenance and rehabilitation, the applicant needs to detail how these issues will be addressed including any questions as to the legal arrangements for the site, how the area will be maintained and monitored after the closure of the landfill and what mechanisms will be in place for long term responsibility of the landfill. These details need to be addressed before it can be determined that any long-term effects from the proposal can be adequately managed.

167. In assessing the potential effects of the proposal, it is recognised that the landfill will be operational for a long period of time and once completed, the landfill site will continue to need to be actively managed. Submitters have expressed concerns regarding the long-term management of the site and also responsibility for the site both during and after the landfill activity has been completed.

168. The applicant has proposed a bond, and a Landfill Closure and Aftercare Plan will be prepared within 5 years of landfilling commencing and updated every 5 years thereafter. This is to detail the activities required for closure of the landfill and during the aftercare period.

169. Key activities required for closure and aftercare include:

- Removal of facilities not required during the landfill aftercare period (Closure): Site office and weigh bridge, lime processing plant, kiln, maintenance workshops and bulk storage sheds

- Removal of any erosion and sediment control and stormwater facilities no longer required.

170. Aftercare activities:

- Maintenance of the landfill access roads remaining post closure

- Ongoing maintenance of the leachate removal and collection system and removal of leachate long term

- Ongoing operation and maintenance of the groundwater drainage system

- Maintenance of the landfill cap, including filling any areas that may have been subject to differential settlement, repair of any surface erosion

- Ongoing environmental monitoring and reporting as required by consents and responding to contingent events.

171. While the Applicant has acknowledged the aftercare requirements, a more detailed consideration of the proposal is required through the resource consent process, and significant measures can be implemented. There does remain a risk that an unforeseen event may occur, and consequently necessary measures need to be put in place to manage this risk.

172. Further, as the landfill is a long-term proposal, further consideration should be in place around ecological values, landscape values, natural character and cultural values within the aftercare and closure plan. In addition, I note Dr Massey from CRC has recommended a longer minimum aftercare period. Whether this is feasible or not, it should be strongly considered if consent is granted, as land use consents are forever attached to the land unless a duration is formally conditioned.

173. On this basis, it is considered that the Applicant needs to provide a comprehensive plan, supported by financial measures, to adequately address any unforeseen events.

Positive effects

174. The Applicant considers there to be some positive effects with respect to terrestrial ecology, landscape values and the wider community, including:

a) A contribution to the longevity of Kate Valley landfill, by diverting inert construction and demolition waste to an alternative deposition site;
b) A reduction of cost for depositors, particularly for contaminated soils, with will provide a roll-on effect and economic benefit to end users;
c) A reduction of roadside and riverbank dumping by providing competitive pricing for deposition of material;
d) Reduction in greenhouse gas emissions due to shorter cartage distances from waste source.

175. Several Submitters were in support of the proposal for the following reasons:

a) **Economic Benefits:** The project is seen as beneficial for the local economy and the construction industry, providing employment opportunities and supporting business growth.
b) **Efficient Waste Management:** Supporters emphasize the need for additional managed fill facilities in the Canterbury region, especially with existing landfills nearing capacity. This project would help manage construction and demolition waste effectively.
c) **Cost-Effective Solution:** The landfill offers a cost-effective option for disposing of waste, reducing illegal dumping and avoiding the overuse of higher-class landfills like Kate Valley.
d) **Reduced Environmental Impact:** By providing a dedicated facility for inert waste, the project minimizes the risk of inappropriate waste disposal, leading to better environmental outcomes.

e) **Support for the Construction Industry:** The landfill supports the ongoing development in the region by providing a reliable disposal option for construction materials.

176. I do agree with the Applicant and Submitters in support that the proposed purpose-built deposition site for soil and inert construction and demolition waste materials, in principle, could provide benefit for the industry. However, careful consideration around site selection is required to ensure the positive effects outweigh the negatives.

Effects Conclusion

177. Overall, the above assessment considers various aspects, including:

a) **Terrestrial Ecology:** The site hosts significant indigenous flora and fauna, including lizards. The lizard management plan was criticized for being insufficient, potentially affecting species like the Canterbury grass skink and Waitaha gecko.
b) **Land Stability:** The geotechnical assessment found the risk of significant land instability to be low. However, potential risks from earthquakes and flooding exist.
c) **Transportation:** Increased heavy vehicle traffic could impact local road safety, especially near North Loburn School. Recommendations include traffic limits and speed restrictions.
d) **Cultural Impact:** Te Ngāi Tūāhuriri Rūnanga strongly opposes the project due to its proximity to the culturally significant Karetu River. Concerns include contamination, loss of mahinga kai (food gathering areas), and diminished cultural values.
e) **Access Impact:** Potential restrictions on access to the Karetu River and risks from increased traffic.

f) **Amenity and Character:** Not out of character for a rural zone and is efficient use of land by using an existing quarry site. However potential loss of amenity relating to cultural and community perception of pleasantness.

g) **Natural Character-** The river margins and landform will be rehabilitated therefore rehabilitating part of the natural character. However, I note that cultural, wetlands, freshwater ecosystems and water quality will be impacted by this proposal which also makes up natural character.

h) **Positive effects:** the proposal will be a purpose-built deposition site for soil and inert construction and demolition waste materials which, in principle, could provide benefit for the industry.

178. Other matters such as water quality, wetlands, landfill design, air quality and human health, I defer to Ms Nagy's S42A officer report as these are matters best addressed by CRC experts and within the jurisdiction of CRC.

179. Overall, I am of the opinion the proposal will have adverse effects that are more than minor on cultural values and terrestrial ecology, in particular on lizards.

Relevant Statutory Provisions (Section 104(1)(b))

180. Section 104(1)(b) requires the decision maker to have regard to the relevant provisions of the following documents:

a A national environmental standard;

b Other regulations;

c A national policy statement;

d A New Zealand coastal policy statement;

e A regional policy statement or proposed regional policy statement;

f A plan or proposed plan.

181. Of relevance to this application are the following documents and provisions:

a National Policy Statement for Indigenous Biodiversity (2023)

b Canterbury Regional Policy Statement

c Operative Waimakariri District Plan

d Proposed Waimakariri District Plan

National Policy Statement for Highly Productive Land

182. The NPS-HPL came into force in October 2022. Clause 3.5(1) requires that regional councils must map the highly productive land in their region, being most Class 1-3 land. Until that work is done, Clause 3.5(7) specifies that highly productive land is all Class 1-3 land as mapped by the NZ Land Resource Inventory (NZLRI). Using the NZLRI, the site is Class 4 land and therefore is not highly productive land. As a result, the NPS-HPL does not apply to the site.

183. **National Policy Statement for Indigenous Biodiversity 2023 (NPS-IB)**

184. The NPS-IB came into force on the 4th August 2023. It is applicable to the management of indigenous biodiversity in the terrestrial environment of Aotearoa New Zealand and prioritises its mauri and intrinsic value. This recognises that the health and wellbeing of people and communities is dependent on the health and wellbeing of indigenous biodiversity and that people have a responsibility to care for it in return.

185. The Canterbury Regional Policy Statement (CRPS) 2013 (revised 2017) made territorial authorities:

"solely responsible for specifying the objectives, policies and methods for the control of the use of land for the maintenance of indigenous biodiversity on all land outside of wetlands, the coastal marine area, and beds of lakes and rivers"

186. While this new national policy direction must be "given effect to" through the future development of regional policy statements, regional plans, and district plans, consent decision-makers must "have regard to" the relevant provisions of the NPS-IB as soon as it took effect on 4 August 2023.

187. This means that, where activities requiring consent under a District Plan/s would have effects on terrestrial indigenous biodiversity, and those effects are within the discretion of consent decision makers, the policy direction of the NPS-IB is relevant to those decisions, needs to be 'weighed' against other matters in Section 104 of the RMA and carries significant weight (as it post-dates the CRPS and all WDC plans).

188. The sole objective of the NPS-IB is:

"*The objective of this National Policy Statement is:*

a. to maintain indigenous biodiversity across Aotearoa New Zealand so that there is at least no overall loss in indigenous biodiversity after the commencement date; and

b. to achieve this:

i. through recognising the mana of tangata whenua as kaitiaki of indigenous biodiversity; and

ii.by recognising people and communities, including landowners, as stewards of indigenous biodiversity; and

iii.by protecting and restoring indigenous biodiversity as necessary to achieve the overall maintenance of indigenous biodiversity; and

iv. while providing for the social, economic, and cultural wellbeing of people and communities now and in the future."

189. This is informed by 17 general policies which provide direction on how this objective is to be met. I have provided an assessment of the policies I consider relevant below:

Assessment of the NPS-IB	
Policy	**Comment**
Policy 1: Indigenous biodiversity is managed in a way that gives effect to the decision-making principles[2] and takes into account the principles of the Treaty of Waitangi.	In my opinion, the proposal does not align with Policy 1 of the NPS-IB, as it does not ensure meaningful consultation, active participation of tangata whenua, or integration of Māori values into decision-making. The concerns raised by Te Ngāi Tūāhuriri Rūnanga further reinforce that the principles of the Treaty of Waitangi have not been adequately considered. If consent was to be granted, I would strongly recommend that the applicant continue to seek participation from Te Ngāi Tūāhuriri Rūnanga.
Policy 2: Tangata whenua exercise kaitiakitanga for indigenous biodiversity in their rohe, including through: ` *a. managing indigenous biodiversity on their land; and* *b. identifying and protecting indigenous species, populations and ecosystems that are taonga; and* *c. actively participating in other decision-making about indigenous biodiversity.*	Although Iwi have participated via a submission, I am of the opinion the proposal is inconsistent with Policy 2 as iwi will have no further opportunity for active participation in decision making about indigenous biodiversity. If the application is granted, I recommend that further consultation is undertaken with iwi to allow for active participation in the management of the Karetu River and the indigenous biodiversity affected by this proposal.

[2] Consistent with this, the decision-making principles that must inform the implementation of this National Policy Statement are as follows: (a) prioritise the mauri, intrinsic value and wellbeing of indigenous biodiversity: (b) take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi): (c) recognise the bond between tangata whenua and indigenous biodiversity based on whakapapa relationships: (d) recognise the obligation and responsibility of care that tangata whenua have as kaitiaki of indigenous biodiversity: (e) recognise the role of people and communities (including landowners) as stewards of indigenous biodiversity: (f) enable the application of te ao Māori and mātauranga Māori: (g) form strong and effective partnerships with tangata whenua.

Policy 3: A precautionary approach is adopted when considering adverse effects on indigenous biodiversity.	The precautionary approach requires avoiding adverse effects where possible and fully understanding risks before approving activities. Given the uncertainties in wetland impacts, lizard habitat effects, and long-term contamination risks, I am of the opinion the proposal is inconsistent with this policy.
Policy 8: The importance of maintaining indigenous biodiversity outside SNAs is recognised and provided for.	The proposal acknowledges the importance of indigenous biodiversity outside SNAs through proposed riparian planting but lacks immediate protective measures. While long-term vegetation cover may improve, short-term biodiversity losses are not fully mitigated, meaning the proposal is inconsistent with Policy 8.
Policy 13: Restoration of indigenous biodiversity is promoted and provided for.	The proposal does not meet Policy 13 because it lacks short-term restoration efforts, delays meaningful restoration for decades, and mischaracterizes remediation as restoration. While some long-term restoration is proposed, the uncertainty around implementation and effectiveness raises concerns.
Policy 15: Areas outside SNAs that support specified highly mobile fauna are identified and managed to maintain their populations across their natural range, and information and awareness of highly mobile fauna is improved.	The proposed site contains one highly mobile fauna being the Karearea. As long as the recommendations from Mr Dean are adopted, I am of the opinion the effects would be less then minor on the Karearea. Therefore, the proposal is consistent with this policy to ensure the population are managed and the awareness of the Karearea is improved. In addition to Mr Dean's recommendation of surveying the site for nesting prior to works, I would recommend a survey of the site and surrounding area over time to continue to provide further information and awareness of the Karearea. For completeness, I note lizards are not classed as highly mobile fauna under the NPS-IB.

190. In my opinion, I consider the proposal is inconsistent with the NPS-IB, particularly with the polices related to tangata whenua participation, precautionary biodiversity management, and restoration efforts. While I acknowledge the proposal does include riparian planting, the lack of immediate protections, incomplete assessments, and reliance on future mitigation results in the application being inconsistent with the NPS-IB.

191. Recommendations for alignment with NPS-IB:

a) Engage with tangata whenua to incorporate their role in decision-making and site management.

b) Adopt a stronger precautionary approach by avoiding biodiversity loss rather than relying on mitigation.

c) Ensure immediate protections for biodiversity outside SNAs.

d) Improve monitoring and reporting on highly mobile fauna and wetland restoration efforts.

e) Strengthen indigenous planting plans with clear weed management and survival rate targets.

Canterbury Regional Policy Statement

192. The Canterbury Regional Policy Statement (RPS) became operative on 15 January 2013 and provides an overview of the significant resource management issues facing the Canterbury Region, including issues of resource management and Ngāi Tahu.

193. An assessment of the objectives and policies which are considered relevant to the proposed activity are detailed below:

<table>
<tr><td colspan="2">Assessment of the CRPS</td></tr>
<tr><td colspan="2">Chapter 9 Ecosystems and Biodiversity</td></tr>
<tr><td>Objective 9.2.1:

Halting the decline of Canterbury’s ecosystems and indigenous biodiversity</td><td rowspan="2">In my opinion the proposal does not meet Objective 9.2.1, as it contributes to the decline of indigenous biodiversity in Canterbury through habitat loss and uncertain mitigation and offsetting. Addressing these gaps would require further survey work, stronger precautionary measures, and habitat restoration.</td></tr>
<tr><td>Objective 9.2.3:

Protection of significant indigenous vegetation and habitats.</td></tr>
<tr><td>Objective 9.3.4:

Promote ecological enhancement and restoration To promote the enhancement and restoration of Canterbury’s ecosystems and indigenous biodiversity, in appropriate locations, where this will improve the functioning and long term sustainability of these ecosystems.</td><td>In my opinion, the proposal does not fully align with Objective 9.3.4 because it focuses on mitigation rather than proactive restoration, and its long-term ecological success is uncertain. While riparian planting and habitat restoration are positive steps, delayed implementation and lack of robust management plans reduce the effectiveness of the proposal in promoting ecosystem sustainability.</td></tr>
<tr><td colspan="2">Chapter 11 Natural Hazards</td></tr>
<tr><td>Objective 11.2.1: Avoid new subdivision, use and development of land that increases risks associated with natural hazards.</td><td>As discussed in the applicant’s assessment and above in my report, the proposal will not increase the risk associated with flooding nor exacerbate the flood risk beyond the application site.

The proposed bridge will be designed in accordance with the Engineering Code of Practice and meet the permitted standards of CRC rules around design standards.

Therefore, I consider the proposal to be consistent with the Natural Hazards chapter.</td></tr>
<tr><td>Chapter 12 Landscape</td><td></td></tr>
</table>

Objective 12.2.2 Identification and management of other landscapes The identification and management of other important landscapes that are not outstanding natural landscapes. Other important landscapes may include: 1. natural character 2. amenity 3. historic and cultural heritage	The applicant is proposing riparian planting to rehabilitate the natural character in terms of landscape values. I acknowledge this is a positive. However, I am still of the opinion the proposal is inconsistent with this objective, as the applicant has not sufficiently managed the cultural aspects of the landscape appropriately as per the submission. I note there are also concerns around the potential impacts on wetlands and water quality from the proposal. However, I defer to CRC, as the experts.
Chapter 13 - Heritage	
Objective 13.2.2 Historic cultural and historic heritage landscapes Recognition that cultural and heritage values are often expressed in a landscape setting and to make provision for the protection of such landscapes from inappropriate subdivision, use and development.	In my opinion, the proposal is inconsistent with Objective 13.2.2, as it threatens a cultural heritage landscape, lacks tangata whenua involvement, and does not include strong protection measures. Without clearer recognition of cultural protection and active engagement with mana whenua, the proposal should provide clearer recognition of cultural protection and active management with mana whenua. I recommend if the consent was granted, mana whenua are provided the opportunity to have ongoing input in the project throughout its lifespan.
Objective 13.3.2 Recognise places of cultural heritage significance to Ngāi Tahu To recognise places of historic and cultural heritage significance to Ngāi Tahu and protect their relationship and culture and traditions with these places from the adverse effects of inappropriate subdivision, use and development.	

Summary

194. Overall, I consider the proposal is inconsistent with the CRPS as the proposal creates tension with the objectives and polices relevant to terrestrial ecology, landscape values and Maori values.

<u>Operative Waimakariri District Plan</u>

195. The objectives and policies of the Waimakariri District Plan that I consider relevant are set out in the following table. In reviewing these provisions, I have also considered the applicant's assessment of these matters, and I have stated where I agree with the Applicant's assessment.

Operative Waimakariri District Plan (2005)	
Chapter 2- Maori	
Objective 2.1.1 Effective and appropriate processes and practices that acknowledge the status of tangata whenua as treaty partner and take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).	The applicant has undertaken an assessment of the iwi management plan and assessed cultural values. However, did not consult iwi directly prior to the site being selected. During the consenting process and submission period Tangata Whenua has provided advice on the proposal. As detailed in this report above, Iwi do not support the proposal due to the proximity of the
Policy 2.1.1.1 In identifying tangata whenua, Te Runanga o Ngai Tahu is recognised as the iwi authority and Te Ngai Tuahuriri as manawhenua.	

	Karetu River, the impact on (and risk to) the cultural landscape, mahinga kai, taonga species and water quality." I note that although the proposal over time may be acceptable to western science, but there still will remain the issue of the cultural landscape and spiritual aspects to the water quality and taonga species that may not be recognised. If consent is to be granted, I strongly recommend that ongoing consultation is provided as a requirement in the consent conditions, to ensure iwi have the chance to provide their expertise and input in the management of the landfill over its lifetime, to ensure manawhenua and kaitiakitanga is recognised throughout the life span of the proposed landfill and the closure and after care. I am of the opinion the proposal is contrary to the objectives and policies of the Maori chapter.
Policy 2.1.1.2 Provide for the participation of tangata whenua in the management of the District's natural and physical resources.	
Objective 2.1.2 Recognition and provision for the manawhenua concept and practice of kaitiakitanga in the management of natural and physical resources.	
Policy 2.1.2.1 To have particular regard to manawhenua and spiritual kaitiakitanga in the management of natural and physical resources.	
Objective 2.1.3 Recognition and protection of wahi taonga that is culturally, spiritually and/or physically important to Ngai Tuahuriri.	
Policy 2.1.3.2 Avoid, remedy or mitigate adverse effects on the cultural and traditional values associated with wahi taonga identified in this District Plan.	
Objective 2.1.4 Recognition of the importance of mahinga kai to Ngai Tuahuriri and provision for protection of associated resources and access to them	
Policy 2.1.4.1 Enable the enhancement of mahinga kai and surrounding taonga, consistent with the principles of kaitiakitanga, to provide a sustainable resource that meets the needs of future generations.	
Chapter 3 Water	
Objective 3.3.1 Maintain and enhance the water quality of confined and unconfined groundwater aquifers.	I have reviewed the CRC planning officers report and technical experts on groundwater. I am of the opinion that there remains uncertainty around maintaining groundwater quality in the long term. Therefore, I consider the proposal to be inconsistent with this objective. However, I do defer to CRC assessment as the authority over groundwater.
Policy 3.3.1.1 Avoid or mitigate the adverse effects of the use, development and protection of land on the water quality of confined and unconfined groundwater aquifers.	
Objective 3.4.1 Public access to and along the rivers of the Waimakariri District is maintained or enhanced.	The applicant considers the proposal is not inconsistent with these objectives and policies. I disagree with the Applicant, as there is no public access provided to the Karetu River via the paper road and the applicant has not proposed any other alternative access. As a result, public
Policy 3.4.1.1 Maintain and enhance public access to and along rivers of the District where access does	

not conflict with conservation values, the legal rights of private property owners and public safety.	access is not maintained and the applicant has no lawful right to block access, currently. Overall, I consider the proposal will be inconsistent with this objective and policy.
Chapter 4 - Land and Water Margins	
Objective 4.1.1 Maintain and enhance the life-supporting capacity of the land resource in the District. Policy 4.1.1.1 Promote sustainable land management practices that avoid or mitigate environmental impact such as soil loss, soil structure deterioration, soil nutrient depletion, land contamination, and non-point pollution of waterways. Policy 4.1.1.3 Land use activities should avoid, remedy, or mitigate adverse effects on environments susceptible to degradation such as river and stream margins, aquatic habitats, wetlands, coastal dunes, areas of significant indigenous vegetation and significant habitat of indigenous fauna.	As detailed in the CRC report, the landfill design is adequate in the short term to ensure contaminants being placed in the land are managed appropriately. However, in the long term, questions remain around how the contaminants will be manged without causing adverse effects on the Karetu River. I acknowledge the site is an existing quarry so the soil quality and structure are already compromised, and the proposal is an appropriate use of the land. However as discussed in this report, the effects on cultural values are a significant concern and there remains uncertainty around the management of lizards. Further, non-point source pollution of the waterway may not be able to be avoided or mitigated in the long term as discussed in the CRC reports (which I defer to, for the assessment of aquatic habitats and water quality). The site is surrounded by SNA, Wetlands, and the Karetu River and the proposal does not promote sustainable land management practices. The applicant has not provided significant offsetting or compensation for the proposed activity. The contaminants will be everlasting which have been detailed in Ms Nagy's report and Dr Massey from CRC. For the above reasons, I am of the opinion the proposal is inconsistent with this objective and policies.
Chapter 6 - Indigenous Vegetation Fauna and Habitats	
Objective 6.1.1 Safeguard indigenous biological diversity and ecosystem integrity, and recognise and provide for the protection of significant indigenous vegetation and significant habitats of indigenous fauna.	While some mitigation measures are proposed, the proposal does not provide sufficient certainty that the project will safeguard biodiversity and maintain ecosystem integrity. The disturbance of wetlands, lizard habitats, and native vegetation suggests that the proposal is inconsistent with Objective 6.1.1.

Policy 6.1.1.1 Identify areas of significant indigenous vegetation and significant habitats of indigenous fauna.	Stronger conditions, such as additional conservation commitments, habitat restoration, and stricter monitoring requirements, would be required to align more closely with this objective and policy. The proposed project does not strongly align with Policy 6.1.1.1 in terms of preserving significant indigenous habitats but includes mitigation strategies to compensate for the potential loss of biodiversity. As detailed in Ms Tocher's report, the proposal is lacking in Lizard Management. In addition, as detailed in Mr Rate and Ms Nagy's reports, concerns remain around wetland management. Therefore, I am of the opinion the proposal is inconsistent with this objective and polices.
Policy 6.1.1.4 Avoid or remedy adverse effects of activities on the ecological integrity of areas of significant indigenous vegetation and significant habitats of indigenous fauna including vegetation and habitat sites identified in the District Plan.	
Policy 6.1.1.5 Avoid, remedy or mitigate the adverse effects of activities on the intrinsic values of indigenous ecosystems, including effects on: a. integrity, form, functioning and resilience; and b. indigenous vegetation, habitats and indigenous fauna.	In my opinion, the proposal is inconsistent at this stage with Policy 6.1.1.5, as it does not avoid or adequately remedy ecosystem impacts. While some mitigation is proposed, it is reactive rather than proactive, and biodiversity losses remain likely due to incomplete assessments and uncertain restoration efforts.
Policy 6.1.1.6 Maintain and enhance the ecological integrity of vegetation and habitat sites identified in the District Plan and the attributes which make them significant.	The proposal is inconsistent with Policy 6.1.1.6, as it does not fully protect or enhance significant vegetation and habitat sites. There is insufficient information on lizard habitat impacts, uncertain mitigation outcomes, and a lack of proactive ecological enhancement measures. I do acknowledge the applicant has proposed riparian planting and other mitigation, however further details are required to understand if its just mitigation or its offset to provide positive effects to the environment.
Objective 6.2.1 Maintain, enhance and, where appropriate, restore wetland ecosystems.	After reviewing Mr Rate's evidence, I am of the opinion that there is uncertainty around the effects on the lower wetland from the proposal and that further thought is required around how the wetland will be maintained and the ecological integrity safeguard. Therefore, I am of the opinion the proposal is inconsistent with this objective and policy.
Policy 6.2.1.1 Safeguard the ecological integrity and natural functioning of wetlands.	
Chapter 8 - Natural Hazards	
Objective 8.2.1 The community's desired level of protection from flood events is achieved through an appropriate combination of measures to modify the level of	As discussed in the applicant's assessment and above in my report, the proposal will not increase the risk associated with flooding nor exacerbate the flood risk beyond the application site.

flooding, modify susceptibility to damage and deal with the consequences of floods. Policy 8.2.1.2 In areas identified in the District Plan as having a history of localised flooding, and in areas adjacent to water bodies, give specific consideration to the consequences and probability of flooding at the time of subdivision or land use consent, to avoid or mitigate a flood hazard. Policy 8.2.1.4 Avoid, remedy, or mitigate the adverse effects of activities that impede or redirect the movement of floodwater on a site, and/or exacerbate flood risk.	The proposed bridge will be designed in accordance with the Council's Engineering Code of Practice and will meet the permitted design standards of CRC rules. Therefore, I consider the proposal to be consistent with the Natural Hazards chapter.
Chapter 11- Utilities and Traffic Management	
Policy 11.1.1.5 New developments and activities in relation to their traffic generation characteristics should: a. locate on or establish primary access to an appropriate level of road within the road hierarchy; b. not have vehicular access to an inappropriate level of road in the hierarchy; and c. provide cycleways along arterial, strategic and collector roads where: i. necessary to provide an identified transport or recreation function; and ii. alternative opportunities do not exist within the road hierarchy.	The connection of the proposed activity, including utilisation of the roading network has been highlighted including the need to address impacts on the network. This includes the need to maintain or enhance the community's social, economic and cultural wellbeing, and its health and safety with regards to the network. Mr Gregory has determined that the transport network can accommodate the number of vehicle movements associated with the proposed activity but that specific measures will be required at various points. I consider that, with the recommendations proposed by Mr Gregory, the application is consistent with this policy.
Chapter 12 - Health Safety and Wellbeing	
Objective 12.1.1 Maintain the amenity values and a quality of environment appropriate for different parts of the District which protects the health, safety and wellbeing of present and future generations, and ensure that any potential adverse environmental effects from buildings and structures, signs, glare, noise and hazardous substances are avoided or mitigated. Policy 12.1.1.5	These provisions seek to maintain amenity values and the characteristics that impact the amenity values of an area. This includes the effects of structures, noise and hazardous substances. Recognition needs to be given to the existing amenity of the area which includes an operational quarry and as such the character of the site is different to that of an undeveloped site.

In the Rural Zones maintain the amenity values and quality of the environment by ensuring that the land is not dominated by dwellinghouses.	
Policy 12.1.1.10 Control noise to a level that is not unreasonable, measured against the character and circumstances of the zone. Policy 12.1.1.11 Avoid noise adversely affecting the amenity values and health and safety of people on neighbouring sites or zones.	The Applicant has provided a noise assessment and the proposal will comply with the permitted noise rules of the operative district plan. I am of the opinion noise from the site will not be unreasonable and will not be out of character for the zone. Therefore, I am of the opinion that the proposal is consistent with the objective and policies.
Objective 12.1.3 Protect people, vegetation, animals, and other natural and physical resources, from the adverse effects resulting from the discharge of contaminants to air. Policy 12.1.3.1 Locate and/or design activities, that lead to the discharge of contaminants to air, so that any adverse effects on people, vegetation, animals and/or other natural and physical resources are avoided or mitigated.	I defer to the CRC planning officer in relation to air discharge. I have reviewed CRC technical expert evidence and relying on that assessment, I am of the opinion that the proposal is consistent with this objective.
Chapter 14 - Rural	
Objective 14.1.1 Maintain and enhance both rural production and the rural character of the Rural Zones, which is characterised by: a. the dominant effect of paddocks, trees, natural features, and agricultural, pastoral or horticultural activities; b. separation between dwellinghouses to maintain privacy and a sense of openness; c. a dwellinghouse clustered with ancillary buildings and structures on the same site; d. farm buildings and structures close to lot boundaries including roads; e. generally quiet – but with some significant intermittent and/or seasonal noise from farming activities; f. clean air – but with some significant short term and/or seasonal smells associated with farming activities; and g. limited signage in the Rural Zone.	The applicant has detailed that the existing site comprises a limestone quarry which has existed since circa 1950's and has stated that: *"Upon completion of the landfilling activity the site will be capped and revegetated to be suitable for light livestock grazing (i.e sheep) or for ecological purposes consistent with the adjacent SNA.* *The proposal will enhance both rural production and the rural character of the zone.* *During construction activity / operation, nuisance activities (noise / dust) will not compromise the rural amenity character which has been informed by relevant technical assessments.* *The odour generation risk of the inert waste accepted is negligible and will not be detected off site."* I disagree with the Applicant that the proposal will enhance the rural character, however, I agree that the proposal is consistent with the rural zone character.

Policy 14.1.1.3 Maintain and enhance the environmental qualities such as natural features, air and noise levels, including limited signage and rural retail activities that contribute to the distinctive character of the Rural Zones, consistent with a rural working environment.	I am of the opinion the proposal is inconsistent with this policy due to the potential effects it could have on natural features surrounding the site, including cultural features such as the Karetu River and the terrestrial ecology within and surrounding the site. Therefore, the proposal would not maintain the local environmental qualities.

Summary – Operative District Plan Objectives and Policies

196. Overall, I am of the opinion the proposal is consistent with the zone and traffic objectives and policies. However, there is tension with the objectives and policies relating to ecology, water, land and water margins and significant tension with Māori objective and polices.

197. Therefore, I am of the opinion the proposal is inconsistent with the Waimakariri District Plan 2005.

Proposed Waimakariri District Plan

198. The Proposed Waimakariri District Plan 2021 sets out Objectives and Policies for uses across the District. I have undertaken a review of the objectives and policies of the Proposed Plan. I consider the following Objectives and Policies from the Proposed District Plan are key to my final recommendation and the decision makers decision.

Proposed Waimakariri District Plan (Post Hearing)	
SD - Rautaki ahunga - Strategic Directions	
SD-O1 **Natural environment** Across the District: 1. there is an overall net gain in the quality and quantity of indigenous ecosystems and habitat, and indigenous biodiversity; 2. the natural character of the coastal environment, freshwater bodies and wetlands is preserved or enhanced, or restored where degradation has occurred; 3. outstanding natural features and outstanding natural landscapes are identified and their values recognised and protected; 4. people have access to a network of natural areas for open space and recreation, conservation and education, including within riparian areas, the coastal environment, the western ranges, and within urban environments; and 5. land and water resources are managed through an integrated approach which recognises the importance of ki uta ki tai to Ngāi Tahu and the wider community, and the inter-relationships between	I am of the opinion the proposal is contrary to SD-01 for the following reasons: a) There will potentially be short-term loss of ecosystems, habitat and indigenous biodiversity during construction of the landfill and operation. b) The natural character of freshwater bodies and wetlands will not be preserved, enhanced or restored. c) The land being used is crown land and public access restricts anyone else from using the road reserve to access the Karetu River. d) An integrated approach which recognises the importance of ki uta ki tai to Ngāi Tahu and the wider community, and the inter-relationships between ecosystems, natural processes and with freshwater has not fully occurred.

ecosystems, natural processes and with freshwater.	
SD-O4 **Rural land** Outside of identified residential development areas and the Special Purpose Zone (Kāinga Nohoanga), rural land is managed to ensure that it remains available for productive rural activities by: 1. providing for rural production activities, activities that directly support rural production activities and activities reliant on the natural resources of Rural Zones and limit other activities; and 2. ensuring that within rural areas the establishment and operation of rural production activities are not limited by new incompatible sensitive activities.	I am of the opinion the proposal is consistent with SD-04 as the site has been an established quarry for over 60 years, and the proposal will not remove any active rural production land from use. In addition, the Applicant will, in the long term, restore the site to a rural environment which will be consistent with the rural environment.
SD-O5 **Ngāi Tahu mana whenua/Te Ngāi Tūāhuriri Rūnanga** Te Ngāi Tūāhuriri Rūnanga's role in the management of natural and physical resources is recognised, so that: 1. Ngāi Tūāhuriri's historic and contemporary connections, and cultural and spiritual values, associated with the land, water and other taonga are recognised and provided for; 2. the values of identified sites and areas of significance to Ngāi Tūāhuriri are protected; 3. Ngāi Tūāhuriri can retain, and enhance access to sites of cultural significance; 4. Māori land is able to be occupied and used by Ngāi Tūāhuriri for its intended purposes and to maintain their relationship with their ancestral land; 5. recognised customary rights are protected; 6. Ngāi Tūāhuriri are able to carry out customary activities in accordance with tikanga; and 7. Te Ngāi Tūāhuriri Rūnanga are able to actively participate in decision-making and exercise kaitiakitanga.	In my opinion, the proposal is contrary with the Ngāi Tahu Mana Whenua / Te Ngāi Tūāhuriri Rūnanga objective due to: 1. Lack of support from mana whenua, and not further requirment to cosult which prevents meaningful long term input. 2. Potential harm to cultural landscapes and water bodies, including significant sites for customary fishing and mahinga kai. 3. Failure to adequately protect kaitiakitanga. Ngāi Tūāhuriri strongly opposes the proposal due to its long-term cultural and environmental risks, indicating that the proposal does not meet the objective's intent.
TRAN - Ranga waka - Transport	
TRAN-O4 **Effects of activities on the transport system** Adverse effects on the District's transport system from activities, including reverse sensitivity, are avoided, remedied or mitigated.	I agree with the applicant that the proposal will be consistent with this objective and policies. As detailed above, in the Operative District Plan assessment, the connection of the proposed activity, including utilisation of the roading network has been highlighted including the need to address impacts on the network. This
TRAN-P4 **New activities**	

New activities: 1. locate on or establish primary access to the classification of road within the District Plan road hierarchy best able to accommodate the level and type of traffic generated; 2. provide safe entry and exit for vehicles to and from a site to a road without compromising the safety or efficiency of the road corridor or rail corridor; 3. where a site has two or more road frontages, provide access from the classification of road within the District Plan road hierarchy best able to accommodate the level and type of traffic generated; 4. provide safe and efficient access, including ease of access by service and emergency service vehicles; and 5. provide facilities for safe active transport, including through marked on-road cycle lanes, separated cycle lane, sealed road shoulders with sufficient width to safely accommodate cyclists, off-road formed cycle paths, cycling end-of-journey facilities for staff, shared use path and footpaths.	includes the need to maintain or enhance the community's social, economic and cultural wellbeing, and its health and safety with regards to the network. Mr Gregory has determined that the transport network can accommodate the number of vehicle movements associated with the proposed activity but that specific measures will be required at various points. I consider, with the recommendations adopted by Mr Gregory, that the application is consistent with the objective and policies.
TRAN-P15 **Effects of activities on the transport system** Ensure, to the extent considered reasonably practicable, that other activities do not compromise the safe and efficient operation, maintenance, repair, upgrading or development of the transport system, including through: 1. managing access to the road corridor, and activities and development adjacent to road/rail level crossings, particularly where it is necessary to achieve protection of the safe and efficient functioning of the transport system, including those parts of the transport system that form part of critical infrastructure, strategic infrastructure and regionally significant infrastructure; 2. avoiding, remedying or mitigating adverse reverse sensitivity effects on the transport system; and 3. providing for ease of access for service and emergency service vehicles.	
HS - Matū mōrearea - Hazardous Substances	
HS-O1 **Hazardous substance use, storage and disposal**	I defer to CRC in relation to hazardous substances (e.g. the landfill design leachate ponds).

Hazardous substance use, storage and disposal activities are located, and in the case of flood events, managed, so that: 1. risk to people, property and the environment from any major hazard facility is minimised, including avoiding unacceptable risk to sensitive activities; 2. risk to any sensitive area is minimised; and 3. risk to land and water as a result of flood events is minimised.	
SASM - Ngā whenua tapu o ngā iwi - Sites and Areas of Significance to Māori	
SASM-O1 **Ngā tūtohu whenua** The historic and contemporary cultural significance for Ngāi Tūāhuriri mana whenua, of and their relationship with ancestral lands, water, sites, wāhi tapu, wāhi taonga and coastal environment is recognised and provided for.	The proposal does not align with SASM-P5, as it fails to adequately protect culturally significant waterbodies and Ngāi Tūāhuriri customary uses. The opposition from Ngāi Tūāhuriri, risks to wetland health, and failure to integrate cultural values into design decisions all contribute to a high potential for negative cultural and environmental impacts.
SASM-P5 **Ngā Wai** Recognise the cultural significance of the waterbodies, repo/wetlands and those parts of the coastal environment identified as Ngā Wai, and manage the effects of land uses, and activities on the surface of water, to: 1. protect the health of these waterbodies and associated coastal waters, including by maintaining their natural character where it is high and enabling enhancement where it is degraded, including through the reinstatement of original water courses where practicable; 2. recognise historic and contemporary Ngāi Tūāhuriri customary uses and values associated with these waterbodies and coastal waters and enhance opportunities for customary use and access; 3. ensure any land uses adjoining these sites, or structures and activities on the surface of water do not adversely affect taonga species or Ngāi Tūāhuriri customary uses in these areas; 4. ensure new land uses do not create an additional demand for the discharge of sewage or stormwater directly into Ngā Wai, and where the opportunity arises, reduce the need for existing land uses to discharge untreated wastewater or stormwater into these areas; 5. protect the health, natural functions and processes of riparian margins and the coastal environment from the adverse effects of adjoining land use activities; and 6. provide for opportunities for the recognition of cultural values within the design, location and installation of infrastructure, while enabling their safe, secure and efficient installation.	

ECO - Pūnaha hauropi me te rerenga rauropi taketake - Ecosystems and indigenous biodiversity	
ECO-O1 **Ecosystems and indigenous biodiversity** Overall, there is an increase in indigenous biodiversity throughout the District, comprising: 1. protected and restored SNAs; and other areas of indigenous vegetation and habitat of indigenous fauna that are maintained or enhanced.	The project does not fully align with ECO-O1 due to its initial biodiversity loss and uncertainty regarding mitigation effectiveness. While long-term restoration efforts are proposed, they do not offset the immediate ecological damage, meaning there is no immediate net gain in indigenous biodiversity.
ECO-P4 Maintenance and enhancement of other indigenous vegetation and habitats Maintain and enhance indigenous vegetation and habitats of indigenous fauna that do not meet the significance criteria in ECO-APP1 by: 1. continuing to assess the current state of indigenous biodiversity across the District; 2. restricting indigenous vegetation clearance or modification of habitat of indigenous fauna, by recognising that indigenous vegetation within: a. the Lower Plains Ecological District and High Plains Ecological District has been widely destroyed, fragmented and degraded by land use and pests and therefore clearance of any remaining indigenous vegetation needs to be restricted in order to protect what remains; and b. the Oxford Ecological District, Torlesse Ecological District and Ashley Ecological District, has a larger proportion of indigenous vegetation remaining and therefore some clearance of indigenous vegetation may be acceptable; 3. recognising that the District contains species that are threatened, at risk, or reach their national or regional distribution limits in the District, and naturally uncommon ecosystems, and limiting their clearance; 4. providing information, advice and advocacy to the landowner and occupier; 5. supporting and promoting the use of covenants, reserves, management plans and community initiatives; and 6. working with and supporting landowners the Regional Council, the Crown, the QEII National Trust, NZ Landcare Trust and advocacy groups.	The project partially aligns with ECO-P4, as it includes vegetation restoration and habitat protection measures, but it still results in significant short-term habitat loss. Stronger commitments to ecological partnerships and stricter vegetation clearance controls would improve alignment with the policy.
ECO-P5 Offsetting residual effects A biodiversity offset will only be considered where there are residual adverse effects which cannot practicably be avoided, remedied or mitigated (in that order of hierarchy); and: 1. the biodiversity offset is consistent with ECO-APP2; 2. the biodiversity offset will recognise the limits to offsets due to irreplaceable and vulnerable biodiversity (including effects that must be avoided in accordance with ECO-P7 (1));	The proposal does not align with ECO-P5, as it fails to demonstrate that offsets will provide a true net gain in biodiversity.

3. there is a strong likelihood that the offsets will be achieved in perpetuity; and 4. the biodiversity offset will achieve a net gain of indigenous biodiversity if the area contains any of the following: a. indigenous vegetation in land environments where less than 20% of the original indigenous vegetation cover remains; b. areas of indigenous vegetation associated with sand dunes and wetlands; c. areas of indigenous vegetation located in 'originally rare' terrestrial ecosystem types not covered under (a) and (b) above; or habitats of threatened, and at risk, indigenous species.	
NATC - Āhuatanga o te awa - Natural Character of Freshwater Bodies	
NATC-O1 **Preservation of natural character** The preservation of the natural character of the surface freshwater environment, its wetlands, and lakes and rivers and their margins. **NATC-O2** **Restoration of natural character** Restoration of the natural character of surface freshwater bodies and their margins where degradation has occurred. **NATC-O3** **Use of freshwater body margins** The use of wetlands, and lakes and rivers and their margins are managed to preserve their natural character.	As detailed in Ms Crawford's report, the Karetu River margins are degraded currently. The applicant is proposing riparian planting along the river margins. This will contribute to restoring the natural character of the river, however further plans are required to understand the extent of the restoration of the Karetu River margins. The proposal seeks to restore the physical aspect of the river margins. However, the objectives also discuss the full surface freshwater environment. This also includes mahinga kai, water quality, and other cultural values the river has to Iwi. Therefore, I defer to CRC in relation to water quality and wetlands, where I understand there remain concerns. Iwi have raised significant concerns around cultural landscape and the freshwater impact for the proposal Overall, I am of the opinion the proposal is inconsistent with the natural character objectives.
NATC-P1 **Recognising natural character** Recognise the following natural elements, patterns, processes and experiential qualities which contribute to the natural character values of freshwater bodies: 1. freshwater bodies and their margins in their natural state or close to their natural state;	The proposal does not meet NATC-P1 because it: a) Impacts indigenous biodiversity and wetland ecosystems. b) Does not adequately incorporate Ngāi Tūāhuriri cultural values.

2. freshwater landforms and landscapes, biophysical, geologic and morphological aspects; 3. hydrological and fluvial processes, including erosion and sedimentation; 4. indigenous biodiversity, habitats and ecosystems; 5. water flow and levels, colour and clarity, and water quality; 6. the cultural values of the water body to Ngāi Tūāhuriri, including values associated with traditional and contemporary uses and continuing ability of the freshwater body to support taonga species and mahinga kai activities; and 7. the experience of the above elements, patterns and processes.	c) Concerns have been raised from CRC experts around water quality. To improve alignment, the proposal must include stronger commitments to restoring freshwater habitats and enhancing cultural values.
NATC-P3 **Customary harvesting and Ngāi Tūāhuriri values within the freshwater body and their margins** Recognise the cultural significance of wetlands, lakes and rivers and their margins, to mana whenua, and manage the effects of land use activities through limiting the size, visual appearance, and location, to ensure they do not adversely affect taonga species, mahinga kai or customary harvesting, access, and other cultural values.	The proposal is inconsistent with this policy as it does not recognise and protect Ngāi Tūāhuriri customary values as detailed in their submission.
NATC-P5 **Structures within surface freshwater body setbacks** Enable activities that have a functional need or operational need to be located within the freshwater body setbacks, provided that adverse effects on natural character values are avoided, remedied or mitigated.	I am of the opinion the bridge has a functional to be in the proposed location, for safe access to the site during rainfall events and to stop vehicles driving through the river. I agree with the Applicant that the bridge provides positive outcomes. Ms Crawford has also detailed that the natural character of the Karetu River would be enhanced with the bridge being constructed. Therefore, I consider the proposed bridge is consistent with this policy.
NATC-P6 **New and existing structures within and over freshwater bodies** Provide for new structures, and upgrades to existing structures, on the surface of freshwater where: 1. public access to, and along, the freshwater body is maintained; 2. the structure has a functional need or operational need to be located on the surface of freshwater; 3. the structure does not compromise the use of the surface of freshwater for existing users; 4. the structure does not disturb the habitat of indigenous species or hinder passage of migratory fish species; 5. the structure avoids creating new, or exacerbating existing natural hazards, or river or stream bank erosion; and	The single span bridge will be designed appropriately, will replace the existing ford crossing, and provide more secure and safer access for vehicles and persons, especially at times of higher flood flows. However, the bridge and security fencing will restrict public access to the river. In terms of cultural values, works will be undertaken in the river margins impacting the Karetu River. Therefore, I consider that the proposal is inconsistent with this policy. I recommend the security gate is relocated to the landfill side of the

6. any adverse effects to the natural character and cultural values, associated with freshwater bodies are avoided, remedied or mitigated in order to preserve those values.	bridge to enable public access to the river, or that alternative access is provided.
PA - Tomonga mārea - Public Access	
PA-O1 **Provision of public access** Public access to and along the CMA, water bodies, and to reserves with high recreational, scenic or amenity values is provided for, maintained and enhanced, where this does not create adverse effects to natural character, landscape, indigenous biodiversity, cultural or recreational values, health and safety, or the rights of private property owners.	The proposal does not align with PA-O1 and PA-P1, as it restricts public access to the Karetu River and does not provide for the maintenance or enhancement of access. This creates negative effects on recreational users and Ngāi Tūāhuriri cultural access. Therefore, I am of the opinion the proposal is inconsistent with Public Access objective and polices.
PA-P1 **Maintaining and enhancing public access** Maintain and enhance existing public access to and along the CMA, surface freshwater bodies, and reserves by managing the adverse effects of activities and development, where these would limit public access, or compromise the use or enjoyment of these areas.	
EW - Ketuketu whenua - Earthworks	
EW-O1 **Earthworks** Earthworks are undertaken in a way that minimises adverse effects on amenity values, cultural values, property, infrastructure and the health and safety of people and the environment.	The project partially aligns with EW-O1 and P1 as I acknowledge the visual amenity, noise, vibration and natural hazards effects will be mitigated and/or avoided. However, the proposal does not adequately minimise risks to cultural values, and ecological health. Stronger commitments to erosion control, sediment retention, and cultural engagement are needed to meet the objective and policy.
EW-P1 Enabling earthworks Enable earthworks where they: 1. are compatible with the character, values and qualities of the location and surrounding environment; 2. avoid, remedy or mitigate any adverse effects on any sites or areas identified as ONL, ONF, SAL, Coastal Environment Overlay, SNA, sites and areas of significance to Māori, Natural Open Space Zone, surface freshwater bodies and their margins, or any notable tree, historic heritage or heritage setting; 3. minimise erosion and avoid adverse effects from stormwater or sediment discharge from the site; 4. avoid increasing the risk to people or property from natural hazards; 5. maintain the stability of land including adjoining land, infrastructure, buildings and structures; 6. minimise the modification or disturbance of land, including any associated retaining structures, on the visual amenity values of the surrounding area; and 7. minimise adverse dust, vibration and visual effects beyond the site.	

EW-P5 **Rehabilitation** Require site rehabilitation during or immediately following the completion of earthworks activity to: 1. minimise adverse effects on amenity values, natural values, cultural values, quality of the surrounding environment and the future use of the site, and 2. encourage rehabilitation that incorporates ecological enhancement and habitat for indigenous fauna and the use of locally sourced indigenous vegetation.	The project partially meets EW-P5, as it includes rehabilitation efforts but lacks certainty on immediate ecological restoration and long-term success. To be consistent, the plan should: • Ensure rehabilitation starts immediately after earthworks. • Strengthen long-term maintenance of restored habitats. • Provide specific monitoring and success criteria to track ecological recovery. • Provide for cultural values.
EW-P6 **Water resources** Avoid adverse effects of earthworks on ground and surface water bodies that could result in water contamination and adverse effects on mahinga kai.	In my opinion the proposal is currently inconsistent with EW-P6, as it does not adequately address long-term risks of water contamination and potential adverse effects on mahinga kai.
NOISE - Te orooro	
NOISE-O1 **Adverse noise effects** Noise does not adversely affect human health, communities, natural values and the anticipated amenity values of the receiving environment.	After undertaking a review of the site and the applicant's noise assessment, I consider noise will be appropriately managed. Therefore, I consider the proposal is consistent with this objective.
RURZ - General Objectives and Policies for all Rural Zones	
RURZ–O1 Rural Environment An environment with a predominant land use character comprising primary production activities and natural environment values, where rural openness dominates over built form, while recognising: 1. the east of the District has a predominant character of small rural sites with a pattern of built form of residential units and structures at more regular intervals at a low density compared to urban environments; and 2. the remainder of the District, while having a range in the size of rural sites, has a predominant character of larger rural sites with a corresponding density of residential units and built form.	The predominant land use character of the rural environment will be retained. The built form will not change significantly with the final product resulting in remediation of the site to its likely former rural character. The proposed activities have a functional need to be located within a rural zone. Noise, odour and traffic will be managed appropriately and there will be no density issues related to the proposal. Therefore, I agree with the applicant that the proposal is consistent with the objective and policies for the rural zone.
RURZ–O2 **Activities in Rural Zones** Rural Zones support primary production activities, activities which directly support primary production, and activities with a functional need to be located within Rural Zones.	
RURZ–P1	

Amenity values and character Recognise the contribution of amenity values to maintaining the character of the zones, and maintain amenity values in Rural Zones by: 1. requiring separation between buildings on adjoining properties to maintain privacy and a sense of openness; 2. retaining generally low levels of signs, noise, traffic, odour, outdoor lighting, and built form from activities while recognising that in association with primary production and rural industry, which are part of the character of each rural zone that: a. there may be seasonal, short term or intermittent odour, noise, dust, traffic and outdoor lighting effects; and b. large buildings may have a functional need. 3. restricting the density of residential units and minor residential units that can be established on a site consistent with the character of each rural zone, unless a development right has been protected through a legacy provision or is associated with a bonus allotment.	
RURZ–P2 Rural land Maintain the availability and life supporting capacity of land in recognition of its importance for undertaking primary production, and to maintain or enhance natural environment values in Rural Zones, including by: 1. providing for primary production activities; 2. providing for those activities that directly support primary production, or those activities with a functional need to be located within Rural Zones, where: a. adverse effects on soil and highly productive land are minimised; b. the amenity values and character of Rural Zones are maintained; and c. to the extent practicable, adverse effects are internalised within the site where an activity is being undertaken. 3. ensuring subdivision and subsequent development is managed so that it does not foreclose the ability for rural land to be utilised for primary production activities including not diminishing the potential for rural land to meet the reasonably foreseeable needs of future generations.	
RURZ–P6 **Industrial activity** In relation to industrial activity: 1. provide for rural industry where the scale of the activity is compatible with the character and amenity values of the rural zone; 2. limit the establishment of industrial activity (other than rural industry) to circumstances where:	The applicant has detailed: *'The locating of the proposal within an industrial zoning is not considered reasonable with a rural location being most appropriate.*

a. there is no reasonable and available site for the activity within any Industrial Zones; b. amenity values and character of the Rural Zones can be maintained; c. the scale of the industrial activity is such that it will not affect the availability of highly productive land within the zone to be used for primary production, to the extent that the productive potential of rural land to meet the reasonably foreseeable needs to future generations is undermined; and d. the nature, scale and degree of permanent changes that will occur on the land and soil resources on the site where the activity is located is minimised. 3. ensure that any rural industry or other industrial activity does not limit or constrain the operation of any existing primary production activity in the zone, and does not have adverse effects on any sensitive activity; 4. provide for existing large-scale industrial activities outside of urban environments where these are well established and have been in continuous industrial use, in order to recognise their existing environmental effects; and 5. to the extent practicable, manage adverse effects of rural industry or other industrial activity so that they are internalised within the site and any adverse effects not internalised are minimised.	*It is considered that the proposal will maintain the amenity values and character of the surrounding rural receiving environment. Positive effects will occur at the conclusion of the activity being derived from the return of the current quarry use to a more natural form more consistent with surrounding land.* *The location is not assessed as highly productive land with the site comprising an open quarry landscape which has existed for circa 60 years'.* I agree with the Applicant's assessment that the proposal is consistent with this policy.
RURZ–P8 **Reverse sensitivity** Minimise the potential for reverse sensitivity effects by: 1. avoiding the establishment of any new sensitive activity near existing intensive indoor primary production activities, intensive outdoor primary production activities, waste management facilities, quarrying activities, mining activities, and rural industry in circumstances where the new sensitive activity may compromise the operation of the existing activities; 2. managing the establishment of new sensitive activities near other primary production activities; 3. ensuring adequate separation distances between existing sensitive activities and new intensive indoor primary production activities, intensive outdoor primary production activities, quarrying activities, mining and rural industry; and avoiding quarry, landfill, cleanfill area, mining activities adjacent to urban environments where the amenity values of urban environments would be diminished.	The applicant has detailed adequate separation distances are afforded to the activity at the site, to ensure effects are minimised on sensitive activities in the surrounding area. Technical assessments have informed nuisance related effects including noise. I agree with the applicant's assessment and consider the proposal to be consistent with this policy.
GRUZ-O1 **Purpose of the General Rural Zone** Natural and physical resources and primary production activities which contribute to the District's rural	The provisions recognise and provide for activities which contribute to the district's rural productive economy while also maintaining the character of the zone.

productive economy dominate while fragmentation of land into small rural parcels is restricted. **GRUZ–P1** **Character of the General Rural Zone** Maintain the character in the General Rural Zone which comprises: 1. primary production being the predominant land use; 2. a dominance of open space and vegetation, including paddocks, trees, agriculture and natural elements over buildings; 3. a landscape strongly influenced by patterns and processes of human activity associated with primary production, with a focus of open farmland areas and larger scale primary production activities, along with areas with natural environment values and sites and areas of significance to Māori; 4. separation between residential units and farm buildings on adjoining sites, with an overall low density of residential units and buildings; and 5. contrasts with urban environments through having a general absence of the type and scale of infrastructure and built form found in urban environments.	In this instance, the activity will establish within an existing quarry, there will be no loss of productive land and the character of the site will be maintained including a landscape influenced by patterns and processes of human activity, but it is recognised that the site will not be dominated by vegetation, trees and natural elements. For the above reasons, it is considered that the proposal is not inconsistent with the above provisions, but neither is it supported by the provisions.

Summary – Proposed District Plan Objectives and Policies

199. Overall, the proposal is consistent with the zone and traffic objectives and policies however there is tension with the ecology, water, land and water margins and significant tension with Māori objective and polices. Therefore, I am of the opinion the proposal is inconsistent with the Proposed Waimakariri District Plan 2021.

Weighting Assessment

200. In my view, there is no tension between the objectives and policies of the Proposed and Operative District Plans. The two plans have clear objectives and policies that the proposal is inconsistent with, being Māori values, ecology, water, access to Karetu River, and land and water margins.

PART 2 OF THE RESOURCE MANAGEMENT ACT 1991

201. Following the guidance of *RJ Davidson Family Trust v Marlborough District Council* [2018] I must consider whether it is necessary to resort to Part 2 in order to determine this application. The Court of Appeal has clarified how to approach the assessment of "subject to Part 2" in section 104(1). In R J Davidson, the Court of Appeal found that (in summary):

a) Decision makers must consider Part 2 when making decisions on resource consent applications, where it is appropriate to do so. The extent to which Part 2 of the RMA should be referred to depends on the nature and content of the planning documents being considered.

b) Where the relevant planning documents have been prepared having regard to Part 2 of the RMA, and with a coherent set of policies designed to achieve clear

environmental outcomes, consideration of Part 2 is not ultimately required. In this situation, the policies of these planning documents should be implemented by the consent authority. The consideration of Part 2 "would not add anything to the evaluative exercise" as "genuine consideration and application of relevant plan considerations may leave little room for Part 2 to influence the outcome". However, the consideration of Part 2 is not prevented, but Part 2 cannot be used to subvert a clearly relevant restriction or directive policy in a planning document.

c) Where it is unclear from the planning documents whether consent should be granted or refused, and the consent authority has to exercise a judgment, Part 2 should be considered.

d) If it appears that the relevant planning documents have not been prepared in a manner that reflects the provisions of Part 2, the consent authority is required to consider Part 2.

202. Although the CRPS, ODP and PDP have all been prepared having regard to Part 2, both the CRPS and ODP are under review and nearly at the stage of being replaced, and the PDP is still subject to submissions. In addition to the age of the plans, higher order documents such as the National Policy Statement for Freshwater Management (covered by CRC) and the NPS-IB have come into place after these documents were drafted. For the above reasons and due to the scale and significance of the proposal, I am of the opinion that Part 2 will provide further guidance for the decision makers to either grant or decline the consent, and I provide an assessment below.

203. The purpose of the Resource Management Act 1991 is to promote the sustainable management of natural and physical resources. This includes safeguarding of the life supporting capacity of soil. To achieve the most relevant parts of Part 2 of the Act, this application must demonstrate that the proposal will not detrimentally affect the existing and future community or impose on the finite nature of resources.

204. Part 2 of the RMA sets out the purpose (Section 5) and principles (Sections 6 – 8) of the RMA, which are discussed below.

205. Section 6 of the RMA identifies a number of matters of national importance which shall be recognised and provided for to achieve the purpose of the RMA. Of these, I consider the following of relevance:

(a) the preservation of the natural character of wetlands, lakes, rivers and their margins and the protection of them from inappropriate subdivison, use and development

(c)The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

(e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other taonga:

206. I consider that the proposal would not achieve matters (a) (c) (d) and (e) of Section 6 of the RMA, as the proposal may have adverse effects on the receiving environment and the mauri of the water. In addition, I have considered the submission of Te Ngāi

Tūāhuriri Rūnanga, which is in strong opposition and outlines concerns on how the proposal will affect the cultural values of the area.

207. Section 7 "Other Matters" of the RMA states: "In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—"

The "Other Matters" considered potentially relevant to this proposal are:

(a) kaitiakitanga:
(b) the efficient use and development of natural and physical resources
(f) Maintenance and enhancement of the quality of the environment.

208. In relation to (b) and af) it is debatable whether the amenity values are being maintained and enhanced alongside the quality of the environment. As discussed, there remain significant cultural concerns alongside other attributes relating to terrestrial ecology and effects as discussed in Ms Nagy's report, that does not show the proposal achieves (a) and (f) of section 7 of the RMA.

209. In relation to (b) the applicant is proposing to use a quarry that is at the end of its life as a landfill, therefore it is an efficient use of the resource. However, there are questions marks around the site selection, being close to the Karetu River, Wetlands and a SNA which detract from the positives of rehabilitation of an old quarry site.

210. Section 8 of the RMA states: "In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi)." While the site does not contain an identified site of significance, it has been identified that there will potentially be cultural effects, and therefore the proposal does not achieve the purpose of Section 8.

211. In conclusion, having considered the actual and potential adverse effects of the proposal and its relationship with plan provisions, I consider there is tension between the proposal and the purpose and principles of the RMA and whether the proposal is in fact achieving the purpose of the Act as set out in Part 2.

OTHER MATTERS

212. Section 104(1)(c) allows the Consent Authority to consider other matters it considers relevant and reasonably necessary. In this instance it is considered that the Mahaanui Iwi Management Plan and the WasteMINZ Guidelines are relevant documents that should be considered.

Mahaanui Iwi Management Plan

213. This Iwi Management Plan (IMP) is a manawhenua planning document reflecting the collective efforts of six Papatipu Rūnanga that represent the hapū who hold manawhenua rights over lands and waters within the takiwā from the Hurunui River to the Hakatere River and inland to Kā Tiritiri o Te Moana. The plan provides a values based, plain language policy framework for the protection and enhancement of Ngāi Tahu values, and for achieving outcomes that provide for the relationship of Ngāi Tahu with natural resources across Ngā Pākihi Whakatekateka o Waitaha and Te Pātaka o Rākaihautū. The plan has the mandate of the six Papatipu Rūnanga, and is endorsed

by Te Rūnanga o Ngāi Tahu, as the iwi authority. As such, it is applicable to policy and planning processes under the Resource Management Act (RMA) 1991.

214. Provisions within the plan include:

- To protect the mauri of air from adverse effects associated with discharge to air activities (Policy R1.1).

- To require the improvement of water quality as a matter of regional and immediate importance and to require that water quality in the takiwā is of a standard that protects and provides for the relationship of Ngāi Tahu to freshwater (Policies WM6.1 and WM 6.2).

- To require that local authorities recognise that there are particular cultural (tikanga) issues associated with the disposal and management of waste (Policy P7.1), to actively work with local government to ensure that waste management practices protect cultural values such as mahinga kai and wāhi tapu and are consistent with Ngāi Tahu tikanga (Policy P7.2) and to require waste minimisation as a basic principle of, and approach to, waste management (Policy P7.3).

- Ngāi Tahu whānui, both current and future generations, must be able to access, use and protect mahinga kai resources, as guaranteed by Te Tiriti o Waitangi Policy TM1.1).

- To require that local and central government recognise and provide for the ability of tāngata whenua to identify particular landscapes as significant cultural landscapes (Policy CL1.1), and to require that local and central government give effect to cultural landscapes in policy, planning and decision making processes (Policy CL1.2).

215. There are also policies that are specific to the Waimakariri District which include:

- To recognise and provide for the groundwater resource beneath the Waimakariri Rakahuri Plains as a wāhi taonga resource (Policy WAI3.1), to require that water management in the catchment recognises and provides for the relationship between groundwater and surface water as a matter of priority (Policy WAI3.2) and to protect groundwater resources in the Waimakariri catchment from effects as a result of inappropriate or unsustainable land use and discharge to land activities (Policy WAI3.3).

216. In consideration of the above, it is again recognised that a number of the provisions identified above should be considered and addressed by Environment Canterbury, particularly regarding the potential effects of the proposal on water quality and the impacts of this for mahinga kai.

217. It is noted that a submission received also identifies the site as being within a cultural landscape. In reference to this, I have not been able to identify specific documentation within the management plan which identifies the site as being within a cultural landscape, but I note the following statement at page 220 of the management plan:

> *"The whole of the Waimakariri catchment can be identified as a cultural landscape. Ngāi Tahu land use and occupancy extended from the mountains to the sea (and beyond) in this catchment. The traditional place names and other cultural*

landscape features associated with the lower Waimakariri catchment are evidence of the extensive use of the area.

All along the river are kainga nohoanga, mahinga kai areas and wāhi tapu such as urupā.

However, within this larger landscape of land use and occupancy particular areas are identified as cultural landscapes with significant historical, traditional, cultural and contemporary associations. The ability to designate particular areas as cultural landscapes enables tāngata whenua to provide for the physical and cultural connections and connectivity between particular places, sites and resources, rather than "dots on maps" (see Section 5.4 Issue CL1)."

218. Ngāi Tūāhuriri Rūnanga clearly outline the significance of the environment stating the following:

"The Karetu River (which flows from Mount Karetu, to the Ōkūkū River and then to the Rakahuri River), as described above, is of cultural importance to Ngāi Tūāhuriri. Water in the Ngāi Tūāhuriri takiwā is bound to Ngāi Tūāhuriri through whakapapa, and a determinant of the welfare and mana of Ngāi Tūāhuriri. The concept of kaitiakitanga carries an obligation to protect the mauri of a resource. Ngāi Tūāhuriri is concerned that the proposed location next to a culturally significant waterway further diminishes the mauri and mana of that water and its interconnected ecosystem. Further, the Karetu River would be adversely affected should the landfill liner and/or the leachate pond fail. The proposal does not consider the cultural landscape. It is highly industrial in both nature and effects, and is consequently inappropriate at the head of a catchment adjacent to areas of high natural character, landscape values and wetlands."

219. Overall, I consider on the basis of the submission provided that there are adverse cultural effects, in particular related to the relationship of Te Ngāi Tūāhuriri Rūnanga to their ancestral lands, freshwater resources and taonga.

220. Therefore, the proposal is contrary to the Maahanui Iwi Management Plan

WasteMINZ Guideline Site Selection

221. WasteMINZ, New Zealand's leading organisation in waste management and resource recovery, has developed a series of guidelines to promote best practices across the industry. These guidelines serve as valuable resources for waste industry professionals, producers, consumers, and advertisers, ensuring environmental sustainability and public health.

222. The WasteMINZ guidelines have guidelines around landfill site selection, which highlights the following:

a) Geological & Hydrogeological Suitability: Sites should be located in areas with low permeability soils and natural barriers to prevent leachate contamination.
b) Distance from Water Sources: Avoid locations near groundwater recharge zones, rivers, lakes, or wetlands to prevent pollution.
c) Land Use Compatibility: Sites should be far from residential areas, culturally sensitive sites, and high-value agricultural land.
d) Accessibility & Infrastructure: The site must have suitable road access for waste transport and emergency response.
e) Environmental Impact: Consideration of air quality, noise, and ecological impact when selecting a site.

223. I have turned my mind to the site selection guidelines due to submissions raising concerns over the process, and also the effects that have been discussed above in my report and the technical expert's s42A reports.

224. I conclude that the proposal is inconsistent with the WasteMinz guidelines site selection process for the following reasons:

a) The Karetu River is directly adjacent to the proposed site therefore the proposal does not avoid water sources.
b) The site is within close proximity to a Significant Natural Area and no significant protection and enhancement has been proposed to the SNA.
c) Cultural advice was not sought until after the site was chosen. I concur with the Iwi that this not best practice and that the applicant should have sought cultural advice through the site selection process to be consistent with the WasteMINZ guidelines.

Summary of Statutory Assessment

225. This report has assessed the proposal to continue to operate a quarry and to establish and operate a landfill.

226. The proposal is a discretionary activity under the provisions of the Operative District Plan and Restricted Discretionary under the Proposed Waimakariri District Plan.

227. My assessment has highlighted effects on cultural values that are more than minor, alongside uncertainty of the effects on terrestrial ecology at this time, in particular from the proposed lizard management and the impact the proposal will have on the wetlands.

228. I acknowledge that the location in the Rural Zone and the use of an existing quarry is appropriate. However, I am of the opinion that the proposal is inconsistent with both Operative and Proposed District Plans as there is tension with the objectives and policies relating to cultural values, water, natural character and ecology.

229. The purpose of the Resource Management Act 1991 includes managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while safeguarding the life supporting capacity of soil. In this instance, it has not been demonstrated that the proposal will be consistent with this purpose.

230. Therefore, I recommend that the application be declined.

Draft conditions

231. I have considered the draft conditions provided by the Applicant, along with the technical experts for WDC and CRC. I consider that the conditions of consent will develop over the course of the ordered joint witness statements. Therefore, I will provide a version of draft conditions through the planning joint witness statement as directed by the Commissioners in Minute 1.

Recommendation

232. I recommend, pursuant to sections 104 and 104B, and subject to Part 2 of the RMA, that the application made by Protranz International Limited for resource consent to continue operation of and expand an existing hard rock quarry and to establish, maintain and operate a landfill at 150, 154 ,174 and 176 Quarry Road Quarry Road, Loburn be **REFUSED.**

233. The reasons for this recommendation are related to:

a) The adverse effects on indigenous fauna and habitat.
b) The significant effects on Tangata Whenua values.
c) The proposal being inconsistent with the NPS-IB.
d) The tension the proposal has with the objectives and policies of the Operative District plan and the Proposed District Plan relating to Māori values, terrestrial ecology, water and land, and water margins.
e) The proposal not meeting the purpose of Part 2 of the RMA, in particular sections 6(e) and (f).
f) Uncertainty around the site selection process and alternative assessment.
g) The proposal being contrary to the Iwi Management Plan.
h) The absence of a sufficient site selection process as defined by the WasteMINZ guidelines.

Recommended by:

Tim Johnston

Date: 24th March 2025

Tim Johnston
Senior Planner

Appendix 1- Herpetology Section 42A report, prepared by Dr Mandy Tocher, LizardExpertNZ,

Before the Independent Hearing Panel appointed by the Canterbury Regional Council
IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF Application CRC243699 by Protranz International Limited for earthworks, quarrying and landfilling at Whiterock Quarry, 150 and 174 Quarry Road, Loburn, North Canterbury.

Supplemental Section 42A Officer's Report

Report of Dr Mandy D Tocher

Introduction

Background

1. This report forms part of the Environment Canterbury's (ECAN) audit of the assessment of environmental effects (AEE) provided by Protranz International Ltd (the applicant) in support of ECAN resource consent applications CRC243699-CRC243706, and RC245076 (Waimakariri District Council).
2. This report will provide the decision-maker with information and advice related to:
    a. The actual and potential effects of the proposed activities on indigenous lizards.
    b. The scale and significance of the anticipated environmental effects as they relate to lizard populations and habitats.
    c. The proposed management of lizard-related actual and potential adverse effects.

Qualifications

3. I have worked in the field of New Zealand herpetology (lizards and frogs) for over 30 years with almost all my career based in Canterbury and Otago.
4. I currently hold the position of Principle Herpetologist at LizardExpertNZ, my own business that I initiated April 2021.
5. I obtained a M.Sc. with first class honours in 1992 and a Ph. D in Zoology in 1997. These were both awarded by the University of Canterbury. I also hold a master's degree in planning (Distinction), awarded from the University of Otago in 2017.[1]

[1] Tocher, M. (2016). Biodiversity Maintenance and Protection under RMA Section 6(c) (Thesis, Master of Planning). University of Otago.
Tocher Mandy D., Theo Stephens, Claire Freeman, and Chris Garden (2017). Biodiversity Maintenance and Protection Under Both Clauses of s 6(c) of the RMA. Resource Management Theory & Practice 2017, pages 136-260.

6. I am a member of the New Zealand Amphibian Specialist Group for the IUCN, the New Zealand Reintroduction Specialist Group. I am a past member of the Department of Conservation (DOC*)* lizard Technical Advisory Group (TAG*),* the Native Frog Recovery group, grand and Otago skink Recovery group and the Resource Management Law Association. I am an Associate Editor for the New Zealand Journal of Zoology and an accredited RMA hearings commissioner.

7. From 2011-2016 I was employed as Senior Ecologist by Wildland Consultants Ltd, and then as Principal Ecologist/Herpetologist by Ryder Environmental until April 2021 when I initiated LizardExpertNZ. Before I took up my position with Wildland Consultants I was employed by the DOC as the South Island Herpetologist for 16 years, specialising in research and management of South Island lizards and frogs.

8. Under contract to DOC, I helped to develop the DOC lizard management plan template[2] and the key principles for lizard salvage in New Zealand.[3]

Scope of Report

9. This report is prepared under the provisions of Section 42A of the Resource Management Act 1991 (RMA). This section allows a council officer or consultant to provide a report to the decision-maker(s) on a resource consent application made to the council and allows the decision-maker(s) to consider the report at the hearing.

10. Section 41(4) of the RMA allows the decision-maker(s) to request and receive from any person who makes a report under Section 42A "any information or advice that is relevant and reasonably necessary to determine the application".

11. This report is supplementary to the Section 42A Report prepared by the Environment Canterbury/WDC for the above resource consent applications. Full details of the consent applications are provided in the respective Section 42A reports.

12. To carry out this audit of the consent applications, I have:

    a. Considered the relevant sections of the Applications and Assessment of effects on the environment (AEE) submitted by the applicant, dated 28th March 2024.

    b. Considered the technical Appendix G 'Ecological Impact Assessment' (EcIA) attached to the AEE/Application.

    c. Considered the proffered conditions dated 27/03/2024 attached to the AEE as Appendix Y. These conditions cover Region and District conditions in separate sections.

    d. Considered the revised set of conditions (Appendix Y Rev1) that formed part of the s92 response to ECAN, dated 27/08/2024. These conditions address lizard management in 'District Proposed Conditions' 'Biodiversity & Landscape Enhancement' and its accompanying Schedule 1.

    e. Considered the Site Management Plan (draft Rev B; Appendix L).

    f. Reviewed further information that was provided to WDC by the applicant on draft Management Plans, stock fencing & Terrestrial Ecology (Lizards) (dated 23/8/2024).

[2] https://www.doc.govt.nz/globalassets/documents/about-doc/concessions-and-permits/wildlife-research-permits/lizard-management-plan-template.pdf

[3] DOC TAG, 2019. Key principles for lizard salvage and transfer in New Zealand. Department of Conservation. 19 pages.

g. Reviewed further information that was provided to ECAN by the applicant on crown land (GEN-003) and draft MPs (GEN-002) (dated 16/8/24).

h. Considered Section 6(c) significance criteria in the Canterbury Regional Policy Statement and its supporting guidance document.[4]

i. Looked at Appendix H rev1 to determine footprint and locations of proposed activities.

j. Undertaken a site visit on 24th January 2025 to determine lizard habitats onsite.

k. Considered lizard specific issues raised by 22 submitters: namely concerns related to effects of the proposal on lizards and the management of actual and potential effects.

l. Reviewed the following report: Hutchison, M. August 2024. Botanical Survey of White Rock Limestone Site, Loburn, Waimakariri District. 57 pages.

13. Of note, I was not provided with a copy of a Lizard Management Plan (LMP) that I understand has been submitted to DOC for permitting.[5] As a result, I have had to assess the application 'as lodged' which deferred in many places to the LMP as the primary lizard management document.

14. This report also provides my assessment of the scale and significance of adverse and positive effects.

15. Finally, if the decision makers are of a mind to grant the application, this report provides recommendations on the scope of conditions of consent that are required to ensure adverse effects on lizards can be adequately avoided, remedied or mitigated, and/or compensated for.

Description of the Activity

16. I have relied on the description of the activity provided in Section 4 of the Applications & AEE. The proposed activities are located at 150, 154, 174 Quarry Road, Loburn as well as WDC road reserve and crown land (Karetu riverbed & margins). Mitigation is proposed for part of 176 Quarry Road (a WDC Significant Natural Area (SNA)[6]).

17. The proposed activities will affect a mix of disturbed land e.g., the quarry pit and associated disturbed surfaces, and lesser disturbed land such as:

a. recently felled pine plantations

b. wetlands

c. exotic grasslands

d. the riparian margins of the Karetu River and

e. the WDC road reserve area[7].

[4] UpdatedGuidelinesfortheApplicationofEcologicalSignificanceCriteriaforIndigenousVegetationandHabitats ofIndigenousFaunainCanterburyRegion%20(10).PDF

[5] DOC reference 107310-FAU.

[6] WDC SNA039 'Whiterock Limestone Vegetation'.

[7] The applicant's response to WDC issue 5 a) i. at page 23 does not unequivocally rule out works over the road reserve.

18. I define ‘lesser’ disturbed land as land that has been disturbed in the past, e.g., from farming, afforestation/logging and/or historic fires and no longer retains a predominately indigenous vegetation cover but nonetheless can and does provide lizard habitat.[8]

19. The extent and location of ‘lesser’ disturbed land affected by the proposed activities was not clearly set out in the AEE. Using Google earth imagery, observations during the site visit and a visual appraisal of Appendix H rev1[9] and Figure 43 of the EcIA[10], I have estimated these areas to cover a combined area of *ca*. 1.5-3 ha.

20. In making my estimate I note the applicant estimates the anticipated loss of lizard habitats to be *ca*. 0.5-1.0 ha[11] but does not provide a map/plan showing where loss will occur.

21. Activities most likely to affect lizard values, i.e., earthworks and concurrent vegetation removal (including exotic pasture) and spoil disposal (if required) over most of these lesser disturbed areas are well described in terms of consents required by both ECAN and WDC, and Appendix H (rev1) shows site plans where activities will generally take place.

22. Exceptions, where descriptions of activities over potential lizard habitats are not well set out by the applicant include:

    a. The width and method of installation of the proposed security fence. The installation of this fence may affect a variety of lizard habitats over exotic grasslands, wetlands and recently cleared plantation forestry.

    b. The width and method of installation of the proposed herbivore exclusion fencing around SNA. The installation of this fence may affect a variety of lizard habitats over exotic grasslands and recently cleared plantation forestry.

    c. The width and method of installation of the proposed stock exclusion fencing around watercourses. The installation of this fence may affect a variety of lizard habitats over exotic grasslands/shrublands of riparian areas.

    d. Proposed activities (if any) over the existing access road (WDC road reserve) from Quarry road and before the proposed new bridge.[12] Activities such as widening to accommodate entry onto the new bridge and/or introducing culverts/water tables could affect potential Canterbury grass skink (*Oligosoma* aff. *polychroma* clade 4) habitat along the roadsides, e.g., along the existing fence line that is not regularly mown.

    e. The location and description of offsite overburden storage[13]. I was unable to be assured by the information provided by the applicant that overburden will not be placed on top of offsite lizard habitats thus extending potential effects off site to a second location.

    f. The location and description of any wastewater disposal areas/trenching from weighbridge buildings.[14] I was unable to be assured by the information provided by the applicant that wastewater disposal onsite will avoid lizard habitats including wetlands.

[8] Figure 17, Page 35 of EcIA (Appendix G of application) and observations during the January 2025 site visit.
[9] Provided in the s92 response to ECAN.
[10] Page 51 of EcIA (Appendix G of AEE).
[11] Page 36 and 53 of the EcIA (Appendix G of AEE).
[12] The applicant’s response to WDC issue 5 a) i. does not unequivocally rule out works over the road reserve (page 23).
[13] Application Section 4.5.3 page 31.
[14] Application Section 2.2.22 page 5.

Description of the Receiving Environment

23. I consider the existing environment is represented by baseline lizard populations and habitats, and any factors that are currently influencing them e.g., predator loading of the site.

24. The application provides a general and mostly high-level description of the existing environment in Section 3. Section 3.10 addresses 'Ecology' and defers to Appendix G the Ecological Impact Assessment (EcIA) for existing lizard-environment.

25. The WDC SNA forms an important part of the application as it is a proposed release site for lizards salvaged from the development footprint. I expected, therefore, a description of lizard values of the site and details of any management being carried out there now that may affect existing lizard values. This information was not provided.

26. As I understand it the onsite pine plantations were cleared as a permitted activity under the WDC plan. Nonetheless, the activity of clearing the plantations from the site forms part of the proposal, i.e., there was a need to clear the plantations to enable the development of the site as per the applicant's proposal.

27. Given potential lizard habitat is present in and around the pine plantations and indeed, lizards may ultimately benefit from their removal; a commentary on the applicant's position on this activity as it pertains to lizards/lizard habitat was warranted and was provided in the EcIA.[15]

28. Bunding work has begun onsite and as I understand it forms part of the applicant's proposal. A description of onsite bunding work already carried out over potential lizard habitats was appropriately provided in the EcIA.[16]

Lizard Values – Assessment and Characteristics

29. To determine potential lizard values of the site, the results of a desktop appraisal of the DOC Herpetofauna database was provided.[17]

30. I agree with the applicant that the potential lizard values present are Canterbury grass skink and McCann's skink (*O. maccanni*) along with either Waitaha gecko (*Woodworthia brunnea*) or greywacke gecko (*Woodworthia "*Southern Alps northern*"*) and possibly jewelled gecko (*Naultinus gemmeus*), and their respective habitats.[18] All are nationally At Risk – Declining except McCann's skink (Not Threatened).[19] Jewelled geckos are very unlikely to be present.[20]

31. It would have been helpful to have more commentary on the herpetological context of Waitaha/greywacke gecko, and Canterbury grass skink complex and McCanns skink. For example, greywacke gecko is a recent split from Southern Alps gecko meaning its distribution is not well documented. Likewise, Canterbury grass skink cannot be easily physically differentiated from sister grass skinks, or from McCann's skink, which creates difficulties identifying the boundaries of their respective distributions and necessitates handling lizards to identify them from each other.

[15] Page 53 of the EcIA (Appendix G of the AEE).
[16] Based on oobservations made during January 2025 site visit, and reference to this is made in the EcIA page 53 (Appendix G of AEE).
[17] Table 33 of the EcIA (Appendix G of AEE).
[18] Page 30 of the EcIA (Appendix G of the AEE).
[19] Hitchmough *et al.* 2021.Conservation status of New Zealand reptiles, 2021. New Zealand Threat Classification Series 35. Department of Conservation, Wellington. 15 p.
[20] Based on observations of habitats present during January 2025 site visit.

Lizard Species Affected

32. To determine actual lizard values (populations and habitats), a 'passive' lizard survey was conducted over parts of the footprint whereby lizards were not handled. The survey was carried out without a Department of Conservation (DOC) handling permit which although appropriately acknowledged,[21] lessened the accuracy and thus usefulness of the lizard survey. A case in point, the two skinks photographed in the EcIA are grass skinks (probably Canterbury grass skinks)[22]; neither are McCann's skink as suggested by the applicant.[23]

33. It is standard & best practice to carry out a lizard survey under a DOC handling permit. This allows the surveyor to handle lizards and be sure of identification either by using their own experience or by taking high-quality photographs to enable others more experienced to assist with identification. As a result of the inability to handle lizards, the lizard species affected by the proposal are not entirely known.

34. What is known is that At Risk-Declining grass skinks (probably Canterbury grass skinks) are present in good numbers across the site including in areas recently cleared of pine plantation. Also, potential habitat for *Woodworthia* spp. geckos is present in the WDC SNA of 176 Quarry Road.[24] The presence of McCann's skink and *Woodworthia* sp. geckos is not certain.

35. To remedy this situation regarding lizard survey, the applicant has suggested the survey although not ideal, is sufficient and by erring on the side of caution and assuming At Risk declining lizards are present, the information collected from the survey is sufficient to assess effects and design appropriate mitigation.

36. Although I commend the applicant for being cautious and as it turns out At Risk Declining grass skinks are indeed present, I don't believe it is sufficient to simply guess at which of the likely species are present.

37. My view originates from the need to have a solid and robust foundational assessment of lizard values to then accurately determine effects and in turn, accurately determine appropriate mitigation to balance any adverse effects. A shaky foundation based on inadequate survey can, in my view, only lead to inaccuracies along the line, ultimately to the detriment of affected lizard values.

Lizard Habitats Affected

38. The EcIA states that an area of 11 ha will be affected across all proposed activities.[25] Of this, the applicant suggests that at least 0.5 ha of lizard habitat could be adversely affected by the landfill development and a further *ca*. 0.5 ha of habitat loss has already occurred relating to bunding work.[26]

39. The applicant's assessment of lizard habitat loss appropriately acknowledges that this estimate does not include all "other possible impacts"[27] such as improvement of the existing flood protection bund. I note that this estimate also does not include areas that were not surveyed (described in paragraph 46 of this statement).

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[21] This situation is acknowledged in the EcIA page 30 (Appendix G of AEE).
[22] The only way to be sure is to collect a genetic sample – tail tip – from a handful of skinks. Grass skinks cannot be identified by physical appearance alone, but location does point to the grass skinks onsite being Canterbury grass skinks.
[23] EcIA Figures 15 & 6 (Appendix G of AEE).
[24] Observations made during the site visit, January 2025.
[25] Appendix G, Section 1.2. page 10.
[26] Page 36 and 53 of the EcIA (Appendix G of AEE).
[27] Page 33 of the EcIA (Appendix G of AEE).

40. My own estimate of lizard habitats affected is provided in paragraph 19. My estimate is approximately double the estimates provided by the applicant, i.e., *ca*. 1.5-3.0 ha versus *ca.* 0.5-1.0 ha, my estimates and the applicants estimate respectively.

41. If my estimates are correct, the lizard habitat (and lizard populations within) affected by the proposal has been underestimated by the applicant and so too has the effects assessment and 'mitigation package' offered.

42. My view is supported by statements in the EcIA such as: "suitable habitat for indigenous lizards exists across much of the site, in the form of rank grass and where limestone rocks/boulder are present"[28] and "skinks were confirmed to be present across much of the site".[29] To me, these statements imply large areas of lizard habitat are present. Lizard populations also seem high over the site[30].

43. Despite the problems I have raised regarding the lizard survey, the applicant states that lizard values are 'high' when considered at the Ecological District (ED) level.[31] I generally agree with this assertion as areas of the site that provide habitat for Canterbury grass skinks represent Section 6c RMA 'significant fauna habitat' under the Canterbury Regional Policy Statement i.e., having an At Risk Declining threat status is enough to trigger significance.

44. Finally, in terms of the receiving environment and factors influencing lizard populations and habitats, the application along with Appendix G of the AEE addresses relevant issues except for existing pest control. I was unable to ascertain based on information provided by the applicant and an ecological report of the SNA[32] if any predator control was underway over the site or the SNA; I have assumed not.

Supplementary Lizard Survey

45. The areas that were subjected to lizard survey were confirmed in the s92 response[33] and as I understand it, survey was not carried out over all areas affected by the proposed activities.

46. Areas to be affected by the proposed activities that were not surveyed include:

    a. Areas recently cleared of pine plantation.

    b. Wetlands.

    c. The riparian margins/riverbed of the Karetu River and footprint of proposed stock exclusion fencing.

    d. The road reserve.

    e. An area of grassland over 154 Quarry Road.

    f. The WDC SNA and footprint of proposed stock exclusion fence.

    g. The footprint of the security fence that will encompass the site[34].

47. To illustrate by an example the potential consequence of this survey deficit I note that grass skinks (probably Canterbury grass skinks) were easily found over an area recently cleared of pine plantation during the January 2025 site visit. The area in question was

[28] Section 4.3 of the EcIA, page 30 (Appendix G of AEE).
[29] Section 4.3.2. of the EcIA page 33 (Appendix G of AEE).
[30] EcIA Figure 17, page 35 (Appendix G).
[31] Section 3.10 of application page 26 & Section 4.3.1. page 36 of the EcIA (Appendix G of AEE).
[32] Hutchison, M. August 2024. Botanical Survey of White Rock Limestone Site, Loburn, Waimakariri District. 57 pages.
[33] s92 response to WDC issues 5 a) i. or 5 a) ii. and shown in Figures 13 & 17 of the EcIA (Appendix G).
[34] Appendix H rev1 'Location Plan'.

directly adjacent to the WDC SNA on 176 Quarry Road. As far as I can tell, this area was not surveyed by the applicant which means effects on this area and other similar non-surveyed habitats are likely to have been underestimated.

48. Moreover, some or all these habitats maybe 'significant fauna habitat' under the Canterbury Regional Policy Statement (CRPS) necessitating 'protection' through application of the effects management hierarchy. For this reason, the location and extent of these habitats should have been documented in the EcIA to enable an assessment of proposed 'protection' of these areas.

49. In my opinion, an additional supplementary lizard survey is justified ahead of consenting (or otherwise) this application for the following reasons:

    a. It is best practice to carry out a lizard survey robust enough to determine which lizard species are present and the extent and quality of their habitats, and numbers of each species affected. This is the purpose of a lizard survey. Unfortunately, for reasons relating to DOC permitting, the current survey was unable to ascertain which species are present, i.e., there may be 1 species of lizard affected or more and up to three. The numbers affected has not been provided.

    b. The effects assessment described over the next section will be inherently flawed if the number of lizard species affected and the extent of each of their habitats is unknown. Moreover, the scale and significance of effects cannot be ascertained unless the survey informing the assessment is adequate.

    c. A flawed effects assessment cannot be used to design an appropriate mitigation package; for example, avoidance actions cannot be considered unless there is an understanding of where lizard values lie, and which places are priority for avoidance. I note that no definitive lizard avoidance actions have been suggested, nor indeed any remediation measures; these issues are covered over paragraphs 70-75 below. This information deficit that is presumably addressed in the LMP for that was not provided, needs addressing given grass skinks occupy significant fauna habitat across the site (significant under Section 6c, RMA 1991).

    d. The sufficiency (adequacy) of the proffered mitigation described below, itself lacking in substantive detail, cannot be determined based on a flawed effects assessment.

50. I note that even if the LMP provides some additional information that is lacking from the application as lodged, additional survey will still be required to properly inform the effects assessment required under the RMA (1991), and in particular, Section 6c. Proper and appropriate 'protection' of significant fauna habitat can only be achieved if we know where such habitat lies.

Actual and Potential Effects on Lizard Values

Description of Effects

51. I have raised concerns over paragraphs 45-49 relating to inadequate survey that has likely resulted in an underestimate of effects on lizard values. Moreover although I assume effects are clearly described in the LMP submitted to DOC, I cannot be sure.

52. Notwithstanding my concerns on the application as lodged, a high-level list of actual and potential project impacts (effects) of the proposed activities on lizard values was

supplied in the EcIA.[35] Some listed effects were nonspecific in terms of affected values, mechanism and location so I have assumed these related to all biodiversity over all habitats of the proposal and in adjacent areas. e.g., temporary to short term increase in dust, noise and vibration.

53. A further commentary on effects specific to lizards is provided in Section 4.3.2 of the EcIA.[36] This commentary appropriately acknowledges that effects maybe more severe during the colder months, and as noted in paragraph 39, the applicant acknowledges that there may be other potential effects too.

54. The Zone of Inference (ZOI) is defined in the EcIA as follows: "*lizard habitats immediately adjacent (within 5 m) to activities onsite*" but as noted above, lizard habitats have not been mapped and extent quantified over all areas of the site, so it is not possible to deduce where the ZOI is to then determine scale and magnitude of effects. Also, the 5 m buffer into adjacent habitats is inconsistent with the 1 m described in the 'pre-mitigated level of effects assessment' for lizard habitats.[37]

55. Overall, however, most relevant actual and potential unmitigated effects were documented in Section 4.3.2. of the EcIA.[38] The exceptions are injury to lizards, potential permanent fragmentation of lizard habitats & populations both onsite and over surrounding areas including the WDC SNA, and the potential positive effects to lizards of removing pine plantations that were shading their habitats.

Magnitude & Significance of Effects

56. I note that the RMA (1991) gives no guidance on how practitioners are to assess the magnitude or significance of effects.

57. *In lieu* of guidance under the RMA, the applicant has used EIANZ guidelines to assess level, magnitude and significance of lizard-related effects.[39] I do not generally support the application of the EIANZ guidelines as resulting effects assessments can be formulaic and rigid rather than bespoke for the site. As a result, there is a risk that effects can be downplayed. Moreover, the RMA (1991) and as far as I am aware ECAN too, do not formally support the EIANZ approach.

58. Using the EIANZ tables, the applicant has assessed:

    a. The pre-mitigated level of effect of the proposal on lizards as "very low".[40]

    b. The pre-mitigated magnitude of effect of the proposal on lizards as "negligible".[41]

59. For level and magnitude of effect 'lizards' have been clumped into a single entity, i.e., the applicant has assumed there is only 1 lizard species affected by the proposal despite inferring otherwise.[42] As a result, the level and magnitude of effect is only provided for 'lizards' rather than for each lizard species affected, the latter being more appropriate in my view.

60. For reasons detailed in paragraph 49 I have formed the view that effects have likely been underestimated and underestimates will have affected the applicants' assessments of both level and magnitude of effect, i.e., it follows that both level and

[35] Section 2.2.3 of EcIA (Appendix G of AEE).
[36] Page 36 (Appendix G of AEE).
[37] Section 4.3.2. page 36 of EcIA (Appendix G of AEE).
[38] Dust, noise and vibration, permanent habitat loss, disturbance & death of protected wildlife.
[39] https://www.eianz.org/document/item/4447
[40] Table 6, page 38 of the EcIA.
[41] EcIA page 36.
[42] Page 30 of the EcIA (Appendix G of the AEE).

magnitude of effect are also underestimated. For these reasons, I advocate for a fulsome reassessment of level and magnitude of effect following additional survey.

61. The pre-mitigated significance of effect is not provided by the applicant. In my opinion, inadequate survey has meant that an assessment of 'significance of effects' is also not possible now, ahead of supplementary survey.

62. However, Table 6 of the EcIA[43] assesses the 'post-mitigation magnitude of effect' as 'positive'. In my opinion, the level of detail provided by the applicant is insufficient to enable this assessment to be made and I recommend this assessment is disregarded.

RMA 1991 v Wildlife Act 1953

63. I firstly note that permitted activities under the RMA (1991) are not permitted activities under the Wildlife Act 1953 (WLA) i.e., there is no permitted baseline equivalent under the WLA. Moreover, the presence of a single lizard (including a Not Threatened species such as McCann's skink) triggers the Wildlife Act (1953), which in my view is a very blunt tool that is administered inconsistently by DOC.

64. The applicant suggests that managing effects under the Wildlife Act (1953) process is preferable to reduce "*a potential duplicated and or inconsistent approach with the Waimakariri District Council*."[44]

65. Managing effects over indigenous lizard habitats are very clearly within the mandate of the RMA (1991) and its planning tools. This is especially so for significant fauna habitats occupied by grass skinks that are addressed in the RMA as a Part II matter (Section 6c), and feature prominently in the NPS-IB. I strongly disagree, therefore, that the RMA (1991) devolves responsibility for 'effects management' to the Wildlife Act (1953) permitting process as the applicant proposes.[45]

66. A Lizard Management Plan is proposed in Section 5.6.2 of the application. This LMP is to be developed to "avoid, minimise, and remediate project effects to indigenous lizards and their habitat and minimise the risk of disturbing or killing lizards pursuant to the Wildlife Act 1953".[46]

67. I agree with the stated purpose of the LMP but fail to see why the applicant has not provided the LMP that has been submitted to DOC. This would have allowed for submitters, stakeholders and technical experts to review and comment on the LMP with the collective view to improve outcomes for lizards.

68. In my opinion, providing the LMP as part of the applicant's resource consent application would better serve to reduce any administrative duplication by allowing complete transparency to all stakeholders on how effects are proposed to be managed under both the Wildlife Act (1953) and the RMA (1991). This view is supported by one submitter who agreed with the need to have them upfront as part of the consenting process.[47]

69. What is more appropriate and commonplace in practice is the formulation of a site-specific LMP that serves the dual purpose of satisfying the requirements of the RMA (1991) whilst providing information in sufficient detail to support a WLA to DOC. The DOC LMP template provides for dual purpose LMPs.[48]

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[43] Page 38 of the EcIA (Appendix G of AEE).

[44] s92 response to WDC, page 6.

[45] Page 6 Section 2.4 'Wildlife Act 1953' of the application, and Section 5.6.2 of the application (page 47).

[46] Section 5.6 of the Application, page 47.

[47] SUB034870.

[48] https://www.doc.govt.nz/globalassets/documents/about-doc/concessions-and-permits/wildlife-research-permits/lizard-management-plan-template.pdf

Effects Management: Application of Mitigation Hierarchy

70. I note that one submitter referred to the need to protect significant biodiversity including lizards now and for future generations.[49] Section 6c of the RMA (1991) highlights the duty of practitioners to "…*recognise and provide for the …. protection of significant habitats of indigenous fauna*". As I understand it, implicit in this provision is the need to exhaustively avoid, remedy and mitigate adverse effects on 'significant fauna habitat', regardless of magnitude or significance of effects on such habitats. This is generally acknowledged by the applicant.[50]

71. I could find no legitimate actions described in the EcIA and/or application that relate to avoiding lizard habitat.[51] The exceptions to this is reference to avoiding the SNA[52] and avoiding the winter months when developing areas of the site that have an exotic grass cover that could harbour grass skinks (May-August inclusive)[53].

72. In my view, avoiding the SNA is not a legitimate avoidance action as the SNA is already protected by policies/rules in the WDC plan and NPS-IB. Also, I have doubts that the applicant will be able to, in a business sense, cease work over the winter months to avoid rank exotic grassland habitat of grass skinks.[54]

73. As well, there are aspirational references to avoiding areas of exotic rank grass "if practicable" and "should occur if possible" and then statements inferring that all this will be managed under the LMP that has not been provided[55]. I would have found it very helpful to see on a map, at the very least, where lizard habitats will be avoided or alternatively a clear statement that no lizard habitats can be avoided due to the nature of the development/business.

74. As it stands, I can give no weight to stated avoidance actions and cannot determine if all avoidance options have been exhausted.

75. For remediation of lizard habitats, again, no detail is provided of what the applicant proposes over the longer term at landfill closure. Instead, reference is made to managing lizard habitat remediation in the LMP or the LCP (assumed to be Landfill Closure & Aftercare Plan),[56] the latter also not provided. The VMP is also referenced as a plan that may manage lizard habitats of the riparian areas.[57]

76. I note that a single lizard-related submission referred to a desire to see remediation of the quarry for biodiversity purposes.[58]

77. The applicant states that the LMP will outline habitat creation that supersedes habitat lost,[59] which I support. The applicant does not, however, take the next logical step to provide the necessary information to back this claim.

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[49] SUB034380.

[50] Supported by the applicant in Section 3.3.3.3. 'Management of Effects' at page 20 of the EcIA (Appendix G of AEE).

[51] As noted elsewhere, I suspect this is because lizard habitat areas have not been mapped, but I note that wetland areas are mapped and included in project maps in Appendix H rev1; I expected a similar level of detail for lizard habitats, but this was absent.

[52] EcIA Section 4.3.3. Effects management hierarchy, page 37 (Appendix G of AEE).

[53] EcIA Section 4.3.3. page 37 (Appendix G of AEE).

[54] See Figure 43 of the EcIA, page 51 (Appendix G of AEE).

[55] s92 response to WDC issue 5 a) i.

[56] EcIA Section 4.3.3. page 37 (Appendix G of AEE). I note that Section 15 Landfill Closure and Aftercare in the SMP (draft Rev B, page 64) makes to "*light grazing or natural state vegetation*".

[57] Section 14.1 of SMP draft Rev B (Appendix L).

[58] SUB034380.

[59] s92 response to WDC on issue 5 a) vii.

78. As it stands, therefore, I can give no weight to stated remediation actions and cannot determine if all remediation options have been or will be exhausted.

79. For mitigation, the applicant proposes to move lizards to an area adjacent to the SNA[60] or to within the SNA itself.[61] I note that the release site is not confirmed to be the SNA, but I assume the release site is identified and confirmed in the LMP.

80. In terms of release into the SNA, it is very much a case of the 'devil is in the detail' so to speak. For example, removing stock from the SNA although touted as a positive effect of the proposal[62] may instead cause seasonal rodent eruptions in response to exotic grasses seeding that could in turn result in perverse outcomes (in terms of elevated predation) for both the existing lizards of the SNA, and the newcomers released via salvage. Rodent monitoring will be key at managing this effect and the LMP will need to provide a rodent control/suppression response action if rodent tracking goes above *ca*. 5 % tracking.[63]

81. Also, science has shown that releasing lizards into existing lizard populations does not result in good outcomes for released/salvaged lizards especially where mice are present.[64]

82. Potential rodent eruptions and relatively high mortality in salvaged lizards are just two of multiple problems I can see with the proposal and for these reasons, I am unable to assess whether salvage is the best option for lizards of the site but accept that it maybe.

83. As it stands, therefore, and without the detail contained within the submitted LMP, I can give no weight to stated mitigation actions and cannot determine if all mitigation options have been exhausted.

84. Lastly, although I accept that the applicant believes lizard values will be appropriately managed in the LMP, I cannot agree to this without sighting the LMP.

Compensation for Residual Adverse Effects

85. Based on information supplied I have formed the opinion that significant residual effects will likely ensue with the avoidance, remediation and mitigation actions proposed by the applicant. There really is no way to say for sure without sighting the LMP.

86. I note that the applicant forms a different view on level of residual effect and assesses the level as 'net gain'[65] whilst providing no supporting evidence for how this assessment was made. I am not convinced that a net gain will eventuate.

87. I hold the view that compensation is the most suitable path to address any residual effects on lizard values and that compensation actions are required to adhere as far as technically feasible to principles in Appendix 4 of the NPS-IB.[66]

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[60] Tables 1 & 2 'Assessment' of the s92 response to WDC (Page 6) & Biodiversity and Landscape Enhancement Plan (Appendix Y rev1).
[61] Page 44 of the EcIA (Appendix G of the AEE).
[62] EcIA page 17 (Appendix G of the AEE).
[63] A recommended tracking rate to generate a positive effect on lizards. See Norbury, G., Wilson, D.J., Clarke, D. et al. Density-impact functions for invasive house mouse (*Mus musculus*) effects on indigenous lizards and invertebrates. Biol Invasions 25, 801–815 (2023). https://doi.org/10.1007/s10530-022-02946-9
[64] Norbury, G., van den Munckhof, M., Neitzel, S., Hutcheon, A., Reardon, J., & Ludwig, K. (2014). Impacts of invasive house mice on post-release survival of translocated lizards. *New Zealand Journal of Ecology*, 322-327.
[65] Table 6, page 38 of the EcIA.
[66] [2023] NZEnvC 103 Friends of Conical Hill Incorporated v Hurunui District Council and Hanmer Springs Thermal Pools and Spa [PDF, 223 KB]

88. Also, compensation actions need to be lizard-centric and additional to actions proposed to balance other effects on biodiversity, i.e., 'double-dipping' is not appropriate where a single action is proposed to offset multiple effects across a range of ecological values.

Consideration of Submissions

89. Twenty-two submissions referred directly to indigenous lizards, skinks or geckos. [67]

90. I have divided these submissions into two topic areas:

    a. Effects of the proposal on lizard values, and

    b. Proposed effects management: Lizard translocation.

91. Each will now be addressed in turn.

Effects of the proposal on Lizard values

92. Of the twenty-two lizard-related submissions, twenty specifically raised concerns regarding potential effects and all of these 'oppose' the application. No lizard-related submissions supported the applicant's approach to assessing effects nor the proposed effects management.

93. Effects identified by submitters were general and referred to 'disruption', 'impact', 'contamination', 'potential threat', 'health', 'short and long-term effects' of and to indigenous lizards. One submitter[68] shared my concern that effects may have been underestimated by the applicant and others seem to infer this. A single submitter[69] questioned the quality of technical reports which I take to include the lizard effects assessment.

94. As noted over paragraphs 56-62 above, I too have concerns about lizard effects and the inability of the applicant to robustly ascertain the scale and magnitude of effects from the lizard survey carried out. That said, I assume a comprehensive effects assessment has been provided to DOC within the submitted LMP as the DOC LMP template requires this.

95. Four submitters[70] while not expressly referring to lizards, had concerns regarding the impact of the proposal on wetland habitats and their biodiversity (fauna and flora). As noted in paragraph 46, wetland habitats were not surveyed for lizards, despite their potential as significant fauna habitat. For this reason, I share submitters concerns and note again my recommendation that further surveys are required to ascertain the degree with which onsite wetlands support indigenous lizards (see paragraphs 45-50).

96. Seven submitters[71] had concerns relating to the potential impact of the proposal on the WDC SNA (176 Quarry Road). These submissions are highly relevant to lizards because the SNA forms part of the applicant's proposal, and the SNA was not surveyed for lizards. I too have concerns regarding the impact on the SNA but my concerns are very specific to the applicant's proposal to relocate lizards there (or to an adjacent area; see paragraphs 97-100 below).

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[67] SUB034326,SUB034361,SUB034380,SUB034383,SUB034384,SUB034396,SUB034413, SUB034415,SUB034497,SUB034518,SUB034529,SUB034566,SUB034571,SUB034623, SUB034627,SUB034631,SUB034668,SUB034767,SUB034806,SUB034807,SUB034848, SUB034837.

[68] SUB034741.

[69] SUB034741.

[70] SUB034741, SUB034405, SUB034529, SUB034380.

[71] SUB034383, SUB034384, SUB034413, SUB034627, SUB034668, SUB034806, SUB034807.

Proposed Effects Management: Lizard Translocation

97. Four submitters[72] questioned the likely success and/or the appropriateness of the proposed lizard relocation from the works footprint to the nearby SNA (or adjacent area). A related issue was raised by a single submitter regarding the fate, in terms of adverse effects of a landfill, to lizards that evade capture and are not relocated, i.e., those that are left behind.[73]

98. Without having the opportunity to view the LMP submitted to DOC, it is hard to form a view on the likely outcome of a salvage but I note that key information is missing from the application that DOC consider necessary for a successful salvage.[74] I refer to information such as (but not limited to):

    a. The lizard species to be relocated and some idea of numbers likely to be involved.

    b. Lizard species and numbers at the proposed release site (the WDC SNA/adjacent area).

    c. The likely carrying capacity of lizards at the proposed release site.

99. Based solely on information provided by the applicant, I have formed the view that the planned relocation of skinks from the footprint to the nearby WDC SNA (or adjacent area) has only casually been considered by the applicant and submitters concerns have merit. In support of the submitters, I note that scientific research has shown that lizard relocation is often unsuccessful.[75]

100. Lastly, I am far from convinced that relevant DOC salvage principles have been adhered to in the design of the salvage/translocation proposal, which could also compromise the success of any planned relocation.

Conclusions and Recommendations

101. Lizard survey did not cover the entire project area and has failed to generate key information necessary to understand the scale and magnitude of effects of the applicant's proposal on lizard values. For example, the number of lizard species onsite, the extent of their habitat uses, and the population levels affected remains largely unknown. A flawed effects assessment is a concern also raised by multiple submitters.

102. Without an effects assessment based on appropriate survey, the quantum of mitigation required to balance effects is unable to be determined. This is particularly concerning given much of the lizard habitat onsite is 'significant fauna habitat'.

103. Moreover, I believe withholding the LMP that has been submitted to DOC is inappropriate as it may contain a level of detail of effects and mitigation that is absent from the application. Also, stakeholders have been unable to effectively engage in the consent process as it pertains to lizards as key and essential information has been unreasonably withheld.

104. For the reasons stated above, I recommend processing of the WDC consents are stalled until a lizard survey is completed that addresses information gaps, and a DOC-approved

[72] SUB034396, SUB034571, SUB034415, SUB034518.
[73] SUB034767.
[74] DOC TAG, 2019. Key principles for lizard salvage and transfer in New Zealand. Department of Conservation. 19 pages.
[75] Griffith B, Scott JM, Carpenter JW, Reed C 1989.Translocation as a species conservation tool:status and strategy. Science 245: 477-480

LMP is supplied that at the very least assists with aligning consent conditions with any conditions imposed by DOC.

105. If, however, the decision makers are of a mind to grant the application ahead of new survey, I recommend that conditions of consent are imposed that cover the following matters.

    a. A requirement to carry out an additional lizard survey. This survey must include all areas affected by proposed activities (including the SNA & wetlands) and must:

        i. Identify lizard species affected.

        ii. Provide an estimate of population/individuals affected for each lizard species and

        iii. Quantify the extent of lizard habitats affected for each lizard species.

    b. A requirement to provide a Lizard Management Plan upfront and ahead of consenting that:

        i. Disregards the EIANZ guidelines and opts instead for clear & precise expert commentary of values, magnitude, level and significance of effects.

        ii. Conforms to the DOC LMP template[76] that caters for dual-purpose RMA/Wildlife Act LMPs.

        iii. Applies the mitigation hierarchy to actual and potential adverse effects and compensates for any residual effects that are deemed significant.

        iv. Adheres as far as technically feasible to principles in Appendix 4 of the NPS-IB, if compensation is required.[77]

        v. Describes a best practice lizard salvage regime that conforms to relevant principles in the DOC salvage principles guidance document.[78]

106. Should conditions be imposed that cover these matters, I will be confident any adverse effects of the proposal on lizard values will be appropriately avoided, remedied or mitigated, and/or compensated for.

[76] https://www.doc.govt.nz/globalassets/documents/about-doc/concessions-and-permits/wildlife-research-permits/lizard-management-plan-template.pdf

[77] [2023] NZEnvC 103 Friends of Conical Hill Incorporated v Hurunui District Council and Hanmer Springs Thermal Pools and Spa [PDF, 223 KB]

[78] DOC TAG, 2019. Key principles for lizard salvage and transfer in New Zealand. Department of Conservation. 19 pages.

Appendix 2- Avifauna- Section 42A report prepared by Hamish Dean, SLR Consulting.

Before the Independent Hearing Panel appointed by the Canterbury Regional Council

IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF Application CRC243699 by Protranz International Limited application for earthworks, quarrying and landfilling at Whiterock Quarry, 150 and 174 Quarry Road, Loburn, North Canterbury.

Section 42A Officer's Report

Report of Hamish Dean

26 January 2025

Introduction

Background

1. This report forms part of the Environment Canterbury's audit of the assessment of environmental effects (AEE) provided by Protranz International Limited (the applicant) in support of resource consent applications CRC243699.
2. This report will provide the decision-maker with information and advice related to:
    a. The actual and potential effects of the proposed activities on avifauna and;
    b. The management of pest animals.

Qualifications

3. My full name is Hamish Alston Dean.
4. I hold the qualifications of Bachelor of Science (Ecology and Zoology) from Victoria University of Wellington, and Master of Science in Biological Sciences (Ecology) from the University of Waikato.
5. I have worked in the fields of ecology and natural resource management for 21 years, working in consultancy, not for profit organisations and at Bay of Plenty Regional Council (**BOPRC**). I am currently a Principal Ecologist at SLR Consulting (**SLR**). I have held this position since June 2021. Prior to joining SLR (then 4Sight Consulting) I was a Consents Team Leader at BOPRC.
6. I am a generalist terrestrial ecologist with a broad range of experience in vegetation ecology, wetlands, avifauna, pest animal control, and ecological restoration. This experience includes survey, monitoring, assessment and management of a range of ecosystem types. Some examples of my recent experience are summarised below.
7. I have designed and undertaken bird monitoring programmes, including at Aongatete Forest (2022) and Ohope Scenic Reserve (2023). These projects involved avifauna monitoring in Aongatete Forest in the Kaimai Range, and at Ohope Scenic Reserve, and Matata Scenic Reserve in the Eastern Bay of Plenty. Over 100 5-minute bird count

stations were measured and data was used to assess the effectiveness of pest animal control by measuring change in bird populations over time and against control sites.

8. I was field lead for a team that undertook comprehensive surveys of vegetation, wetlands, fauna, and fish passage for the reconsenting of an existing mineral extraction operation at Taharoa in the North Island. This survey across a 940 ha site included cryptic bird survey, shorebird survey and point counts. I wrote the terrestrial vegetation and wetlands technical report and prepared and presented expert evidence for the resource consent hearing.

9. I have undertaken or managed numerous Ecological Impact Assessments which have generally included site assessments of vegetation, wetlands, fauna, pests and aquatic values and subsequent reporting and impact assessment. Recent examples have included solar farms at Opunake, Carterton, Marton and in the Tasman District.

10. I managed the expansion of the pest animal control operation at the Aongatete Forest Restoration project. This involved design and implementation of a new multi-species control network across more than 100 ha, along with monitoring. I have also been involved with pest animal control operations for other community groups, including the Otanewainuku Kiwi Trust and was part of the kiwi management and kokako translocation teams.

11. I have read and am familiar with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court Practice Note 2023, and agree to comply with it. My qualifications as an expert are set out above. Other than where I state that I am relying on the advice of another person, I confirm that the issues addressed in this report are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of Report

12. This report is prepared under the provisions of Section 42A of the Resource Management Act 1991 (RMA). This section allows a council officer or consultant to provide a report to the decision-maker(s) on a resource consent application made to the council and allows the decision-maker(s) to consider the report at the hearing. Section 41(4) of the RMA allows the decision-maker(s) to request and receive from any person who makes a report under Section 42A "*any information or advice that is relevant and reasonably necessary to determine the application*".

13. This report is supplementary to the Section 42A Report prepared by the Environment Canterbury for the above resource consent applications. Full details of the consent applications are provided in that report.

14. To carry out this audit of the consent applications, I have:

    a. Considered the relevant sections of the assessment of effects on the environment (AEE) submitted by the applicant, including its technical appendices.

    b. Reviewed Revision 1 of the proposed consent conditions dated 23 August 2024 supplied by the applicant.

    c. Taken into account relevant issues raised by submitters in relation to the effects I have considered in this report.

    d. Visited the site on January 24th 2025.

15. Finally, this report provides conclusions on the scale and significance of adverse and positive effects.

16. If the decision makers are of a mind to grant the application, this report provides recommendations on conditions of consent, and management plan that are required to ensure adverse effects can be adequately avoided, remedied or mitigated.

Description of the Affected Environment

17. The application provides a comprehensive description of the existing environment, including the history of the site, cultural, ecological, geological and landscape context.

18. The site lies within the Oxford Ecological District and is described as 28 ha in size and on a west facing slope with the Karetu River to the west, farmland to the north and east and exotic forestry to the south. The northern part of the site (176 Quarry Road) comprises a 14 ha parcel of land containing a Waimakariri District Significant Natural Area, while the southern part of the site has been quarried for limestone since the early 1950s.

19. The Karetu River catchment in which the site is located comprises 3,119 ha on the southern slopes of the Okuku Range and Mount Karetu flowing south to the Grey and then Okuku Rivers. The catchment is entirely rural with landcover of predominantly high producing exotic grassland (45%) and exotic forest (24.3%), with only 13.5% remaining in indigenous habitats which is mostly in the upper catchment[1].

Avifauna methodology and values

20. The EcIA included a desktop assessment to ascertain the likely avifauna of the area using the eBird database[2]. This is a typical first step in a fauna assessment and is appropriate. In addition to the desktop assessment, avifauna was surveyed on nine occasions between September 2022 and June 2023, with three surveys in spring, three in summer (January), two in autumn and the final one in winter. The number of surveys and the spread across the year was commensurate with the likely level of effect and could be expected to provide adequate detail on the bird species using the site.

21. However, no detail on how surveys were undertaken or whether the whole site was covered on each occasion were supplied. It is assumed that walk-through surveys were undertaken but it would have been good to have the route taken and the method used explicitly stated. Although more detail on the methodology should have been provided, I do not consider that this would have fundamentally affected the outcomes of the ecological values assessment or the assessment of effects.

22. The approach taken to assess ecological value and effects is consistent with the EIANZ guidelines (Roper-Lindsay *et. al.* 2018). These guidelines have been criticised for potentially downplaying values and effects and being used to justify loss. However, they provide a solid framework for assessing ecological impact provided they are used with care and ecologists sense check the results using expert judgment. The author of the EcIA mentions the need to apply judgment and in the case of avifauna has done so.

23. Through desktop and field surveys the Ecological Impact Assessment (EcIA) identified 36 bird species known or likely to occur on the site or in the Zone of Influence (ZOI), including two Threatened and two At Risk species[3]. Fifteen species were directly observed on the site. A pair of kārearea (New Zealand falcon, Threatened – Nationally Vulnerable) were recorded travelling through the site, and little shag (At-Risk – Relict)

[1] Analysis derived from the New Zealand Landcover Database v5. Landcare Research.
[2] Sullivan, B.L., C.L. Wood, M.J. Iliff, R.E. Bonney, D. Fink, and S. Kelling. 2009. eBird: a citizen-based bird observation network in the biological sciences. Biological Conservation 142: 2282-2292.
[3] Robertson HA, Baird KA, Elliott GP, Hitchmough RA, McArthur NJ, Makan TD, Miskelly CM, O'Donnell CFJ, Sagar PM, Scofield RP, Taylor GA, Michel P. 2021: Conservation status of birds in Aotearoa New Zealand, 2021 . New Zealand Threat Classification Series 36. Department of Conservation, Wellington. 43 p.

was detected through eDNA sampling in the Karetu River. The other two threatened or At-Risk species (black-fronted tern and South Island pied oystercatcher) were thought unlikely to occur on the site. Other birds observed on the site were common native species or exotics typical of open and partially forested rural areas. For birds not observed through field survey an indication of the likelihood of them occurring on the site was included in the EcIA.

24. The survey methodology used, including the desktop assessment, is generally appropriate for the site and the project and it is unlikely that any rare, threatened or unusual species would have been missed. After email correspondence with Grant Davey of the Ashley Rakahuri Rivercare Group I consider it very unlikely that threatened braided river birds such as black-fronted tern or banded dotterel regularly utilise the Karetu River or the site.

25. When I visited the site in January 2025, I observed three kārearea which were actively hunting within the quarry. These may have been a pair and a juvenile, but I cannot confirm this. They were utilising tall pine trees around the site and the bluffs at the southern end of the SNA as perches from which to hunt prey. I observed them hunting across the quarry site for the two hours I was there. Although the applicant's ecologists recorded falcon traversing and resting in the site the value of the site to these birds is not well covered.

26. The ecological value of the avifauna on the site was assessed using the EIANZ criteria and the criteria in the Canterbury Regional Policy Statement (**CRPS**) to give an overall Moderate value, which I agree with. The presence of kārearea traversing the site and little shag detected through eDNA may not be enough to warrant a Very High score for rarity and distinctiveness but under the EIANZ system the overall score would still be Moderate even if the rarity and distinctiveness criterion was High or Moderate. The wider site was rightly classified as significant under the CRPS because of the presence of kārearea.

27. However, after considering the Moderate score assigned to avifauna, the author of the EcIA applied professional judgment to lower the score to Low. This was based on the fact that the surveys covered the whole property owned by the applicant (including the SNA area), but the impact area covered a much smaller area at the southern end of the site. This is a slightly confusing way to undertake the assessment because in this case a large part of the area surveyed and included in 'the site' is outside of the ZOI, which was defined as within 50 m of works or disturbance areas. All the species found in the wider site (that includes the SNA) could also utilise parts of the ZOI, although I acknowledge that the habitat is less suitable, so lowering the score from Moderate to Low is difficult to justify.

28. Given my own observations of kārearea at the site, including the way they were utilising the site, I think it is difficult to justify the observation that these birds were only 'traversing the site' and more information would be needed on their site use to support the drop from Moderate to Low value.

29. In my opinion, a more appropriate way to undertake the assessment is to retain the Moderate value and reduce the magnitude of effect of the works on avifauna (if appropriate to do so) because any effect would be only on a small number of individuals or on low quality avifauna habitat.

Pest animal methodology and prevalence

30. A pest animal survey was undertaken as part of the EcIA. This included site walkovers and incidental observations of pest sign such as tracks, scat and browse, as well as a dedicated survey of small mammals using tracking tunnels.

31. Surveys targeted only hedgehogs, rodents and mustelids and no specific survey was carried out for possums, rabbits or hares. Nevertheless, nine pest species were confirmed to be using the site.

32. The survey effort was appropriate and although detailed methods were only provided for the tracking tunnel survey, the approach was adequate, and most of the pest species likely to be on the site were identified. The exceptions are mustelids, and particularly ferrets and stoats which are highly likely to utilise this site as part of a wider hunting territory.

Assessment of Effects on the Environment

Actual and Potential Effects on Avifauna

33. Relevant works and activities under the proposal include extraction and processing of lime and overburden during the operation of the quarry, construction of roads, ponds, and sediment controls during the construction phase, regular heavy vehicle movements, and vegetation clearance.

34. It is important to note that the Significant Natural Area to the north of the site will be completely avoided, except for the construction of a stock proof fence around the perimeter which will have no impact on avifauna.

35. The potential adverse effects of the proposal on avifauna are discussed in the EcIA and include noise, dust, and vibration disturbance as well as destruction of bird habitat. A more quantitative assessment of the amount of habitat being lost and which species are likely to be affected would have been beneficial, especially as it relates to absolutely protected indigenous species.

36. The magnitude of unmitigated effect on avifauna was assessed as negligible which I think is understated given that habitat for indigenous bird species is being destroyed and there is potential for nests to be destroyed. Overall, the level of unmitigated effect on avifauna was assessed in the EcIA as Very Low.

37. The assessment of effects on kārearea may also be slightly understated because there is at least potential for a greater level of effect than has been assessed. Although there is plentiful habitat for kārearea to the north in the SNA area, falcon are known to breed in cutover exotic pine plantation[4] and on bluffs and they could utilise part of the impact area for nesting. Given the existing level of disturbance this seems unlikely, but they appear to be breeding in close proximity to the quarry, and the proposed activities could result in destroyed nests or breeding failure. As kārearea are a Threatened species the National Policy Statement for Indigenous Biodiversity (**NPS-IB**) policy of applying the effects management hierarchy applies.

38. On that basis, the overall level of unmitigated effect of the works on avifauna, assigned as Very Low in the EcIA, may better be assigned as Moderate. The implications of this are that avoidance measures, specifically relating to kārearea, are recommended to be included in consent conditions. These are discussed in paragraph 42 below.

39. In my opinion impacts from the proposal on all avifauna apart from kārearea will be minimal and limited to short-duration disturbance events not dissimilar to the status quo, and minor loss of low-quality habitat for indigenous species. There is potential for disturbance or destruction of nests of indigenous avifauna which are absolutely protected by the Wildlife Act 1953, but I do not consider that this constitutes any more

[4] Seaton, R.; Hyde, N. 2013 [updated 2022]. New Zealand falcon | kārearea. In Miskelly, C.M. (ed.) New Zealand Birds Online. www.nzbirdsonline.org.nz

than a Low level of effect in the RMA sense and remains a Wildlife Act compliance matter.

40. To comply with the objectives and policies of the NPS-IB, the EcIA has adopted a precautionary approach and recommends several measures to manage what effects there are on avifauna. These include:

    a. Development and implementation of a Bird Management Plan (BMP), to include:

        i. Restrictions on work during bird nesting and fledging periods.

        ii. Details on management of effects.

        iii. Procedures for discovery of active nests.

        iv. Development of an Accidental Discovery Protocol for threatened and At-Risk species.

    b. Development of a Vegetation Management Plan which will detail plantings to enhance habitat for birds.

    c. Mammalian pest control as part of a Site Management Plan.

41. The development of a BMP has not been carried through to the applicant's proposed condition set.

42. In the absence of kārearea I would not recommend a BMP or specific conditions relating to birds. However, as there is a risk that kārearea could be using the ZOI and could be impacted by the proposal, a condition requiring a suitably qualified and experienced ecologist to undertake a search for kārearea nests prior to any expansion of earthworks or vegetation clearance during their peak breeding season (September to March) is recommended. If nests are found, the area should be avoided, and an appropriate buffer set up until the chicks have fledged. The applicant's ecologist should be required to provide a brief report to the consenting authority on the findings of any such nest search and the management measures to be undertaken. An advice note on compliance with the Wildlife Act 1953 should also be included.

Pest animal management

43. Although not required to manage the effects of the proposal, the applicant is proposing to fence the SNA to the north of the site to exclude livestock. This will protect the high-value indigenous flora and fauna in the SNA from browsing ungulates and represents a positive effect.

44. Pest animal control is also recommended in the EcIA to protect the proposed indigenous plantings within the site and to protect lizard populations. This level of pest animal management is appropriate, although I defer to Dr Tocher on the efficacy of the proposed control for lizard protection.

45. A condition requiring pest animal control has been included in the proposed District and Regional land use consents. This condition should include a purpose of the pest animal control to reduce the risk that non-targeted, ineffective pest control will be done. It should also include a timeframe and should include control of mustelids.

Off-setting of, or Compensation for, Actual and Potential Adverse Effects to Ensure Positive Effects on the Environment

46. Although not required to offset any residual adverse effects on avifauna, two proposed consent conditions may contribute to a net gain in avifauna values at the site:

a. The Development of a Vegetation Management Plan which will detail plantings to enhance habitat for birds; and

b. The establishment of pest control as part of a Site Management Plan.

47. Provided conditions requiring avoidance of kārearea nests are also included, these two conditions will result in a positive effect on avifauna.

Consideration of Submissions

48. At least five hundred submissions were made on the application from individuals, community organisations, and companies. All submissions were summarised and key word searches were done to find submissions relevant to avifauna and pest animals. These were then read in full.

49. In paragraphs 50 to 60 below, I discuss the main topics raised by submitters.

Avifauna

50. A large number of submissions mentioned effects on birds or wildlife in general. These varied in the level of specificity but were generally relating to the following potential or perceived effects on birds:

a. Adverse effects on birds resulting from contaminants entering the environment via dust or discharge of leachate. This included concern about impacts on the bird habitats of the Ashley River downstream of the site;

b. Disturbance of birds by increased levels of noise from traffic and other activity associated with the site;

c. Non-specific effects on flora and fauna from the activity as a whole; and

d. An increase in scavenger birds.

Contaminants

51. Several submissions mention the potential for contaminants to enter the Karetu River, particularly from leachate, and the effect this could have on water quality, the aquatic ecosystem and on threatened and significant river birds which utilise the braided river system. Although this potential issue has not been addressed by the applicant in relation to avifauna, the potential effects on aquatic ecosystems and water quality, on which some birds rely, have been addressed.

52. The applicant has detailed a series of controls to prevent leachate entering the river or the groundwater, along with monitoring of water and the aquatic ecosystem, and assessed the level of effect from potential pollution on aquatic fauna as Low prior to management, and as a net gain with the proposed management.

53. The likelihood of the proposed activity polluting the Karetu River and the vectors through which that might happen are outside my area of expertise and I leave others to comment on these issues and the adequacy of the proposed controls. However, it is my understanding from the evidence of Ms Tiernan[5] that there is the possibility that leachate could enter the river and groundwater under several scenarios. Should this happen, there may be adverse effects on avifauna along with other components of the ecosystem.

54. A range of potentially toxic substances have been identified as possibly occurring in the landfill leachate, including ammonium, arsenic, chromium and boron. I understand from

[5] s42a report of Fleur Tiernan.

the evidence of Dr Silver[6] that per- and poly-fluoroalkyl substances (**PFAS**) are also likely to be present in leachate despite known sources of these substances being banned from the landfill. Some PFAS (e.g. PFOS) are known to adversely affect breeding success of avifauna[7,8]. These chemicals also bioaccumulate, meaning levels in animals higher up the food chain become much higher than in those lower down, and they pass readily from mother to offspring[9]. In aquatic ecosystems PFAS can be ingested by invertebrates which are prey for river birds as well as for fish, which is turn may be preyed upon by birds.

55. The Ashley Rakahuri River is a braided river system which provides regionally or nationally significant breeding habitat for river birds including the Nationally Endangered[10] black-fronted tern (*Chlidonias albostriatus*), Threatened wrybill (*Anarhynchus frontalis*), and At Risk – Declining, black-billed gull (*Chroicocephalus bulleri*). Any potential threat to these species and the habitat they rely on needs to be carefully considered and properly characterised and quantified. In the application material this has been done for aquatic ecosystems but not for the avifauna that rely on them for food.

56. A draft guideline value (DGV) for PFOS in freshwaters was published in May 2023[11] and guideline values for avifauna food and eggs derived from Canadian data were published in 2019 by MfE[12]. The freshwater DGV does not account for bioaccumulation and it is recommended that the 99% species protection value is used for slightly-to-moderately disturbed ecosystems.

57. I support the monitoring recommendations made by Ms Tiernan in paragraphs 107 to 110 of her reporting evidence as a means by which to gauge risk on downstream avifauna, but I note that once PFAS are in the waterway, removing them would be extremely expensive, if it is even possible. While monitoring water quality closer to the high value avifauna habitat in the Ashley Rakahuri River and monitoring concentrations of PFAS in aquatic invertebrates or in eggs may give better information on the effects on avifauna, preventing contaminants from entering the waterway in the first place is the only way to guarantee their protection.

Disturbance of birds

58. Several submissions raised concerns over disturbance of birds by increased levels of machinery movement and activity at the site, and some submissions, including that of Mr Mackintosh[13], talk about kārearea regularly nesting along the limestone ridge on which the quarry is situated and express concern for their wellbeing.

59. I have discussed potential disturbance of kārearea in paragraphs 36 to 42 above and I do not have any major concerns for other bird species, given the activities will be of a similar nature as the status quo, albeit more regular. In my opinion the only concern is

[6] s42a report of Dr Matthew Silver.
[7] Odegard, A., E. Pavlovic, A. Pesano, AND M. Etterson. Exposure and Effects of PFAS on Birds. Twin Ports Freshwater Folk Meeting, Duluth, MN, February 01, 2023. https://doi.org/10.23645/epacomptox.22587274
[8] Custer CM, Custer TW, Dummer PM, Etterson MA, Thogmartin WE, Wu Q, et al. 2014. Exposure and effects of perfluoroalkyl substances in tree swallows nesting in Minnesota and Wisconsin, USA. Arch Environ Contam Toxicol 66:120-138
[9] Ricolfi L, Taylor MD, Yang Y, Lagisz M, Nakagawa S. Maternal transfer of per- and polyfluoroalkyl substances (PFAS) in wild birds: A systematic review and meta-analysis. Chemosphere. 2024 Aug;361:142346. doi: 10.1016/j.chemosphere.2024.142346. Epub 2024 May 15. PMID: 38759804.
[10] Robertson HA, Baird KA, Elliott GP, Hitchmough RA, McArthur NJ, Makan TD, Miskelly CM, O'Donnell CFJ, Sagar PM, Scofield RP, Taylor GA, Michel P. 2021: Conservation status of birds in Aotearoa New Zealand, 2021. New Zealand Threat Classification Series 36. Department of Conservation, Wellington. 43 p.
[11] ANZG 2023, Toxicant default guideline values for aquatic ecosystem protection: Perfluorooctane sulfonate (PFOS) in freshwater. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. CC BY 4.0. Australian and New Zealand Governments and Australian state and territory governments, Canberra, ACT, Australia.
[12] Ministry for the Environment. 2019. PFAS investigation, response and funding guidance. Wellington: Ministry for the Environment.
[13] Submission of Duncan Stuart Mackintosh dated 9 October 2024.

disturbance of nesting kārearea and I have recommended in paragraph 42 that a condition be included to manage this risk.

Scavenger Bird Issues

60. At least one submission[14] raises concern that scavenger birds and rodents will be an issue. In my opinion, given that no household or food waste is to be allowed at the landfill, this concern is not justified.

Conclusions and Recommendations

61. Overall, I consider that the proposal is likely to have only a Low level of effect on avifauna with two exceptions:

    a. Potential adverse effects on kārearea could be of a Moderate level and need to be managed;

    b. Potential downstream adverse effects on threatened avifauna in the Okuku and Ashley/Rakahuri rivers resulting from contaminants entering the Karetu river need to be carefully considered.

62. To manage potential effects on kārearea, I recommend including a condition requiring a suitably qualified and experienced ecologist to undertake a search for kārearea nests prior to any expansion of earthworks or vegetation clearance during their peak breeding season (September to March). If nests are found, the area should be avoided, and an appropriate buffer set up until the chicks have fledged. The applicant's ecologist should be required to provide a brief report to the consenting authority on the findings of any such nest search and the management measures to be undertaken. In addition, an advice note on compliance with the Wildlife Act 1953 should also be included.

63. The likelihood of river contamination occurring and the pathways by which this may occur are outside my area of expertise, but I support the monitoring recommendations made by Ms Tiernan, including the addition of PFAS/PFOS monitoring as a means of assessing potential risk on downstream avifauna.

[14] Submission of Dave Sewell. Dated 25 September 2024.

Appendix 3- Vegetation and Wetland Section 42A report, prepared by Dr Stephen Rate, SLR Consulting.

Before the Independent Hearing Panel appointed by the Canterbury Regional Council

IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF Application CRC243699 by Protranz International Ltd for operation of a quarry and landfill at 150 and 174 Quarry Road, Whiterock (Loburn)

Section 42A Officer's Report

Report of Stephen Ronald Rate

Introduction

Background

1. This report forms part of the Environment Canterbury's audit of the assessment of environmental effects (AEE) provided by ProTranz (the applicant) in support of resource consent application CRC243699.
2. This report will provide the decision-maker with information and advice related to:
    a. the actual and potential effects of the proposed activities on terrestrial vegetation and wetlands.

Qualifications

3. My full name is Stephen Ronald Rate. I hold a PhD in Ecology, obtained from the University of Otago in 2005. I have worked as an ecological consultant for the last 19 years, focusing on terrestrial and wetland systems throughout New Zealand. I have been based in Dunedin since 2007, joining SLR Consulting in 2022, where I am currently a Senior Ecologist.
4. My relevant experience includes undertaking assessments of ecological effects and significance assessments for a range of activities including airports, residential subdivisions, irrigation schemes, wind and hydroelectric energy schemes, afforestation, ski field expansions, and industrial and quarry developments.
5. I regularly undertake natural wetland assessments as required under the National Policy Statement for Freshwater Management (NPS-FM) (Ministry for the Environment 2024).
6. I have read and am familiar with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court Practice Note 2023, and agree to comply with it. My qualifications as an expert are set out above. Other than where I state that I am relying on the advice of another person, I confirm that the issues addressed in this report are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of Report

7. This report is prepared under the provisions of Section 42A of the Resource Management Act 1991 (RMA). This section allows a council officer or consultant to provide a report to the decision-maker(s) on a resource consent application made to the council and allows the decision-maker(s) to consider the report at the hearing. Section 41(4) of the RMA allows the decision-maker(s) to request and receive from any person who makes a report under Section 42A "*any information or advice that is relevant and reasonably necessary to determine the application*".

8. This report is supplementary to the Section 42A Report prepared by the Environment Canterbury for the above resource consent applications. Full details of the consent applications are provided in that report.

9. To carry out this audit of the consent applications, I have:

    a. Considered the relevant sections of the assessment of effects on the environment (AEE) submitted by the applicant, including its technical appendices.

    b. Reviewed further information that was provided by the applicant: 1-E0087.00 Whiterock Landfill Post Lodgement Response to ECan RFI Section 4 – WET dated August 2024, wetland aspects of the Groundwater and Surface Water Effects Assessment dated15 May 2024, Revision 1 of the proposed consent conditions dated 23 August 2024 supplied by the applicant, revision B of the Monitoring Programme and Triggers and Action Response Plan (TARP), and the responses to s92 information requests (Wetland Ecology).

    c. Taken into account relevant issues raised by submitters in relation to the effects I have considered in this report.

10. This report provides conclusions on the scale and significance of adverse and positive effects.

11. In addition, a site visit was undertaken on 27 May 2024 which entailed a site walkover and discussion with the applicant's ecologist.

Description of the Affected Environment

12. The application and accompanying Ecological Impact Assessment (EcIA) provides a very broad overview of the site, describing the site's location within the Oxford Ecological District, adjacent to the Karetu River, the Waimakariri District Significant Natural Area (SNA 039), the limestone escarpment, and the site's setting within largely agricultural land[1].

13. The application outlines the proposed works, zones of influence, and duration, and provides a summary list of actual and potential impacts on ecological values. In relation to terrestrial vegetation and wetlands the proposed works will include vegetation removal within the proposed quarry footprint and modification to groundwater and surface water hydrology near wetlands within the site.

Vegetation Assessments

14. The EcIA included a desktop assessment to review former vegetation cover of the site and surrounding area, and GIS layers of current vegetation mapping before onsite surveys of vegetation types were undertaken.

1.

[1] Appendix G Ecological Impact Assessment, Section 1.2 Site location, Description, and Ecological Context

15. The walk-through assessments that were undertaken to describe and map the vegetation and habitats present are an appropriate survey technique[2]. The assessment methodology was generally adequate although somewhat lacking in detail. For example, during the site visit, several plant species not listed in the species lists were observed. Due to the omission of many plant species, it is unclear whether any important species may have been overlooked. Nevertheless, due to high levels of modification at the site, the probability of important plant species being present outside the SNA is likely to be low.

Wetland Delineation and Description

16. The wetland delineation assessment[3] was undertaken in line with the requirements under the National Policy Statement for Freshwater Management (Ministry for the Environment 2024) and the wetland delineation protocols (Ministry for the Environment 2022). The findings generally concur with observations undertaken in the wetlands during the site visit.

17. Wetland extent is accurately demarcated at these sites. Mapping of wetland boundaries based on the vegetation community, hydrological features, topography and professional judgement[4] is considered appropriate.

18. The descriptions of the wetlands are generally sufficient, and include hydrology, plant species composition, and levels of modification.

19. I concur with the Ecological Impact Assessment (Appendix G) that both the upper and lower wetlands meet the definition of a natural inland wetland under the National Policy Statement for Freshwater Management.

Significance assessments

20. The significance assessments undertaken for wetlands are problematic.

21. In Tables 21 and 23 of the EcIA, the outcome of the significance assessments for wetlands is greatly influenced by the determination that no indigenous vegetation is present and therefore criteria 1-8 and 10 from the CRPS (Environment Canterbury Regional Council 2021) do not apply[5].

22. The determination of whether indigenous vegetation is present is mostly based on the cover of indigenous species in two wetland delineation plots in each wetland which are then averaged for each wetland, with a mean of <50% indicating the presence of exotic vegetation[6].

23. However, what constitutes indigenous vegetation is not defined in the CRPS. Second, two of the plots (one in each wetland) have greater than 50% cover of indigenous species indicating the presence of indigenous vegetation. Third, mosaics of indigenous and exotic vegetation are typically observed in wetlands and the entire wetland does not need to contain indigenous vegetation for indigenous vegetation to be present.

24. Based on the wetland delineation plot data and my own observations on site, it is my opinion that indigenous vegetation is present in both of the wetlands identified at the site, along with areas of exotic vegetation.

25. If indigenous vegetation is present in both wetlands, then the criteria in the CRPS have not been assessed correctly. The EIANZ guidelines (Roper-Lindsay *et al*. 2018) used in the assessment state that attributes to be considered for the Rarity/Distinctiveness

1.

[2] Appendix G Ecological Impact Assessment, Section 4.5 Flora and Vegetation
[3] Appendix G Ecological Impact Assessment: Appendix C – Wetland Delineation data
[4] s92 response, WET-001 (WSP 2024e)
[5] s92 response Section 004 Wetland Ecology, responses WET-002 and WET-005 (WSP 2024e)
[6] s92 response, Section 004 Wetland Ecology, response WET-002 (WSP 2024e)

criterion include whether the habitat type is naturally uncommon or has induced scarcity. Freshwater wetlands are much reduced at a national scale with <10% of their original extent remaining (Cromarty and Scott 1995). Freshwater wetlands are also rare in Oxford Ecological District (where the quarry is located) where it is estimated that they originally covered and still cover <1% of the district (Harding 2009).

26. It is my opinion that the wetlands at the site meet Rarity/Distinctiveness criterion 3 of the CRPS as they contain indigenous vegetation in a habitat type which has been reduced to less than 20% of its former extent in the region, or relevant land environment, ecological district, or freshwater environment. This assessment concurs with the examples of habitat types (including lowland wetlands) which meet criterion 3 in the guidelines for application of the CRPS ecological significance criteria (Wildland Consultants 2013).

27. In addition, Table 10 of the EcIA appears to show that SNA 039 also does not meet the significance criteria. This is clearly incorrect, as the Rarity criterion alone would be easily met due to the presence of a range of Threatened and At Risk plant species (Hutcheson & Reinders 2024). At least two of these species are located near the southern boundary of the SNA where it abuts the quarry area (personal observation).

28. It may have been more appropriate to assess the significance of areas within the quarry and the SNA separately, for clarity.

29. Nevertheless, the conclusions reached in the EcIA are considered accurate – that the highest values lie in the SNA (not adversely affected by the proposal) and the wetlands and watercourses.

Assessment of Effects on the Environment

Actual and Potential Effects on the Environment

30. The assessment of effects on terrestrial vegetation and wetlands provided in the EcIA is considered to be generally accurate.

31. The EcIA identifies that the highest value vegetation and habitats are present in the SNA and these will be avoided by the proposed activity. Effects of the landfill on terrestrial vegetation are largely limited to exotic vegetation.

32. The extent of works will avoid directly encroaching into the site wetlands and the associated eastern boundary watercourse, with the intent that surface flows to the wetlands remain unaffected. A minimum 10m setback from the upper wetland is proposed.

33. Works are expected to result in changes to groundwater discharge that will have some effect on the lower wetland through a reduction in groundwater recharge. Such changes could ultimately impact vegetation composition and the extent of the wetland[7]. The hydrology report indicates that mitigation in the form of redirecting intercepted groundwater to the wetland is proposed.

34. The pre-mitigation potential reduction in the area of a wetland may be relevant to rules regarding wetlands in the Canterbury Land and Water Regional Plan 2023.

35. The proposed Water Permit conditions (Condition 5) specifies that the ground water take must not cause a permanent reduction of extent of the lower wetland. There appears to be a disconnect between the anticipated effects outlined in both the ecology and hydrology reports and this requirement. The hydrology report indicates that mitigation in

1.

1. [7] Potential effects on wetland extent are mentioned, for example, in Appendix G Ecological Impact Assessment, Section 4.9.7.

the form of redirecting intercepted groundwater to the wetland is proposed. That report also notes the removal of the plantation pine trees is likely to have increased baseflows that would previously have been intercepted by these trees. The ecology report notes that selective plant choice for the lower wetland could be undertaken to help retain surface water.

36. There is no disagreement that without mitigation there will be an adverse effect on the wetland hydrology, and it is appropriate to manage this effect through consent conditions to provide surety that impacts on the wetland are avoided or minimised.

37. The level of adverse effects on the lower wetland are considered by the applicant to be low[8], based on low wetland values and a moderate magnitude of effect of long-term groundwater drawdown of up to 0.2 m at the wetland and up to 0.4 m up gradient of the wetland[9]).

38. However, if the lower wetland is considered to be ecologically significant due to the Rarity criterion being met, and assigned a Moderate ecological value on that basis (see paragraphs 20-25 above), while the magnitude of effect remains Moderate, then the level of adverse effects would be Moderate (based on Tables 6, 8, and 10 of the EIANZ guidelines for Ecological impact assessments (Roper-Lindsay *et al*. 2018)), which has implications for the level of mitigation required.

39. However, the EIANZ process does not fully account for the requirements of the NES-F, including working through the effects management hierarchy.

Off-setting of, or Compensation for, Actual and Potential Adverse Effects to Ensure Positive Effects on the Environment

40. The proposed mitigation for potential effects on terrestrial vegetation is considered appropriate. The mitigation measures proposed by the applicant include remediation of the landfill site following closure, hydroseeding, stock exclusion fencing on both sides of the eastern watercourse, and planting of eco-sourced indigenous species alongside the watercourse[10]. Monitoring of planting success and weed control is also proposed (e.g. CRC243700 proposed condition 46).

41. However, there is uncertainty with what is considered required as mitigation and what is being offered up by the applicant. For example, in Table 11 the Ecological Impact Assessment includes a proposed mitigation approach to “remediate the loss of any indigenous vegetation by replacing with indigenous eco-sourced vegetation”. It is unclear what area of vegetation loss this refers to or at what ratio vegetation loss should be replaced at. It would be useful to specify which areas of indigenous vegetation will be affected and mitigated.

42. Adverse effects on the lower wetland are proposed to be mitigated by enhancing seepage flows, providing additional surface water flows, and planting of indigenous species to retain surface water. These actions would better be considered remediation, not minimisation (as stated in the EcIA[11]), as they will be implemented after the effect on wetland hydrology has occurred.

43. The National Environmental Standards for Freshwater (NES-F) require that any effect on natural inland wetlands must be managed using the effects management hierarchy. I disagree with the s92 response that effects on wetlands are avoided, and therefore that the NES-F is not relevant, given that the justification provided includes examples of

1.

[8] Appendix G Ecological Impact Assessment, Section 4.9.6
[9] Groundwater and surface water effects assessment. Rev 0, Figure 5-3
[10] Appendix G Ecological Impact Assessment, Section 4.9
[11] Appendix G Sections 4.9.7 and 6.6

remediation (enhancing seepage flows, planting indigenous species to retain surface water) to address adverse effects.

44. From my understanding of the application, I have assessed adverse effects on wetlands using the effects management hierarchy in Table 1.

Table 1. Effects management hierarchy for effects on wetlands (National Environmental Standards for Freshwater)

Effects management hierarchy	Assessment
effects management hierarchy means an approach to managing the adverse effects of an activity on indigenous biodiversity that requires that:	
(a) adverse effects are avoided where practicable; then	Some effects on wetlands are avoided, such as direct damage to wetlands through earthworks, by the use of a protective buffer Groundwater modelling predicts adverse effects on the lower wetland (lowered groundwater discharge) which may result in changes to wetland extent and vegetation composition
(b) where adverse effects cannot be avoided, they are minimised where practicable; then	Minimisation is not proposed [presumably because it would require significant changes to the application]
(c) where adverse effects cannot be minimised, they are remedied where practicable; then	Proposed remediation includes enhancing seepage flows and planting of indigenous species to retain surface water
(d) where more than minor residual adverse effects cannot be avoided, minimised, or remedied, biodiversity offsetting is provided where possible; then	Biodiversity offsetting is not proposed as it is considered that adverse effects will be remedied
(e) where biodiversity offsetting of more than minor residual adverse effects is not possible, biodiversity compensation is provided; then	Biodiversity compensation is not proposed [although fencing and planting of riparian areas is planned to enhance wetlands above the baseline level]
(f) if biodiversity compensation is not appropriate, the activity itself is avoided	Not applicable

45. The updated monitoring programme for wetlands (Appendix M Monitoring Programme and TARP RevB), is proposed to include additional baseline monitoring before work commences, twice yearly monitoring, monitoring of groundwater levels at proposed shallow monitoring wells GW4-1, GW5-1 and GW6-1, monitoring of wetland extent, and inclusion of a Triggers and Action Response Plan (TARP). These measures are supported and will help ensure that any adverse effects are identified and addressed through review and adjustment of mitigation actions.

46. However, there is much uncertainty in the likelihood of the proposed mitigation method for the lower wetland being successful and that as a result, effects cannot be properly assessed. For example, mitigation options will be governed by space constraints and land stability[12] and therefore the most effective solution may not be available when required. In addition, it is not known whether taking water upgradient of the wetland to supplement flows to the wetland will itself have a negative effect on the wetland by reducing residual groundwater flows, or indeed whether baseflow supplementation will be successful at all. Planting of wetland margins with indigenous species could also reduce water flow to the wetland[14] increasing the level of required mitigation. While planting to retain surface water/formation of an artificial wetland is proposed as mitigation for adverse effects on the lower wetland in the Ecological Impact Assessment[13], it is not mentioned in the Monitoring Programme and TARP[14], and it is therefore uncertain when this action may be undertaken or modified as a result of monitoring. No options are provided should the proposed mitigation actions prove unsuccessful.

Management Plans

47. It is proposed that a Vegetation Management Plan (VMP) is prepared within 6 months of commencement of the consent[15].

48. There are brief descriptions of the requirements of a VMP[16]. It will be important that he VMP includes all works required to meet the proposed mitigation goals, including details on planting, fencing, and weed control.

49. A Wetland Management Plan (WMP) is also proposed, which intends to ensure no loss of value is caused to the lower wetland, although no detail on the content of the WMP is presented.

Appendix Y Proposed Conditions Rev1

50. CRC243699 Proposed condition 2. A 10 m setback from wetlands meets the requirements for earthworks under the Resource Management (National Environmental Standards for Freshwater) Regulations 2020. This condition could be improved by requiring the 10 m buffer to be clearly delineated and/or temporarily fenced prior to works commencing to avoid accidental encroachment of machinery or spoil into the wetland.

51. CRC243700 Proposed condition 47, Pg 18. In my opinion, the timescale specified is inappropriate and requirements for infill planting following original planting should be based on monitoring. This condition would be improved by deleting ‘years two to three’ and adding that infill planting should be undertaken yearly to satisfy the requirements of condition 48.

52. The requirement for development and implementation of a WMP has not been included in the proposed conditions of consent. The s92 response for further information stated that this was not required as it is not part of mitigation and wetland monitoring (and actions and responses) are covered by the Monitoring Programme and TARP. It is unclear whether the proposed supplementation of water flows to the lower wetland is also covered by the WMP. Planting of indigenous species to retain surface water within the lower wetland is covered by VMP. Nevertheless, I believe any proposed plan should be included in the conditions of consent.

1.
2. [12] Whiterock Limestone Quarry and Managed Fill Landfill Resource Consent Applications and Assessment of Effects on the Environment 28 March 2024 (page 47)
3. [13] e.g. in Section 4.9.7 and Section 6.6.
4. [14] Appendix M Monitoring Programme and TARP (Draft Rev B) Table G. Lower Wetland Extent.
   [15] Appendix Y Proposed Conditions Rev1, RC245076 Land Use consent, condition 31
   [16] Appendix G Ecological Impact Assessment, Section 6.4

53. CRC243700 Proposed condition 48, Pg 18. The 75% survival rate is low, with best practice typically being 80-90%. Justification for this low figure is warranted.

54. Proposed Conditions (Rev1), Schedule 1, Wetland Margin Enhancement. It is recommended that the objectives for each proposed activity regarding wetlands be included in this schedule, e.g. planting for hydrological retention, to help retain surface water in the lower wetland.

55. Proposed Conditions (Rev1), Schedule 1. It is recommended that the proposed conditions or goals included in Schedule 1 should include requirements for woody weed control over the entire part of the SNA within the property. This control would align with the priorities outlined in Hutcheson & Reinders (2024) for enhancement of the SNA. This is important because the proposed fencing of the SNA will reduce grazing pressure, and therefore weeds may increase in abundance.

Consideration of Submissions

56. A key word search (supplied by CRC) was used to determine relevant submissions, which were read along with a search of a further selection of submissions (299 submissions).

57. It was noted that the predominant concerns relating to ecological matters were regarding contamination of water, particularly in the Karetu River. Relatively few submissions mentioned terrestrial vegetation or wetlands.

58. Many submitters used general terms to express concern for potential effects on terrestrial values, including “flora”, “local ecosystem”, “biodiversity”, and “environmental” (e.g. submission of R. van der Bos). These submissions could not be assessed in detail.

59. The key word search identified three submissions relating to “vegetation”. C. Onellion is “concerned about the proposed vegetation clearance and earthworks near waterways”. D. Gibbs is concerned about “Excavations & vegetation clearance outside of river bed”. B. De Goldi is concerned about spread of contaminated soil to vegetation and waterways. These concerns are addressed by the applicant (e.g. dampening down dust, earthworks set-backs from wetlands, undertaking indigenous plantings on riparian margins).

60. The key word search identified nine submissions referencing ‘wetland’. One additional submission mentioning wetlands was also identified. Several of these submissions were generalist in nature. For example, the submission of S. Fitzjohn is in opposition to the consent “because is carries environmental risks in the forms of…the alteration of wetlands…” and J. McCaleb states in his submission that he is “concerned that the applicant has little consideration for … the wetlands within its own property”. While noted, these submissions could not be assessed in detail.

61. Some submissions are more detailed in their concerns regarding wetlands. For example the submission from White Rock Community Incorporated raises several points including:

    - vegetation types in each wetland are not adequately described.
    - loss of wetland vegetation and extent due to earthworks and reduction in groundwater recharge/dewatering.
    - the ecological value of the wetland is not “low”.
    - the WMP should be submitted as part of the application.
    - works will require consent under the NES-F.

    These issues have been addressed by the applicant and in this evidence.

62. The submission of R. Conelly raised further issues regarding wetlands including contamination of wetlands, rarity of wetlands, and water take within 100m of wetlands. These issues have been addressed by the applicant or in this evidence.

63. The submission of Rangiora Ashley Community Board asked “How can they guarantee the effects on water quality would be less than minor when it is not known whether the groundwater monitor sites are useable in the lower wetlands?”. This question was answered by the applicant following the s92 request for information regarding the use of monitoring stations GW4-1, GW5-1 and GW6-1 to monitor water levels affecting wetlands.

64. The submission summary identifies nine submissions with concerns relating to the nearby Significant Natural Area (e.g. submissions of Z. Brock, L. Munroe, and M. Stanton). The application proposes to avoid the SNA, and concerns relating to proposed enhancement of the SNA have been outlined in this evidence.

Conclusions and Recommendations

65. The description of the environment is generally accurate, and the wetland delineation assessment appears to have been undertaken correctly.

66. In my opinion the ecological significance assessment for wetlands does not consider the rarity of wetlands, both at a natural scale and within Oxford Ecological District. On that basis, it is considered that the site wetlands are likely to meet the rarity criterion and would be significant under the Canterbury Regional Policy Statement criteria. Nevertheless, the conclusions reached in the EcIA are considered accurate – that the highest values lie in the SNA (not adversely affected by the proposal) and the wetlands and watercourses.

67. The assessment of effects for terrestrial vegetation is generally accurate, and the proposed mitigation is considered appropriate.

68. The assessment of effects for wetlands is affected by the outcome of the significance assessment. It is considered that effects on the lower wetland are Moderate, not Low as assessed in the EcIA. However, both wetlands should be protected, as the proposed consent conditions[17] specify that no reduction in the extent of the lower wetland is permitted, and no earthworks are permitted within 10 m of wetlands. In addition, the proposed monitoring and Triggers and Action Response Plan (TARP) will help ensure that any adverse effects are identified and addressed through review and adjustment of mitigation actions.

69. There is much uncertainty in the likelihood of the proposed mitigation method for the lower wetland being successful. As a result, effects cannot be properly assessed.

70. An independent assessment (Hutcheson & Reinders 2024) identified weed control as the priority action to be undertaken in and adjacent to SNA 039 to protect the habitats of threatened plant species. The proposed fencing of the SNA, while supported, is likely to reduce browsing pressure, which may lead to an increase in weed abundance. Targeted weed control within the SNA for the duration of the consent would therefore be a good way to compensate for any adverse effects on ecological values that could result from the proposed landfill, and should be part of the consent conditions.

71. Several other relatively minor adjustments to the proposed consent conditions (paragraphs 48-53) would also provide more certainty that the proposed mitigation actions are successful.

1.

[17] Appendix Y Proposed Conditions Rev1, CRC243703 Condition 5, page 35

72. The concerns of submitters regarding potential adverse effects on terrestrial vegetation and wetlands have been addressed by the applicant or in this evidence.

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85. WSP 2024c. Appendix Y Proposed Conditions Rev1.
86. WSP 2024d. Whiterock Lime Quarry and Landfill. Groundwater and surface water effects assessment. Rev 0. 15 May 2024.
87. WSP 2024e. 1-E0087.00 Whiterock Landfill Post Lodgement Response to ECan RFI Section 4 – WET. August 2024

Appendix 4- Geotechnical Section 42A report, prepared by Clive Anderson, Tonkin + Taylor.

Before the Independent Hearing Panel appointed by the Canterbury Regional Council

IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF Application CRC 243699 to 243706

Section 42A Officer's report

Report of: Clive Kenneth Anderson (Tonkin & Taylor Ltd)

1 Introduction

1.1 Background

1 Protranz International Limited (Protranz) proposes to operate a limestone quarry and processing plant, and to establish a Class 3 Managed Fill (landfill), that will also accept contaminated soils that will meet the Class 1 landfill leaching criteria, at the existing Whiterock Quarry in Loburn, North Canterbury. Protranz has applied to both Waimakariri District Council (WDC) and Canterbury Regional Council (known colloquially as ECan) for a range of resource consents required for the establishment and operation of the proposed hybrid Class 1/Class 3 Managed Fill (landfill).

2 Tonkin & Taylor Ltd (T+T) has been engaged by WDC to undertake a technical review of the geotechnical and slope stability assessments lodged by Protranz in support of its resource consent applications.

3 The purpose of this Report is to set out the findings of our Technical Review of Protranz's geotechnical and slope stability assessments to support a Section 42A report and inform a decision by WDC and ECan on the resource consent applications.

4 The following documents have been considered as part of this technical review:

- **Appendix E – Geotechnical Assessment:** Prepared by WSP, Revision 3, dated 19 March 2024 (referred to as the Geotechnical Assessment).
- **Appendix F – Groundwater and Surface Water Effects Assessment:** Prepared by WSP, Revision 0, dated 26 March 2024.
- **Appendix H – Design Drawing Set (Rev1):** Prepared by WSP, Revision 0, dated 18 March 2024. Updated to Revision 1, dated 6 August 2024 (referred to as the Drawings).
- **Appendix J – Landfill Design Report, Section 6: Geotechnical:** Prepared by WSP, Revision 0, dated 25 March 2024 (referred to as the Landfill Design Report).

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- **Appendix Q – Slope Stability Assessment:** Prepared by WSP, Revision 1, dated 20 February 2024 (referred to as the Slope Stability Assessment).
- **Section 2 – Geotechnical Engineering: Response to ECan RFI:** Letter prepared by WSP, dated 16 August 2024.
- **RC245076 – 150 Quarry Road Section 92 Response, Section 3 – Geotechnical Engineering:** Letter prepared by WSP, dated 23 August 2024.
- **Those submissions received by CRC and WDC** that mention concerns about geotechnical aspects of the project.

5 This technical review has been undertaken by me, a Senior Principal Geotechnical Engineer at T+T. I have reviewed the aspects of the application relating to the geotechnical and slope stability assessments. This report has been prepared in accordance with T+T's letter of engagement with WDC, dated 22 May 2024.

6 The geotechnical assessment (Appendix E) focusses on identifying the key geological features external to the landfill body in the surrounding rocks and soil. Other than the landfill capping it does not discuss specifics of the landfill body design. That is reported elsewhere in the applicant's proposal.

7 The content of this report focuses on the key geotechnical issues, pertaining to the project consenting process arising from the applicant's geotechnical assessment. Where specific aspects of the geotechnical assessment have not been discussed it can be taken that I did not have any particular concern or disagreement with the applicant's geotechnical assessment and/or design.

8 I have considered the submissions that raise concerns about the geological conditions at the White Rock Quarry site. Several common concerns about the geological conditions have been raised by submitters. These are dealt with by responding to the specific issue raised rather than addressing each submission.

9 I visited the site and carried out a walkover of the quarry and its immediate surroundings on 25th June 2024.

1.2 Qualifications

10 I am a Principal Geotechnical Engineer with Tonkin & Taylor Ltd with 41 years of post-graduate experience working as a geotechnical engineer. My specific qualifications are:

1) NZ Certificate of Engineering (Civil);
2) Batchelor of Engineering (Civil) (Honours) from the University of Canterbury;
3) Master of Science in Soil Mechanics and Engineering Seismology (with Distinction) from the Imperial College, London University;
4) Diploma of Imperial College;
5) Diploma of Technology Management from Deakin University;
6) Chartered Professional Engineer (NZ);
7) Fellow of Engineering NZ.

11 My relevant experience encompasses a wide range of geotechnical projects within NZ, Australia, Singapore and Indonesia. Specific experience that is relevant to this project includes:

1) Assessment of a new museum that Whale Watch proposed for the Kaikoura Peninsula which required the assessment of the karstic limestone that is part of the local geology.

2) Assessment of the risk posed by karstic limestone to a sub-sea tunnelling project in Singapore. This assessment included engagement of a subject matter expert on karstic limestone from the University of Malaysia. I commissioned a sea based geophysical survey

of the seabed limestone searching for evidence of karstic features that may have developed prior to submergence following the most recent ice age and the subsequent sea level rise.

3) Provision of expert geotechnical evidence to changes to the Christchurch District Plan.

4) Review of Resource and Building consent applications for both Christchurch City and Whangarei District Councils. In Christchurch many of the building consent applications required review of future earthquake effects on land. In Whangarei District my consenting work has included providing advice on the risk of underground coal mine collapse to existing and new houses built above the disused mines.

5) Following the Kaikoura Earthquake in 2016 I was peer reviewer of the designs of the rockfall mitigation works above the railway and highway north and south of Kaikoura. NZTA was reliant on my design and report sign-off for the assurance that the works on the steep rock slopes had been designed to the required standard and defined risk criteria.

6) Design of the proposed 100 m high Cypress Coal mine highwall at Stockton, West Coast of New Zealand. This highwall design was impacted by high groundwater levels that required drainage and the regional scale Mt William Fault that intersected the highwall. Mining of coal was to take place at the base of the steep highwall.

7) Provision of expert geotechnical evidence in numerous legal disputes which has included mediation hearings and trials in the High Court.

8) I have carried out or supervised the investigations and analysis of the stability of numerous slopes in rock and soils. Notable projects include the investigation and stabilisation of the very large landslides adjacent to Lake Dunstan behind the Clyde Dam, analysis of a large-scale slope failure in rock on the Paiton Power Project in Indonesia plus numerous smaller slopes ranging residential sites impacted by storms to rock slopes routinely encountered along NZ's highways. My role on the Paiton Power project included service as an expert geotechnical witness in the International Court of Arbitration in London.

9) Assessment and design of the light industrial development sited on top of the landfill at Musgrove Close, Christchurch. The landfill comprised 5 – 6 m depth of uncontrolled building demolition waste from buildings demolished in Christchurch in the 1960's then dumped into a disused gravel pit. Groundwater rose and fell within the debris seasonally. A low permeability soil cap was placed on top of the debris to minimise surface water entry. Testing of the contaminants within the landfill material was carried out as part of the Council requirements for approval of the new industrial estate. Surcharging was placed on the cap to accelerate settlement of the landfill material. Dynamic compaction was used to consolidate the landfill below the access road. Settlement of the soil cap was monitored and the results served as inputs to the design of the sewage and stormwater systems and the access road. Lightweight industrial buildings capable of dealing with settlement were then built over the landfill. One heavy building, with a landfill gas control system, was piled through the landfill to the underlying gravels. All buildings and the services have performed satisfactorily to date.

10) I am currently both an author and reviewer of the Slope Stability Geotechnical Guidance Series being developed for use on NZ projects by the New Zealand Geotechnical Society.

1.3 Code of Conduct and Conflict of Interest declaration

12 I have read the Environment Court's Code of Conduct for Expert Witnesses contained in the Court's Practice Note of 2023. I have complied with that code in preparing this report and agree to comply with it in providing information or opinion to the Hearing Panel in relation to this matter. The aspects of the application addressed in my report are within my area of expertise and I have considered and stated all material facts known to me which might alter or qualify the opinions I express.

13 I have no commercial relationship with the applicant.

1.4 Scope of the Report

14 This report is prepared under the provisions of Section 42A of the Resource Management Act 1991 (RMA). This section allows a council officer or consultant to provide a report to the decision-maker(s) on a resource consent application made to the council and allows the decision-maker(s) to consider the report at the hearing. Section 41(4) of the RMA allows the decision-maker(s) to request and receive from any person who makes a report under Section 42A "*any information or advice that is relevant and reasonably necessary to determine the application*".

15 This report is supplementary to the Section 42A Report prepared by Environment Canterbury (ECan) for the above resource consent applications. Full details of the consent applications are provided in that report.

16 To carry out this audit of the consent applications, I have:

- Considered the relevant sections of the assessment of effects on the environment (AEE) submitted by the applicant, including its technical appendices.
- Reviewed further information that was provided by the applicant on 16 August 2024 in response to Section 92 questions.
- Taken into account relevant issues raised by submitters in relation to the effects I have considered in this report.
- Read the Section 42A reports prepared by Ms Sally Lochhead (Hydrogeology) and Mr Tony Kortegast (Landfill Engineering and Waste Containment).
- Read the Section 42A report of Matthew Silver of Canterbury Regional Council focused on groundwater and leachate issues.

2 Description of the Proposal

17 The proposed Whiterock Landfill will be formed within the void left by extraction of limestone for lime production which has been occurring since the 1950's. Limestone extraction is set to continue. The quarry has produced significant quantities of soil overburden which is proposed to be reused within the proposed landfill operation.

18 The application is for a Class 3 Landfill (Technical Guidelines for Disposal to Land, WasteMINZ 2023) to receive construction and demolition (C&D) waste, contaminated soils, controlled fill and clean fill. The fill material will include asbestos containing materials (ACM). It is understood that degradable organic materials will be prohibited. The applicant proposes contaminated soils with TCLP[1] limits for Class 1 Landfills (WasteMINZ 2023) be accepted at the landfill.

[1] Toxicity Characteristic Leaching Procedure: a standard test developed by the US Environment protection Agency to determine the levels of leachable organic and inorganic chemical species in leachates at landfills.

19 I understand from Mr Kortegast's Section 42A report (Section 2.1) that given the proposed mix of materials to be disposed at White Rock Quarry that the landfill (if consent is granted) is better termed a hybrid Class 1/Class 3 Managed Landfill.

20 The total landfill footprint is about 4 ha. The completed landfill volumes is about 500,000 m^3.

21 The design drawings (Appendix H) and report (Appendix J) show the landfill will have a Class 1 landfill engineered liner based on the proposed acceptance of contaminated soils with TCLP limits for Class 1. The purpose of the Class 1 liner is to minimise the risk of leachate leakage through the liner. The design requires the collection of leachates above the Class 1 liner which then flows into a leachate collection pond prior to removal off-site to a waste water treatment plant most of the time. Recirculation of the collected leachate within the waste is proposed if climatic conditions allow.

22 The landfill will be constructed in two stages, each stage with similar phases comprising earthworks, installation of the underdrainage system, landfill bottom liner, and a leachate collection system. The construction of the leachate pond forms part of Stage 1.

23 Before the landfill body is constructed the WSP Preliminary design drawings show that prior to building the engineered lining system the quarry void will be shaped so that the drainage of leachates at the base of the future landfill flows along the top of the liner towards a leachate pond to be built immediately beyond the southern end of the landfill body. The intended gradient of the liner is 1 V to 50 H or 2 % toward the leachate sump.

24 The landfill lining system itself comprises, amongst other elements, a 600 mm thick low permeability cohesive soil (i.e. clay) layer plus a 1.5 mm thick HDPE liner immediately on top of the soil layer. These two elements form the long-term primary containment system to prevent the loss of leachate out through the fill base into the wider environment. Leachate that reaches the landfill base will flow along the top of the HDPE liner through a 300 mm thick aggregate layer or one of the perforated leachate collection pipes placed at up to 25 m centres within the aggregate. From there it will flow into the leachate storage pond for collection.

25 An underdrainage system will be installed below the lining which is designed to intercept groundwater in natural ground below the landfill body and divert it away to either the Karetu River or into the leachate storage pond (if the water is contaminated). One of the design criteria for this system is to maintain natural groundwater levels to no higher than 1 m below the lining base.

26 The applicant has undertaken a field investigation program which has included a site walkover by experienced engineering geologists and a program of subsurface exploration by two test pits and nine boreholes. The investigation locations were the overburden spoil piles, the groundwater system(s), the quarry itself and the river crossing. Rock and soil samples gathered from the test pits and boreholes were tested in the laboratory.

27 The scope of geotechnical investigations is considered appropriate for the consenting phase of the project to define the potential long-term environmental effects of the landfill.

28 The geotechnical report contains recommendations at Appendix E Section 6.1 for the end of quarrying final "pit slopes". I endorse the proposed bench heights of 15 m maximum coupled with benches of 8 m minimum width from both stability and safety perspectives.

3 Key Aspects of the Geotechnical Environment

29 The quarry geology comprises a sequence of Tertiary age sandstones/limestone/siltstone rocks. This sequence forms a south plunging syncline with mining of the exposed limestone taking place on the western limb of the syncline. Bedding within the limestone dips down from west to east. No active faults have been mapped within the site and the nearest known major regional scale faults are 2 to 4 km away.

30 Subvertical joints perpendicular to the quarry highwall are spaced at about 30 to 40 m intervals along the highwall and may be a series of small, localised, normal and reverse faults with up to 5 m movement on them. Joints in the quarry face that run sub-parallel with the face have led to wedge failure mechanisms where they intersect with other joints and the small faults.

31 The local faults within the quarry have uplifted the limestone 30 to 50 m but the lack of any faulting through the surface loess soil layer indicates an absence of fault movement since the loess was deposited by westerly winds 10,000 to 20,000 years ago.

32 Signs of highwall/quarry face movement, in response to the quarrying process, have been recorded. These include tension cracks subparallel to benches in the highwall and batter instability where unfavourably oriented faults or joints occur. Water erosion of the fine sandstone of the Tokama Siltstone as runnels down the face has occurred.

33 Excavated overburden soils above the limestone resource have been stockpiled in a loose condition nearby with side batter slopes of about 30°. Some areas of instability of these slopes have occurred possibly triggered by local seepage.

34 Site groundwater observations are not presented in detail within the applicant's geotechnical report (Appendix E). This is presented in Appendix F (Groundwater and Surface Water Effects Assessment) and has been addressed in ECan's Section 42A report, and in T+T's Hydrogeology Technical review report[2] by Sally Lochhead. Consequently, I do not present any detailed assessment of the groundwater system in this report.

35 My examination of Figure 4-4 and Table 4-2 in the Appendix F report indicates that a simple model of the groundwater flow could be as follows:

- 1) Groundwater heads in the Whiterock limestone and underlying Berrydale Greensand are at about 225 m (NZVD).
- 2) The topographical RL of the Karetu River alongside and below the existing quarry void is about 210 m (NZVD).
- 3) Therefore the shortest flowpath (about 200 m long based on Figure 4-4) for fugitive leachate would be directly through the limestone and greensand rocks directly into the Karetu River if a suitable flow path through the rock mass is available. This would be the most conservative assumption for assessing the impact of any leachate discharge into the wider environment beyond the landfill.

36 There are existing shallow landslides external to the quarry, one of which is about 30 m wide and 100 m east of the quarry. This may have moved toward the quarry in the period 2010-13 based on the applicant's assessment of Google Earth images.

4 Environmental Effects arising from the Geotechnical Assessment

37 Movement on the observed small-scale faults within the quarry is unlikely during the life of the landfill. There is no evidence of movement on these faults since the overlying loess soils were deposited following the end of the last ice- age about 12,000 years ago (Ref Appendix E Section 5.1.2). Therefore, a loss of contaminants caused by short fault rupture of any containment structure is unlikely during the life of the landfill.

38 I consider now the concerns expressed by submitters about faults in the area:

- Some submitters expressed concern about the potential for nearby large fault movement to damage the landfill. If local movement did occur on a fault that passed through the landfill, then damage could occur to the containment liner but as I state

[2] Tonkin & Taylor Ltd (2025). *Section 42A Officer's Report of Sally Elizabeth Lochhead*, March 2025, T+T Ref. 1094013.0001.

above I agree with the applicant that the available evidence indicates that this is very unlikely.

- The normal response to the potential for large scale fault movement within the quarry walls is to ensure that the likelihood (or probability) of movement on these faults is acceptably low.
- However, in Section 5.1.2 (Discontinuities) of the WSP Geotechnical Report March 2024 it states that the expected return period of movement on the known active faults in the region is believed to be "*in the order of hundreds of thousands of years*". This statement appears to be in error as the Mt Lawry Fault 2km from the quarry is mapped as a fault offset and monocline fold offsetting the Q2 glacial outwash surface which is bracketed at 10,000 to 25,000 years old. The Mt Lawry Fault is defined as a definite fault awareness zone on Canterbury Maps and described as offsetting an estimated 18,000-year-old landform in GNS Science report 2012/236 (General distribution and characteristics of active faults and folds in the Waimakariri District North Canterbury).
- These long-estimated time periods since fault movement on nearby active faults and small-scale faulting in the quarry indicate an acceptably low probability of direct fault rupture during the expected life of the landfill which I acknowledge will be in perpetuity.

Therefore, based on the above long time periods between fault movements, I conclude that the likelihood of any nearby fault damaging the proposed landfill is acceptably low.

39 The impact of the wedge failure mechanisms on the landfill design was queried during my initial review of the application. The applicant's response states that the wedge failures are "*relatively uncommon*", of "*small volume and do not significantly affect the overall stability of the slopes. The wall liner detail can accommodate any small-scale wedge failures that occur following slope cutting*". I observed these potential failure mechanisms during my site visit on 25 June 2024 and ***based on my geotechnical experience and engineering judgement I concur with the applicant***.

- Some submitters are concerned that "unstable" limestone rock could damage the containment liner. The unstable areas of the limestone rock mass noted in the geotechnical assessment by WSP, if not removed by trimming and excavation of the rock batter, can be stabilised directly by using rock bolts and shotcrete, or similar stabilising technique designed to prevent post construction movement of the rock and damage to the containment liner.

40 The applicant proposes to cap the landfill using currently stockpiled overburden soils. The WSP Landfill Design Report states that subsoil drainage may be included within the cap soil lining. The long-term capped landfill slope angles were queried under Section 92 and the applicant has responded stating that the final, long-term landfill slopes will be *"up to 3H:1V (approximately 18°)*". Despite a request for stability analysis results for the landfill cap, in terms of the factor of safety a response to this part of the question was not provided. However, using an infinite slope failure mechanism for the landfill cap, sloping at no more than 18°, I assess that the factor of safety for a dry slope (i.e. landfill cap) should be about 1.8 and for a fully saturated slope I assess the factor of safety could drop to about 0.7. ***Consequently, it will be important for the design of the final landfill cap to ensure that seepage water pressures are kept to a low level to prevent cap failures that could expose the underlying landfill materials***. ***This will require consideration of the ability of the low permeability spoil proposed as the landfill cap to retain and hold water within it along with the consequent implications for instability. This will necessitate incorporating specific drainage into the cap lining design. I note that this is proposed on the design drawings (Drawing C301) but with a cap thickness 1.5 m thick careful design of the drainage system will be required to preserve long term cap stability. I also note that Section 12.3.2 Cap***

subsoil drainage in the Appendix J Landfill Design Report may not be provided in final design. If that is the case, then the applicant will need to provide adequate geotechnical assessment to confirm that this drainage element is not required given my simple stability assessment results provided above.

41 Review of Appendix Q – Slope Stability Assessment sets out the stability analyses for the landfill body along with the chosen seismic ground motions. The landfill is assigned a nominal life of 100 years for the stability analyses and an Importance level 3 is assigned. This level requires the use of ground motion parameters of equivalent to a return period of 1000 years to be used in assessing stability. The stability analyses indicate that acceptable factors of safety are present for moderate shaking levels but that movement of the landfill body of up to 180 mm may occur along leachate containment system for the 1000-year design earthquake ground motions. If that movement occurred cracking of the containment system may occur. Subsequent observations of the leachate and under lining drainage system for any changes in leachate flows would be required to check for evidence of containment damage.

42 A Section 92 query was raised about the potential for existing landslides to move further and enter the quarry area (Appendix E Section 5.5). The applicant's response states that they believe the likelihood of that occurring to be low on the basis that the slope between the landslide and quarry is "*considerably flatter*" than the slope that the landslide has previously moved on. The applicant further states that the quality of the Google Earth images is sufficient to identify other landslide features such as tension cracks and hummocky ground. No evidence was found in those images of large-scale deep-seated landslides affecting the site***. I have examined the same Google images, visited the site and I concur with the applicant's assessment of local landslide risk to the proposed landfill area.***

43 The applicant proposes to reuse the site won materials during landfill operations and for landfill capping. Laboratory testing of two samples of the stockpiled soils indicate a low recompacted permeability of less than 10^{-9} m/s. A trial fill of these material is proposed. I note that the Appendix I (Vehicle Movement Calculations and Materials Balance Summary) indicates that of the 174,000 m^3 of site won materials about 164,000 m^3 will be reused on site with 6,200 m^3 of topsoil either reused from onsite or imported for a total soil requirement of 170,000 m^3. Consequently, there will only be a margin of 4000 m^3 (or 2 %) of surplus soils currently available. Therefore, should the available volume of soil for reuse within the quarry limits not eventuate then additional vehicle movements associated with importing the shortfall will be required. ***This is an issue that warrants further discussions regarding the applicant's proposal for refining what the impacts of that situation might be and how likely it is to occur. A contingency source for capping materials may need to be identified in case there is a shortage.***

5 Other Geological Issues Raised by Submitters

44 This section sets out my response to other geological issues raised by submitters but not explicitly dealt with in previous sections.

45 ***Earthquake Shaking Risk*** The landfill will have a design life of 100 years with an importance level of 3 which means it needs to resist the effects of earthquake ground motions with an average return period of 1000 years. The probability of the design ground motions occurring during the 100-year life of the landfill is about 10 %, or 1 in 10. Consequently, steep interfaces around the old quarry rock walls and over lying landfill could experience downward movement i.e. settlement or lateral movement of the landfill materials which may damage the containment liner. ***Therefore, the design of the liner will need to ensure that damage from downward movement on the steep quarry walls cannot occur and that any movement of the landfill body along the core.***

46 ***Karstic Limestone*** is formed when slightly acidic freshwater dissolves limestone over long time periods (1000's of years), to develop surface and subsurface features that form by the exploitation of existing rock defects such as bedding, joints and faults to provide open, locally high permeability pathways for fluid flow. Cave systems are the ultimate expression of this process. This is a concern to some submitters.

47 Geological study of the limestone rock (Appendix E Sections 5) and indicates that weathering led to development of minor (i.e. surface erosion features and not passages and caverns) forms of paleo karst topography on the upper limestone surface before deposition of the overlying Tokama Siltstone about 23 Million years ago. There is no indication of further karstic features developing in the limestone rock around the current White Rock Quarry since it was tectonically uplifted from a shallow sea floor over the past approximately 2 Million years. Observations by professional geotechnical engineers and engineering geologists have not found any such features. I did not see any such features on my site visit. Neither is there any evidence of collapse features on the ground surface around the quarry. Collapse features, often termed tomos, are commonly associated with the collapse of passages and caverns within karstic limestone.

48 However, I acknowledge that some submitters (O Meijer and Duncan Mackintosh) have pointed out that they are aware of evidence of karst features that have been found during the quarry life. It appears that these features were small in scale. ***It is my opinion, based on my reading of their submissions, that the features they observed were more likely than not to be small in scale and able to be rectified, if they are found, with good engineering design to preserve the integrity of the lining system. Therefore, the applicant's design should contain a contingency detail to fill/seal/drain any small karst features that are discovered. The landfill design report (Appendix J) acknowledges the potential for karst features to be found. If unexpectedly large karstic features were found on subsequent quarrying, then a reassessment of the containment design would be required.***

49 ***Porous Limestone*** Some submitters expressed concern about the limestone being porous and/or able to be eroded by acidic leachate that escapes from the landfill containment system.

Limestone can indeed be a porous rock due to its nature as a sedimentary rock formed from the deposition and cementation of the remains of marine organisms like coral and shells.

50 The porosity of limestone is determined by both primary and secondary porosity. Primary porosity is related to the depositional characteristics of the rock itself, such as the spaces between grains in a sedimentary rock. Secondary porosity is related to the post-depositional changes to the rock, typically connected with dissolution processes, fracturing or weathering over time, resulting in features like vugs (small cavities), joints, or fissures.

51 The limestone observed in the White Rock Quarry walls is a relatively massive muddy (micritic) limestone with poorly developed bedding and widely spaced persistent defects (20 to 30 m spaced small scale faults). The paleo karst features in the top of the limestone may result in higher secondary porosity than the main mass of the limestone. As such the overall porosity is relatively low compared to the range for the overlying Kowai Conglomerates and the underlying Karetu Silica Sands. I understand that this is reflected in the groundwater modelling that has been undertaken and reviewed in the evidence of S. Lochhead.

52 As noted in T+T's Landfill Technical review report[3], the landfill assessment indicates that large volumes of leachate are considered unlikely, and that leachate is unlikely to be acidic. Refer to the Section 42A report of A.P. Kortegast for more information.

53 For the proposed landfill there are two features which will counteract the natural porosity of the limestone and any concerns of submitters of an attack by acidic leachate.

[3] Tonkin & Taylor Ltd (2025). *Section 42A Officer's Report of Anthony Paul Kortegast*, March 2025, T+T Ref. 1094013.0001.

54 The first is the containment system which I understand will be robustly designed to reduce the risk of leakage of any leachate from the landfill encountering the underlying limestone. I summarised the water barrier features of this system in Section 2 above. If that system were to fail in a catastrophic manner and, if large, ongoing quantities of acidic leachate were able to encounter the limestone, then it would be possible for the limestone rock to chemically weather by a process known as dissolution. In this process the acid leachate would react and dissolve the alkaline calcium carbonate limestone increasing both the rocks porosity and permeability.

55 The second feature is that the leachate is unlikely to be acidic as set out by my colleague in Mr Kortegast's Section 42 A report.

56 ***Large Scale Landsliding*** One submitter expressed concern that landsliding on the scale seen along the Kaikoura Coast following the Kaikoura Earthquake in November 2016 might occur at White Rock Quarry. Strong locally centred earthquake shaking is likely to cause instability of some slopes in the White Rock Quarry area and possibly of the Quarry highwalls themselves.

57 However, the scale of catastrophic instability leading to large rockfalls on the Kaikoura Coast cannot be repeated at White Rock for the following reasons:

- The rock mass around the Quarry is not as intensely fractured nor standing as high as the slopes along the Kaikoura Coast so similar volumes of failure material into the quarry following strong shaking cannot develop. The rock slopes along the Kaikoura Coast are up to 300 m high whereas the highwalls around the White Rock Quarry are in the order of 40 to 50 m high.
- Failures around White Rock Quarry are more likely to be discrete rock blocks from the highwall. Small scale instability features are noted in the geotechnical assessment such as wedge and bench failures. In Section 4 on Environmental effects, I have noted the need for the landfill designer to consider stabilising these features to prevent damage to the containment system. If that is done properly then that process should reduce the likelihood of earthquake induced failure of the remnant quarry highwalls.
- As the landfill develops, its mass, resting against the supporting slopes, should increasingly create a stabilising effect against highwall failures. As a consequence the likelihood of a large-scale highwall failure, triggered by strong earthquake shaking, should progressively decrease with time as the landfill volume increases.
- Seismically generated movement of the landfill itself will be limited by its containment within the quarry void at the end of quarrying. I commented on the landfill body assessment above.

58 ***Leakage of Leachate into the wider Environment***

Many submitters have expressed concern about the potential for leachate to flow through the base of the landfill if the containment lining leaked for any reason. Some of the potential causes of leaks that concerned submitters included earthquake faulting (addressed above), the limestone being potentially karstic (addressed above) and aging of the HDPE lining.

The HDPE lining reaching the end of its life and starting to leak concerns many people. I've examined the design of the landfill base lining system and concluded that even if the HDPE lining eventually deteriorated and started to leak the leakage rate through the underlying clay soil lining 600 mm thick would be extremely slow. Properly constructed, this lining is required to have a maximum permeability of less than 1×10^{-9} m/s. What this would mean is that if leachate was ponded on top of the clay liner to the maximum design depth of 300 mm it would take 38 years for leachate to flow from the top to the base of the lining and into the wider environment.

The clay soil of the 600 mm thick liner is not subject to the same time related deterioration processes as the HDPE. The critical issue with the clay liner is to ensure that the correct

material type is selected and that the liner is properly constructed so that cracks cannot form in it due to post-construction shrinkage due to loss of moisture. Any such cracks would totally compromise the permeability of the lining system and leave only the HDPE lining to prevent loss of leachate into the environment. If the HDPE lining became degraded for any reason, then leachate is likely to escape from the landfill with the potential to flow down gradient through the limestone toward and into the Karetu River.

Therefore, it is essential to the long-term functioning of the leachate containment system that the 600 mm thick clay lining is built to stringent quality control requirements which includes sign-off by the landfill designer at the end of construction to verify that the clay lining system has achieved the required permeability without cracks forming.

6 Conclusion

I conclude that if the proposed landfill design is properly executed in the detailed design and then construction, then there is no geotechnical impediment to developing the proposed landfill.

However, this conclusion is totally dependent on the proposed containment system being properly constructed. This is because the local geology and topography would not provide effective long-term containment of fugitive leachate.

The critical element of the proposed containment system in my opinion is the 600 mm thick clay lining as that should have an unlimited effective life over which it continues to perform its function. If due to poor construction cracks formed through the clay and if the HDPE layer is damaged during construction and not repaired, then any leachate that escaped the underlying drainage system is likely to reach the adjacent Karetu River. This serves as the ultimate discharge point into the wider environment. The short distance from the quarry void to the river (about 200 m) and the nature of limestone would not prevent this occurring in the long run. This opinion is consistent with Sally Lochead's Section 42A report.

Consequently, in my opinion, constructing a high-quality containment system is the key to the ability to use the quarry void for the proposed hybrid Class1/Class 3 landfill.

Report prepared by:

Clive Anderson

Principal Geotechnical Engineer

Tonkin & Taylor Ltd

March 2025

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Appendix 5- Transportation Section 42A report prepared by Alan Gregory, Tonkin + Taylor.

Before the Independent Hearing Panel appointed by the Canterbury Regional Council

IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF Application CRC 243699 to 243706

Section 42A Officer's report

Report of: Alan Gregory (Tonkin & Taylor Ltd)

1 Introduction

1.1 Background

1 Protranz International Limited (Protranz, the Applicant) proposes to operate a limestone quarry and processing plant, and to establish a Class 3 Managed Fill (landfill) at the existing Whiterock Quarry in Loburn, North Canterbury (the site). Protranz has applied to Waimakariri District Council (WDC) for a range of resource consents required for the establishment and operation of the proposed landfill.

2 Tonkin & Taylor Ltd (T+T) has been engaged by WDC to undertake a technical review of the transport assessment and vehicle calculations lodged by Protranz in support of its resource consent applications.

3 The purpose of this Technical Report is to set out the findings of my update of the Technical Review, conducted by T+T Senior Principal Transport Planner Sam Wilkie, of the Protranz transport assessment and vehicle movement calculations to support a Section 42A report and inform a decision by WDC on the resource consent applications.

4 The following documents have been considered as part of this technical review:

- **Appendix H – Design Drawing Set (Rev1):** Prepared by WSP, Revision 0, dated 18 March 2024. Updated to Revision 1, dated 6 August 2024 (referred to as the Drawings).
- **Appendix I – Vehicle Movement Calculations and Materials Balance Summary:** Prepared by WSP, no date (referred to as Vehicle Calculations).
- **Appendix U – High Level Transport Assessment:** Prepared by WSP, Revision 0, dated 9 August 2023 (referred to as Transport Assessment).
- **RC245076 – 150 Quarry Road Section 92 Response, Section 4 – Transport:** Letter prepared by WSP, dated 23 August 2024.

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5 I have been involved in Mr Wilkie's earlier assessment as technical reviewer and agree with the conclusions drawn.

6 I visited the site on 19 March 2025 and reviewed the road corridor between Rangiora and the end of Quarry Road to assess the road environment and observe road user behaviours.

1.2 Code of Conduct and Conflict of Interest declaration

7 While not required for a Council hearing for a resource consent application, I have read the Environment Court's Code of Conduct for Expert Witnesses contained in the Court's Practice Note of 2023. I agree to comply with that code when giving evidence to the Hearing Panel in this matter. All my evidence is within my expertise, and I have considered and stated all material facts known to me which might alter or qualify the opinions I express.

8 I confirm that the issues addressed in this brief of evidence are within my area of expertise, except where I state I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

9 I have no commercial relationship with the Applicant, save in my role as an expert in relation to this application or other concurrent work for the Applicant as an independent expert.

1.3 Qualifications

10 I hold the qualification of MSc in traffic and transportation. I am a Chartered Professional Engineer (CPEng), a Chartered Member of Engineering NZ (CMEngNZ) and a Member of the Institution of Civil Engineers (MICE).

11 I am Principal Transport Planner with Tonkin & Taylor Ltd (T+T) in Hamilton and have been for five years. Prior to that I was Transport Team Leader with MWH for 3 years and Principal Transportation Engineer with Opus International Consultants for 8 years. I was National Chair of the Engineering NZ Transportation Group between 2016 and 2019. Before 2006 I worked in the UK in the civil engineering and transport industry.

12 I have 30 years of experience in traffic transportation and roading engineering in New Zealand, the Pacific Islands, and the UK. I have extensive knowledge and experience of the New Zealand transportation network. I have 18 years' experience in the evaluation and assessment of transportation effects of development throughout the country including landfills at Tirohia, Redvale and Whitford, and have acted as an independent expert witness for NZTA, local authorities, and the private sector over that time.

1.4 Scope of this report

13 This report is prepared under the provisions of Section 42A of the Resource Management Act 1991 (RMA). This section allows a council officer or consultant to provide a report to the decision-maker(s) on a resource consent application made to the council and allows the decision-maker(s) to consider the report at the hearing. Section 41(4) of the RMA allows the decision-maker(s) to request and receive from any person who makes a report under Section 42A "*any information or advice that is relevant and reasonably necessary to determine the application*".

14 This report is supplementary to the Section 42A Report prepared by Waimakariri District Council (WDC) for the above resource consent applications. Full details of the consent applications are provided in that report.

15 To complete this report of the consent applications, I have:

- Considered the relevant sections of the Assessment of Effects on the Environment (AEE) submitted by the Applicant, including its technical appendices.
- Reviewed further information that was provided by the Applicant on 16 August 2024 in response to Section 92 questions.
- Taken into account relevant issues raised by submitters in relation to the effects I have considered in this report.

2 Description of the Proposal

16 The proposed Whiterock Landfill is at the location of an existing lime quarry at 150 Quarry Road, Loburn in the Waimakariri District. The Site is approximately 1.5km North of the intersection with Loburn Whiterock Road and Taaffes Glen Road.

17 The Applicant has identified a low increase in traffic movements associated with the proposal and has undertaken a transport assessment identifying the effects of this increase in traffic movements. The estimate of traffic movements was identified based on the expected landfill waste arriving to site, the landfill construction, as well as the movements associated with transporting lime and excess overburden off site. The calculation of the estimate is included in Appendix I of the AEE.

18 I consider that the scope of the transport assessment is appropriate for the consenting phase of the project to define the potential effects, and I generally agree with the Applicant's statements of the transport effects of the proposal.

3 Key Aspects of the Transport Environment

19 Quarry Road is administered by the Waimakariri District Council. The Applicant notes that Quarry Road is classified as a Rural Road according to the One Network Framework (ONF), the surrounding network area has an unposted speed limit of 100 km/h and has an estimated traffic volume of 149 vehicles per day, of which around 40 are estimated to be heavy vehicles (27% heavy vehicles). The Applicant has indicated that the current quarry activities generate between four and six truck, and on average six light vehicle movements per day. I have reviewed these matters and agree with the Applicant's assessment.

20 Quarry Road provides access to approximately 15 properties which are zoned as Rural General in the District Plan and connects to a network of other roads that provide access to forestry blocks which appear to be at different stages of harvest. While the Applicant estimates that the traffic volume on Quarry Road could grow by around 2% per year based on general historical trends, I anticipate that the traffic volumes will also fluctuate with harvesting operations within the forestry blocks further north along Quarry Road.

21 I am not aware of any other land use changes proposed around the site that may influence the traffic volume. However, as also noted by the Applicant, activities beyond what is anticipated for the zone by the Operative and Proposed Waimakariri District Plans would likely be subject to a resource consent process where considerations of traffic effects can be made.

22 The Applicant notes the presence of recreational cyclists and walkers on Quarry Road, but suggests there will be relatively few, given the low number of properties accessed by the road, and that the sealed width of 5.9m is wide enough for a vehicle to safely pass the occasional cyclist or pedestrian, given the infrequent nature of vehicular traffic on this section of road. The Applicant further notes that typical truck speeds on this section of road will be on average 60km/h due to the road alignment and relatively short distance from a low-speed corner and the quarry entrance. There are existing mountain bike trails nearby around Ashley Forest that may lead to cyclists riding along Quarry Road. However, I agree with the Applicant and note

that as traffic volumes are low the actual risk of conflict is low, although, due to operating speeds, any crash could result in a high severity.

23 I note that Quarry Road is not on a school bus or other bus route, the closest school being North Loburn School, about 8 km from the site located on Loburn Whiterock Road.

24 The site is accessed through an access with Quarry Road. The accessway is sealed and there are unsealed areas of the road either side of the access near Quarry Road and there is evidence of heavy vehicles tracking over this surface, causing ruts and the potential for loose material to track over the sealed surface potentially leading to vehicles losing grip, and running off the road (see Figure 1 and Figure 2 below).

25 There is adequate sight distance to the site access as demonstrated by the Applicant's assessment based on industry standard guidelines (Austroads Safe Intersection Sight Distance). The posted speed limit is 100 km/h which requires a minimum sight distance of 250 m, the Applicant has estimated the available sight distance to be greater than 250 m, which meets the minimum requirement. Based on observations by the Applicant and by Mr Wilkie in his site visit, the actual operating speed is somewhere between 60km/h and 80km/h, requiring SISD of between 115m and 200m. I agree with the estimate of available sight distance based on site investigations by Mr Wilke.

26 Based on the Applicant's report, there were no recorded crashes near the site access over the past 10 years. The crash history for the 20km route from the Ashley River to the quarry entrance over the same period included no crashes involving heavy vehicles. However, there were five reported serious injury crashes involving light vehicles. The predominant crash type is single vehicle loss of control during the hours of darkness. In noting this trend, the Applicant has recommended that the site operator include the consideration of the risk of driving on rural roads in their Health and Safety Plan and implements mitigation and monitoring measures if deemed appropriate, this would likely include site induction training to highlight risks on the road network, a level of expectation on driving behaviour, and a method of feedback to reinforce these principles. I recommend that this initiative is explored further by the Applicant. I note that the quarry operating hours (7am to 7pm) will largely be in daylight and therefore unlikely to contribute to the trend of crashes during hours of darkness, a Health and Safety Plan with measures such as these contributes to a safe working site.

27 The Applicant has noted that the site layout should be reviewed by a suitably qualified person. Having visited the site, Mr Wilkie confirms that improvements can be made, and I agree with this conclusion.

4 Assessment of Transport Effects

28 The Applicant indicates that the total traffic generated by the site is 36 vehicle movements per day, 24 heavy vehicle movements and 12 light vehicle movements, relating to the various operations on site as summarised in Table 1 below:

Table 1: Summary of traffic generation.

Operation	Peak daily vehicle movements (2 way)
Haulage of processed lime*	2
Removal of overburden*	2
Leachate removal	6

Landfill	14
Light vehicles (typical)	12
Total daily truck movements	**24**
Total daily light vehicle movements	**12**

** Average trip rate is less than 1 vehicle per day.*

Based on the calculation provided by the Applicant, I consider this to be an appropriate evaluation of traffic generation for the proposed activities including: quarry operation, landfill construction and operation.

29 I estimate there are currently 38 heavy vehicle movements per day on Quarry Road, obtained from published WDC data retrieved from the 'Mobileroad' website[1]. This is the equivalent of 19 trucks per day in each direction. The Applicant estimates that between four and six of these are associated with the existing quarry. Therefore, the proposal has the effect of increasing the existing heavy vehicle movements on Quarry Road to 24, a net increase of 18 to 20 truck movements, or 10 trucks in each direction. This represents a 50% increase in average daily heavy vehicle movements on Quarry Road, or an overall increase in average daily traffic (ADT) of approximately 12%. As the total traffic is likely to remain between 150 and 200 vehicles per day, I do not consider this to be a significant change.

30 As a sensitivity test, if the landfill waste to site were to double to 1,000,000 m^3 per year, based on WSP's calculations, the average daily truck movements associated with the site would increase to 40, resulting in a total truck volume on Quarry Road of 72, or an increase of 80%. However, this volume spread over a typical 10-to-12-hour operational period would represent at most 7 movements per hour which I do not consider excessive in this low traffic environment.

31 The Applicant has highlighted that the traffic generated through the landfill operation on the site is below the District Plan thresholds for restricted activities. The District Plan thresholds are 250 motorised vehicle movements per day, either entering or exiting the site, and the District Plan defines high traffic generation thresholds in a rural zone of 200 vehicle movements per day (average), or 50 heavy vehicle movements per day (average). I have reviewed the assessment against the requirements of the Operative Waimakariri District Plan and agree that the traffic generation of the proposed activity does not meet the significance threshold.

32 A Section 92 query was raised about the potential impact the proposed activity has on the existing high crash rate on the route to the site. The Applicant's response stated most of the crashes occurred at night and none involved heavy vehicles and concluded that as the proposed activity would generally result in traffic generated in day light that there was no reason to consider that there would be an identifiable increase in crashes resulting from the proposed activity. I agree with the Applicant's assessment of risk.

33 The Applicant has noted that the existing site access should be reviewed for deficiencies to improve safety for users of the site. As noted in paragraph 24, there is potential for loose material to track over the sealed surface of the access potentially leading to vehicles losing grip and running off the road. The Applicant notes that trucks are unlikely to track over the unsealed areas particularly the northern area as trucks are unlikely to arrive or depart to or from the north. On his 25 June 2024 site visit, Mr Wilkie noted substantial evidence to indicate that this tracking is occurring, as demonstrated by the photos below taken during that site

[1] www.mobileroad.org – this website is run by Auckland Motorway Alliance and carries the most recent data captured from road controlling authority maintenance databases (RAMM)

visit (see below). Whilst there are minor safety risks associated with this, there are likely to be ongoing maintenance liabilities for Council as continued overrunning will result in edge break on the seal of Quarry Road.

34 The current seal within the site access has insufficient width for vehicles travelling in opposing directions, which means that a vehicle will either need to wait on Quarry Road until an existing vehicle has left or as suggested by the vehicle track evidence, vehicles entering the site will turn wide to afford space to vehicles leaving site. I recommend that a width, sufficient to accommodate two vehicles, is sealed within the entrance to the site.



Figure 1: Quarry entrance looking south along Quarry Road, note evidence of wheel tracking from north.



Figure 2: Quarry access looking north along Quarry Road, note evidence of high frequency heavy vehicle movement into the site. (note: the rocks have been removed since this photograph was taken).

5 Consideration of submissions

35 549 submissions have been received of which 243 directly relate to traffic and transportation issues.

36 I have reviewed these submissions which primarily highlight the issue of an increase in truck traffic associated with the proposed activity, with specific concerns raised over:

- Increase in heavy traffic (243 submissions 100%).

- The routing of vehicles through the rural road network, particularly past the North Loburn school (100 submissions 41%).
- The increase in safety risk to vulnerable road users (182 submissions 75%).
- Increased maintenance liability for local road network (56 submissions 23%).

A smaller number of submissions were received relating to wider impact of traffic and intersection safety which are reviewed in section 5.5 below.

Which I have addressed in the following paragraphs.

5.1 Increase in heavy traffic

37 This is a generic submission which objects to any increase in traffic within the local area. There are some misconceptions stated in the submissions regarding the volume and frequency of vehicles, with the suggestion that the significance threshold in the district plan of 200 vpd is the actual increase in vehicles from the site.

38 The predicted increase in traffic to and from the site is anticipated to be on average 24 trips per day, consisting of 18 heavy vehicle and 6 light vehicle movements. The Resource Consent application (Appendix Y) has a proposed condition which limits truck movements to 18 per day as a rolling annual average. This is not a finite limit to vehicle movements, and it is possible that the peak truck movements could be up to double this on occasions.

39 The sensitivity test carried out referred to in paragraph 30 above, examines the scenario of doubling the landfill volume and I anticipate that an infrequent intensification of daily traffic to 40 truck movements is unlikely to have a significant detrimental effect. I recommend that the Consent Conditions reflect this volume as a maximum on any single day and included in my review of the proposed Consent conditions in section 6 below.

5.2 Routing of vehicles

40 One hundred of the submissions raise the issue of increase in heavy vehicles on Loburn Whiterock Road. The key issues raised are:

- The width of the road with single lane bridges and winding alignment.
- The increase in heavy traffic passing through the village.

41 Loburn Whiterock Road is approximately 14.5 km long and links Dixon Road (Arterial road) with Quarry Road (Collector road), passing through the villages of Loburn and North Loburn and is detailed in Table 2 below:

Table 2: Loburn Whiterock Road sections.

Length (km) from Dixon Rd	From	To	Road Hierarchy DP/ONF[2]	Seal Width (m)	Posted speed (km/h)	ADT[3] (vpd)	HCV (vpd)[4]
0 – 2.1	Barkers Road	Hodgsons Road	Local/Rural Connector	7.5	80	2,863	272

[2] Road hierarchy is a function of traffic volume and environment and guides the design and use of a road, DP relates to the District Plan and ONF is the NZTA One Network Framework which supersedes previous categorisations

[3] ADT is average daily traffic

[4] Vpd is vehicles per day

2.1 – 5.6	Hodgsons Road	Station Road	Local/Rural Connector	6.5	100	1009	142
5.6 – 8.5[5]	Station Road	Thompsons Road	Collector/Rural Connector	6.5	100	759	102
8.5 – 14.5[6]	Thompsons Road	Taafles Glen Road	Collector/Rural	6.1	100	320	40

42 The average daily increase in trucks in the section adjacent to the school is 18 trucks per day (based on proposed Consent Condition), or around 18% increase in truck movements over a 24-hour period. To determine the level of relative risk, I have considered the peak traffic movements. Peak traffic on the road will generally be for an hour in the morning and for an hour in the afternoon, equivalent to 10% of the ADT. In this section of road this would be approximately 76 trips of which 10 would be trucks. Peak times[7] will generally be consistent with commuter times, between 7 and 9am and between 4 and 6pm, although in this rural location this may alter by up to 20 minutes earlier in the mornings and 20 minutes later in the evenings.

43 School hours are generally between 8:30 am and 3pm.

44 The proposed site operating hours are 7am to 7pm. In my experience of landfill operations the peak arrivals tend to coincide with truck operators work hours[8], with a trip to the landfill either being the first trip or the last trip of the day, given the location, based on other clean fill operations, I estimate this to be between 9:30am and 10:30am and between 3:30pm and 5pm.

45 I consider it likely that trucks will be at their highest concentration between these times, which are likely to coincide with the trip to and from school, at least in part.

46 The current truck volume is 102 per day, this indicates that the peak will be approximately 10 return trips or 5 trips in each direction. Assuming a normal distribution, it is possible that during the "school run" (the 30-minute period prior to school start, or 30 minutes after school finishes) up to 5 trucks could pass the school gate, i.e. on average one every 6 minutes. The average increase in trucks is 2 movements per day, the peak would therefore be 2. This means that in the peak 30 minutes coincident with school travel periods the increase in truck volume would be 1, increasing the overall truck frequency to one every 5 minutes. I do not consider this to be a significant increase in truck movements.

5.3 Increased safety risk

47 This submission generally focuses on two elements of roads safety:

- The increase in trucks will pose a risk to general traffic through likelihood of head on crash at corners and single lane bridges or the likelihood of a crash at an intersection.
- The increase in trucks will pose a risk to vulnerable road users (pedestrian, cyclist, equestrian) who are regular users of the road.

48 The recorded crash history detailed in paragraph 26 above, does not indicate that truck movements pose a specific risk to other road users. Based on the crash history and site

[5] *This section is where North Loburn School is located (8.2km)*
[6] *Single lane bridges – Karetu River (14.1 km), Grey River (10.8km)*
[7] Derived from SH71 telemetry data
[8] Derived from weighbridge data at Tirohia

observations, I consider the current risks along the corridor to be a narrow road width, with several low-speed corners and narrow single lane bridges.

49 The current carriageway width varies between 7.5m and 6.1m from south to north along Loburn Whiterock Road, on Quarry Road it is 5.9m. I note that the road width decreases proportionally to the traffic volume. Throughout the corridor there are generally wide berms which allow for a good field of vision and recoverable area for motorised road users, as well as a safe area for people to walk, cycle[9] or ride horses. Appropriate road markings and hazard warning signs are present along the corridor although adding a W18-4 "truck operating" warning sign in advance of the site entrance may enhance risk awareness for unfamiliar road users.

50 Given the relatively low traffic volumes in the vicinity of low radius curves and single lane bridges, the likelihood of meeting another vehicle is relatively low which is why the majority of loss of control crashes are single vehicle.

51 A high-level assessment of the corridor suggests that whilst nighttime hazard delineation meets minimum standards it may require additional maintenance where marker posts have been knocked over. However, considering the predominant traffic movements associated with the site will be during daylight hours, I do not consider any improvement or upgrade to be the responsibility of the Applicant.

52 I have conducted a review of the speed environment as recorded in the NZTA Mega Maps website[10] which indicates the mean speeds along the corridor; between Dixon Road and Thompsons Road is on average 84 km/h; between Station Road and Grey River bridge it is 78 km/h; between Grey River bridge and Fords Road it is 53 km/h; and from Fords Road to Quarry Road it is 64km/h. Quarry Road has a mean speed of 60 km/h which reinforces the Applicant's assessment of vehicle speeds.

53 The school has flashing warning signs on its approaches to warn drivers of the presence of activity at the school gate during key times together with a number of statutory and informal warning signs and markings. With a mean speed of 78 km/h it is unclear if these warnings have the desired calming effect on traffic.

54 I note that the 2023 Waimakariri Draft Speed Management Plan, North Loburn School has a proposed 60 km/h speed limit, and I consider this to be an important safety enhancement which should be progressed. Again this is not a responsibility of the Applicant.

55 I anticipate that there is likely to be a demand for pedestrians and cyclists along the corridor, although outside of school hours, this is likely to be predominantly recreational and outside of peak travel times.

56 Outside peak hours as described in paragraph 44 above, typical hourly truck demand would be spread across the working day which I estimate to be between one and two trucks per hour. The increase in truck traffic of less than two vehicles per hour in the off peak is unlikely to increase the level of risk to vulnerable road users.

57 The North Loburn School is predominantly rural and has facilities for school bus and evidence of high demand for private vehicle drop off and pick up, I understand that a number of students cycle to and from school here and to the Loburn School off Hodgsons Road. The length of Loburn Whiterock Road between Loburn and the school and approximately 6.5m in width and has a posted speed limit of 100km/h. Whilst traffic volumes are modest, there is potentially an increased risk to children cycling to and from school. However, the risk is existing with the 100 or so vehicles already on the road within the peak hour, and as described

[9] This would generally be restricted to cycles with an off-road capability, or as an escape route in an emergency situation
[10] https://spatial.nzta.govt.nz/apps/megamaps/

in paragraph 46 above, the peak hour increase in trucks associated with the proposal is less than 2% and unlikely to pose a significant increase in risk.

58 Extending the 80km/h speed limit from its current location at Hodgsons Road to Thompsons Road would reduce the risk to vulnerable road users, particularly since the mean speed in this section is already around 84 km/h. However this is not the responsibility of the Applicant as it is a pre-existing risk which will not be significantly increased through traffic generation associated with the stated activities in the AEE.

5.4 Increased maintenance liability

59 These submissions suggest that the increase in truck volume will have a detrimental effect on the road structure, leading to premature failure and increased maintenance liability.

60 A high-level assessment of the corridor indicates that Loburn Whiterock Road and Quarry Road are in a reasonable condition with only minor defects such as occasional potholes and limited surface flushing.

61 I consider it unlikely that the proposed truck volume increase would have a material impact on maintenance demands over the lifespan of the pavement. However, further analysis from an appropriately qualified and experienced pavement design engineer should be sought to determine the actual impact of pavement residual life.

5.5 Other issues

62 A small number of submitters have raised specific comments regarding the wider impact of truck volume increase within the main routes through Rangiora. As detailed in paragraph 38 above, the average increase in truck movements will be 18 per day. Considering the current truck volume is approximately 620 per day, I do not consider that an increase of 18 (or 3% of the total truck volume) is significant and will not result in a traffic efficiency or safety risk within Rangiora.

63 One submitter has highlighted concerns over an increase in truck volume and the risks faced by drivers waiting to turn right from Loburn Whiterock Road into Glenbrae Place within the village of Loburn. At this location the road is straight with good visibility, and 7.5m wide with approximately 0.5m sealed shoulder either side. According to Austroads[11], the hourly traffic volumes present at this location of 290 vph on Loburn Whiterock Road, and less than 10 vph on Glenbrae Place, do not warrant a right turn bay. Furthermore, the ADT on this section of Loburn Whiterock Road is currently 2,863 vehicles per day including 272 trucks. The additional truck traffic represents an increase in heavy vehicles of less than 1% which does not change the design threshold for a right turn treatment. I do not anticipate any safety or efficiency issues for vehicles turning into and out of the side road.

6 Applicant's proposed conditions

64 In the Appendix Y, the Applicant has offered the following consent conditions relating to traffic:

[11] Austroads Guide to Traffic Management Part 6 - Intersections, Interchanges and Crossings Management (April 2020)

Table 3: Proposed Consent conditions relevant to traffic.

Ref	Condition
18	The hours of operation for the quarry and managed fill must only be Monday to Saturday (excluding public holidays): 7am until 7pm.
57	On commencement of landfilling the heavy vehicle movements must not exceed as an average more than 18 movements per day, over any consecutive 12 month period. For the avoidance of doubt; a. This means 9 trucks entering the site each day and 9 trucks exiting each day; and b. A truck with a trailer is also only one heavy vehicle.
58	Records of heavy vehicles movement must be kept and a summary report provided annually after commencement of landfilling on the previous 12 month periods number of heavy vehicle movements must be submitted to the Waimakariri District Council, Attention Planning Manager: Plan Implementation Unit.

65 I consider that proposed conditions place an appropriate limitation on operating hours and traffic generation and include a check mechanism. However, I consider that the following improvements can be made to reduce traffic risks:

- Condition 57, a finite upper limit of daily trucks should be added so that it states:

  On commencement of landfilling the heavy vehicle movements must not exceed as an average more than 18 movements per day, over any consecutive 12 month period. ***With a maximum number of truck movements on any single day not to exceed 40.*** *For the avoidance of doubt;*

  a. This means 9 trucks entering the site each day and 9 trucks exiting each day,

  b. A truck with a trailer is also only one heavy vehicle,

  c. Truck movements not to exceed 40 on any one day.

- A condition should be included with the effect that the entrance to the site will be sealed to a sufficient width to allow for two-way traffic. This should include the turning radii into and out of the site to a distance of 20m into the site.
- Provide a W18-4 “trucks operating” sign in advance of the site entrance to enhance awareness of an increase in truck movements on Quarry Road.

66 To accurately address the risk of premature pavement failure highlighted by a number of submitters, I recommend that a baseline condition assessment is carried out for Loburn Whiterock Road and that a condition is placed on the Applicant to undertake or contribute to repairs, to the satisfaction of the road controlling authority (WDC), which are a direct result of the increase in heavy vehicle movements relating to the activity.

7 Conclusions

67 Protranz (the Applicant) has applied for Resource Consent to operate a quarry and landfill at Whiterock Quarry in Loburn, North Canterbury.

68 I have reviewed the AEE, S92 response and submissions and have addressed the issues highlighted.

69 I consider that the traffic generation through the proposed activity, being a lime quarry and landfill operation, will not present any significant detriment to the safety and efficiency of the

existing transport network if the aforementioned changes to the conditions and mitigating measures are enacted.

8 Recommendations

70 I recommend the following amendments to condition 57

On commencement of landfilling the heavy vehicle movements must not exceed as an average more than 18 movements per day, over any consecutive 12-month period. ***With a maximum number of truck movements on any single day not to exceed 40.*** *For the avoidance of doubt;*

a. This means 9 trucks entering the site each day and 9 trucks exiting each day,

b. A truck with a trailer is also only one heavy vehicle,

c. Truck movements not to exceed 40 on any one day.

71 I recommend the following additional conditions:

- A condition should be included with the effect that the entrance to the site will be sealed to a sufficient width for a length of 20m to allow for two-way traffic.
- Provide a W18-4 “trucks operating” sign in advance of the site entrance.
- Carry out a baseline assessment of Loburn Whiterock Road and include an appropriate review and repair clause to the satisfaction of the road controlling authority.

Report Prepared by:

Alan Gregory

Principal Transport Planner

Tonkin & Taylor Ltd

March 2025

21-Mar-25

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Before the Independent Hearing Panel
appointed by the Canterbury Regional Council
and Waimakariri District Council

Under	the Resource Management Act 1991
In the matter of	Resource consent Application by Protranz International Limited for Whiterock Limestone Quarry and Managed Fill Landfill (CRC243699, CRC243707, RC245079)

Statement of Evidence of Naomi Louise Crawford

24th March 2025

Appendix 6- Landscape and Natural Character Section 42A report prepared by Naomi Crawford, Glasson Huxtable.

Qualifications and Experience

1 My full name is Naomi Louise Crawford.

2 I hold the qualification of a Bachelor of Design in Landscape Architecture with Honours from Victoria University of Wellington. I am also a registered member of the Tuio Pito Ora, New Zealand Institute of Landscape Architects (**NZILA**) and a member of Te Kahui Ture Taiao, Resource Management Law Association (**RMLA**).

3 I am a Director at Glasson Huxtable Landscape Architects in Christchurch, having held this position since September 2023. Previously I was a Senior Landscape Architect within the same company.

4 I have practiced as a Landscape Architect for approximately 14 years. For the past eight years, I have also taught into the Landscape Architecture degree programmes at Lincoln University. Previously, I have worked within small landscape firms, a large multi-disciplinary consultancy and in the public sector.

5 My experience spans across the full spectrum of Landscape Architecture and Landscape Planning. I am regularly called upon as a Landscape and Visual expert for complex projects involving multi-disciplinary approaches across Aotearoa.

6 For extractive landuse and managed fill landfill activity, this has included Aylesbury and Frew's Quarries (Canterbury), Nine Mile and Brownlee Mineral Sands (Buller), Wakamarina Mine (Marlborough), Barrytown Mine(s) (Grey), Mananui Mineral Sands (Westland), and Kakaramea and Ngāruawāhia Sand Extraction Sites (Waikato).

My Role

7 I have been involved with the Protranz International Limited, Whiterock Limestone Quarry and Managed Fill Landfill Application at 150, 154, 174 and 176 Quarry Road, Loburn, **(Application and Application Site)** since May 2024. My role has been to provide advice in relation to landscape and visual effects to the Waimakariri District Council **(WDC)**.

8 This has included:

(a) Visiting the site and surrounding area along with the Applicant, and representatives from WDC and Environment Canterbury (30 May 2024).

(b) Undertaking a high-level review of the existing landscape character and visual amenity. In turn, understanding the potential landscape and visual effects arising from the Application.

(c) Preparing a Memo on Landscape Matters (10 June 2024) to outline my observations, highlight omissions with the Application (in particular, the absence of a Landscape and Visual Assessment (**LVA**)), and to make recommendations. This was guided by Te Tangi a te Manu: Aotearoa Landscape Assessment Guidelines (**TTatM**), NZILA (July 2022).

9 In preparing this statement of evidence I have considered the following documents:

(a) The Assessment of Environmental Effects (**AEE**) accompanying the Application (28 March 2024) including (but not limited to) the Design Drawings Set (Appendix H, Rev1), Site Management Plan (Appendix L, RevB) and Proposed Conditions (Appendix Y, Rev1).

(b) The response to the Request for More Information **(RFI)** provided by the Applicant (23 August 2024) which included amendments to the Application and the provision of a LVA plus Graphic Appendix.

(c) Planning provisions relevant to my area of expertise.

(d) Submissions relevant to my area of expertise.

(e) The concepts and principles outlined within TTatM.

10 As part of preparing this evidence, I revisited the Application area for a second time on the 20 March 2024. This subsequent visit assisted with understanding the surrounding context in further detail and informed this landscape evidence.

Code of Conduct for Expert Witnesses

11 While this is not a hearing before the Environment Court, I can confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Executive Summary

12 My statement of evidence considers the potential landscape and visual effects that could arise from Protranz International Limited's Limestone Quarry and Managed Fill Landfill Application at 150, 154, 174 and 176 Quarry Road Loburn.

13 Overall, I consider the quarry expansion, and the addition of a managed fill landfill will result in:

(a) Further modification to a site which has already been heavily modified by quarry and processing activities.

(b) Adverse effects on the amenity of local residents because of increased traffic movement to and from the Site.

(c) Protection of the SNA by way of a fence.

(d) Enhancement through planting along the Karetu River, eastern watercourse and within two wetlands.

(e) In the future, the recontouring and landscaping of the site following closure to assist with merging the final landform character into the surrounding hillscape.

14 Generally, I believe my views and those of Ms. Back (Landscape Architect for the Applicant) are well aligned, with her assessment being fair and justified, minus a few areas which have been further discussed within my evidence.

Scope of Evidence

15 I have prepared evidence in relation to:

(a) The existing environment of the Application Site as it relates to landscape matters including landscape character, visual amenity, the Significant Natural Area (**SNA**), and natural character.

(b) The applicable statutory provisions relevant to my area of expertise.

(c) The Applicant's original AEE plus the LVA included with their s.92 Response.

(d) Matters raised by submitters to the Application.

(e) The proposed landscape mitigation measures.

(f) The proposed conditions of consent.

Proposed Activity

16 My evidence is based upon the description of the Application attached to the Applicant's AEE. Key aspects related to the managed landfill development include:

(a) Continuing existing limestone quarrying activities to assist with shaping the landfill floor and sides for approximately the next ten years.[1]

(b) Constructing a minimum 2.2-metre-high perimeter fence around the landfill footprint and the SNA area prior to commencement of the landfill activity.

(c) Constructing and operating a Class 3 Managed Fill Landfill by filling the existing quarry pit for a period of approximately twenty years.[2]

(d) Continuing to access the Site via the gravel access road off Quarry Road. The crossing over the Karetu River will be upgraded with a single span bridge (and the existing ford and footbridge will be disestablished).

(e) Providing riparian enhancement through planting near the Karetu River, eastern watercourse and gully wetland areas.

(f) Remediating the Application Site at the conclusion of the landfill activity by capping and grassing the filled landfill area.

(g) Removing infrastructure such as the site office, weigh bridge, lime processing plant, kiln, maintenance workshops and bulk storage sheds as well as infrastructure associated with the landfill that is no longer required.

The Site and Existing Environment

17 To ensure that modifications can be integrated with acceptable effects, one must first understand the existing environment of the Whiterock area. This includes interpreting the existing landscape character and values to understand the effects of the Application on those values. The key landscape character and values of the environment include:

[1] Quarrying activity will occur in the upper portion of the site, with processing infrastructure located on the lower terrace.
[2] Material received will include inert and sorted constructed and demolition waste including contaminated material.

Physical Values

18 The Application Site is situated at the junction of the Canterbury Plains and the foothills of the Southern Alps, where the plains transition into the ranges of Mt Oxford and Mt Thomas.

19 The local environment features a diverse patchwork of rural land uses and property types including large farms and equestrian facilities, lifestyle blocks and smaller residential lots, and even temporary dwellings. Some residences are located near roadside boundaries, whereas others are located well inside land parcels. A mixture of properties are positioned on the flat, closer to the Karetu River, or on raised escarpments. In the distance, large pine plantations follow the rolling topography of the surrounding hillsides towards the Mt Thomas Conservation Area.

20 The local environment has been extensively modified, with fences, powerlines, roads, signage, farm homesteads, outbuildings, and the existing Whiterock Quarry. Large amounts of pasture, shelterbelts, tree plantations, clusters of vegetation, willows, exotic weeds, and grass berms are all found in the local area.

21 Whiterock Quarry itself is accessed off Quarry Road. Access is via a ford (or a footbridge) crossing the Karetu River. This river (a tributary of the downstream Ōkūkū River), defines the western boundary of the Application Site, while an eastern waterway and two wetlands are situated within the Site itself.

22 Existing quarrying operations have focused on extracting limestone from a west-facing escarpment, which is part of a larger undulating hillside. Extraction has resulted in a large quarry pit with benched quarry faces of varying heights.

23 Processing occurs on a lower terrace not far from the river. Nearby there is an existing weighbridge, staff amenities building, site office, processing facility (featuring a furnace and rotary kiln), crusher, lime and urea silos, conveyor belt, storage sheds, and coal bunkers.

Associative Values

24 The rolling hills within the local area showcase limestone scarps and in certain locations visually reflect the geology of the landform. The Site has operated as a lime quarry since the 1950's, extracting material from the distinctive limestone cliffs.

Perceptual Values

25 Perceptual values include a sense of remoteness and containment due to the Site's location between the foothills of the ranges, surrounding shelterbelts, and the rolling hills of the Site. Longer views are afforded where there are breaks in vegetation or from elevated viewpoints, such as above the quarry itself or from raised escarpments.

Statutory Context

26 The statutory provisions are covered in Appendix X of the Applicant's AEE and Attachment 2 of their WDC Section 92 response. Matters relating to landscape are outlined below.

27 Under the Operative Waimakariri District Plan (**OWDP**) the Application Site is zoned **Rural**. The applicable objectives seek to maintain and enhance both rural production and rural character. The rural zone is described as being characterised by the dominant effect of paddocks, trees, natural features, and agricultural, pastoral or horticultural activities (Objective 14.11).

28 Under the Proposed Waimakariri District Plan (**PWDP**) the Application Site is zoned **General Rural** (GRUZ) and is classified as being within the Oxford Ecological District. The rural objectives and policies of the PWDP place importance on providing for primary production activities (including quarrying activities). However, industrial activity in rural zones is to be limited to circumstances where (among other things) amenity values and the character of the zone can be maintained (RURZ-01, RURZ-P2, RURZ-P6 and GRUZ–P1).

29 The existing quarry is located adjacent to a SNA, which is mapped as 'PWDP SNA039 – Whiterock Limestone Vegetation' and has immediate effect.[3] This area has highly valued shrub and grasslands located on cliffs and rocky outcrops. It is likely to be representative of the original vegetation cover and landform.

30 Also, of relevance to this assessment, are PWDP policies related to natural character (which have immediate effect) and require that wetlands, rivers and their margins are managed to preserve natural character. Figure 1 below illustrates the natural character provisions relevant to this Application. Natural Character is also assessed under paragraphs 61 to 78 of this evidence.

[3] Whiterock Limestone Vegetation contains indigenous grassland, shrubland, and indigenous limestone rock outcrop vegetation. Notable flora on site includes at risk-declining species such as speargrass, matagouri, and New Zealand linen flax. It also contains threatened-nationally endangered species such as Gingidia enysii var. enysii and sun hebe, kanuka, and Waipara gentian. (PWDP ECO-SCHED1)

Figure 1: PWDP Natural Character Objectives and Policies[4]

NATC-03 Natural character	*The use of wetlands, and lakes and rivers and their margins are managed to preserve their natural character.*
NATC-P1 Recognising natural character	*Recognise the following natural elements, patterns, processes and experiential qualities which contribute to the natural character values of freshwater bodies:* *1. Freshwater bodies and their margins in their natural state or close to their natural state.* *2. Freshwater landforms and landscapes, biophysical, geologic and morphological aspects.* *3. …* *4. Indigenous biodiversity, habitats and ecosystems.* *5. Water flow and levels, colour and clarity, and water quality.* *6. …* *7. The experience of the above elements, patterns and processes.*
NATC-P4 Preservation of natural character values	*Preserve the natural character values of wetlands, and lakes and rivers and their margins, and protect those values by:* *1. Ensuring that the location, intensity, scale and form of subdivision, use and development of land takes into account the natural character values of the surface freshwater bodies.* *2. Minimising indigenous vegetation clearance and modification, including where associated with ground disturbance and the location of structures, near wetlands, and lakes and rivers and their margins.* *3. Requiring setbacks of activities from wetlands, and lakes and rivers and their margins, including buildings, structures, impervious surfaces, plantation forestry, woodlots and shelterbelts.* *4. Promoting opportunities to restore and rehabilitate the natural character of surface freshwater bodies and their margins, such as the removal of plant and animal pests, and supporting initiatives for the regeneration of indigenous biodiversity values, and spiritual, cultural and heritage values.*
NATC-P5 Structures within freshwater…	*Enable activities that have a functional need or operational need to be located within the freshwater body setbacks, provided that adverse effects on natural character values are avoided, remedied or mitigated.*
NATC-P6 New and existing structures within and over freshwater bodies	*Provide for new structures, and upgrades to existing structures, on the surface of freshwater where:* *1. Public access to, and along, the freshwater body is maintained.* *2. The structure has a functional need or operational need to be located on the surface of freshwater.* *3. The structure does not compromise the use of the surface of the freshwater for existing users.* *4. …* *5. …* *6. Any adverse effects to the natural character and cultural values, associated with freshwater bodies are avoided, remedied or mitigated in order to preserve those values.*

[4] It should be noted that natural character objectives and policies which relate to hydrology, geology, ecology and/or cultural values of the river fall outside the author's landscape and visual expertise. The obvious objectives and policies which fall outside of the realm of landscape and visual matters have been excluded.

Comments on the Original AEE

31 At the request of WDC, I completed a landscape review to evaluate the AEE prepared by WSP for the Applicant. My work involved reviewing the AEE (and relevant appendices) and then visiting the site alongside the Applicant and their experts and Council representatives. I undertook a high-level review of the existing landscape character and amenity to understand the potential landscape and visual effects arising from the Application and whether these were able to be sufficiently managed.

32 In response, I produced a memo (10 June 2024) outlining my observations, highlighting omissions, and making recommendations in relation to landscape and visual matters. I recommended that the Applicant provide an LVA prepared by a suitably qualified Landscape Architect, following the methodology, concepts and principles outlined in TTatM. The request was processed as part of the WDC s92 RFI.

Landscape and Visual Assessment

33 The purpose of this section of my evidence is to comment on the LVA prepared by Ms. Back of WSP (22 August 2024). This is the first opportunity I have had to respond to the contents of the LVA.

34 Generally, the LVA follows the guidance outlined in TTatM. The Application is adequately described, key aspects of the statutory context are discussed, the landscape context and character are covered appropriately, potentially affected neighbours are correctly identified, and an assessment of effects is undertaken using the prescribed 7-point scale. The assessment is supported by helpful graphics including site location maps, plans, character images, a viewpoint location map and supporting panoramas.

35 However, it is unclear whether Ms. Back contributed to or reviewed the proposed **Conditions of Consent** as there is no reference to these within her evidence. Likewise, the proposed landscape mitigation measures, objectives to be achieved, and timeframes described in the **Biodiversity and Landscape Enhancement Plan and Accompanying Schedule** (20 August 2024) are not referred to either.[5] It would be helpful to understand how Ms. Back considers the proposed landscape conditions and enhancement measures will work to achieve the necessary mitigation.

[5] Schedule 1 of Appendix Y of the AEE.

36 This aside, I believe the conclusions reached by Ms. Back in her LVA are fair and justified, minus a few areas that would benefit from further discussion. These points are discussed under subject headings below.

Matters Raised by Submitters

37 Five hundred and seventy-three submissions were received. Landscape matters raised fall broadly into six main themes, which are summarised below:

Figure 2: Summary of Landscape Related Submissions

Rural Character and Amenity	Submitters believe the Application may affect: • Amenity generally. • The area's visual, peaceful, tranquil character. • The area's rural amenity and rural setting. • The beauty and attractiveness of the area. In addition, some submitters believe that the Application will: • Harm the peaceful communities of Whiterock, Okuku and Loburn. • Threaten tranquillity, peace, quiet and their quality of life. • Change the area from serene place to busier/industrial place. • Mean that this special place will 'lose its magic' – exploring nature, building dams etc.
Traffic Related Effects on Amenity	Submitters believe the Application may result in the following traffic related effects on amenity: • Increased trucks/traffic on roads with effects on amenity, quality of life and enjoyment of scenic views. • Increased heavy vehicles on roads disrupting/diminishing rural tranquillity, peacefulness and the communities' quiet character. • Effects of increased trucks/traffic with an effect on activities such as cycling, horse riding, walking and running.
Recreation	Submitters believe the Application may affect: • Recreational opportunities and the recreational value of the area. • Visitors who come to the area for sports. • The scarcity of water for recreation. • The ability to swim in the river and/or algae blooms. • The safety of recreational activities in and around river. • The Ashley River/Rakahuri which is used recreationally (and which the Application Site is upstream of). There is some support for the creation of a space for the public to enjoy long term.
Landuse	Many submitters are concerned that the Application: • Is inconsistent with the rural character of the community. • Will bring about a change from rural landuse to industrial. • Will detrimentally change the feel of the community. • Is in close proximity to residential zoned land. • Will have an effect on agricultural landuse. • Will have an industrial landuse that will significantly alter the communities' character, identity and values.
Landcover	Many submitters are concerned that the Application: • Will cause disruption to and/or effects on flora and fauna. • May impact plans for community native planting, bush regeneration/ protection and organic gardens/orchards. • Will have effects on wetlands.

	One submitter advocates for maintaining the quarry for mineral extraction and eventual reforestation to preserve biodiversity.
SNA	Some submitters believe that the Application: • Threatens the SNA.
Natural Character	Some submitters believe that the Application may affect natural character through: • Vegetation clearance and earthworks near the waterway. • Diminishing the mauri of Karetu River. • Modifications to the river. • Effects with contaminants (such as water clarity). In addition, it is requested that: • Natural geological features including limestone springs and underwater caves are protected. • The land is kept natural and not 'ruined' by landfill.
Associative Aspects	Some submitters believe the Application may bring: • A loss of local identity, history, fossils and archaeological finds. • Harm to the areas 'clean and green' reputation and vision. • Concerns for the maunga. • Effects on māhinga kai.

38 Each of the main landscape themes from the submissions have been addressed below.

Visual Amenity

39 The Application Site is screened by topography to the north and east. The area is also quite visually contained in places by the hills, as well as river and roadside vegetation. Some residences are located near the road, whereas others are located well inside land parcels. A mixture of properties are positioned on the flat, closer to the Karetu River, or on raised escarpments.

40 It was observed on the second visit to the local area, that the higher the quarrying moves up the hillside in future, the more obvious it will become, particularly from properties further afield. Currently when viewed from the northern end of Quarry Road and midway along Taaffe's Glen Road, the top of the quarry is aligned fairly close to the top of the trees in the midground. This may not be the case when the quarry is expanded.

41 Due to the varying size of private lots, as well as intervening vegetation and topography, it was sometimes difficult to assess the effect of the Application on individual residences when they could not easily be seen from the road.

42 Ms. Back assessed the effects of the Application when viewed from ten private properties. She determined that the visual effect on the residents of 144 and 179 Quarry Road will be **low** during the works and **very low** following disestablishment

of the landfill (presumably adverse). Visual effects at all other locations were determined to be **very low**.[6]

43 I agree with the above findings. However, I would also include numbers 62 and 12 Quarry Road within the above property cluster. Number 62 Quarry Road (which is a dwelling located close to the roadside, plus a secondary dwelling immediately next door) was not accessed by Ms. Black as part of her LVA. This property is located closer to the quarry than some of the properties previously assessed. Again, the visual effect on the residents of this address are likely to be **low** due to the approximate 835 metre distance from the quarry.

44 Number 12 Quarry Road is also located next to the road but at a distance of 1.3km. Adverse visual effects are likely to be **very low**.

Rural Amenity

45 The area is valued for its paddocks, trees, and agricultural, pastoral or horticultural activities as well as dispersed buildings and structures, which give it a rural character. Also appreciated is the rural outlook, spaciousness, privacy, limited traffic, clean air, and quietness.

46 When assessing effects, it should be noted that a change in a rural area or landscape does not, of itself, necessary generate an adverse effect. All landscapes are dynamic and constantly changing over time, in both subtle and transformational ways, and through both natural and human activity.

47 Many submitters raised concerns about changes to the area's peaceful, tranquil character, rural setting, beauty and attractiveness. There was also concern relating to increased traffic and trucks on the roads and the effect on recreationalists using the local area.

48 The proposal is anticipated to result in an average of 36 vehicle movements per day, 18 vehicles coming and going, some of which will be heavy vehicles.[7] Residents and road users will experience an increase in traffic over and above the existing level both visually and through increased disturbance.

49 As mentioned previously, some dwellings are located close to the road, and some are setback further within their property parcels. Those located closer to the road (and located prior to the Site entrance) are likely to experience a greater adverse

[6] 26, 33, 49 and 179 (cluster) Quarry Road, 1, 105, 125 and 260 Taaffe's Glen Road, Quarry Road corridor, Karetu River corridor, and surrounding recreational areas.
[7] I understand that the number of vehicle trips between what the Applicant has proposed and what WDC may propose may differ. As such, I have focused on the fact that the amenity of local residents will be affected and tried to explain how. The greater the amount of vehicle trips, the greater the resulting adverse effect will be.

effect on amenity as a result of an increase in traffic relating to the Application. This disturbance will be experienced briefly as vehicles (trucks and trailers, service vehicles and staff vehicles) transition past private properties on their way to and from the Application Site.

Recreation

50 Submitters raised concerns about the effects of the Application on recreation and the recreational value of the area. Visually, the landfill is likely to have little effect on the user experience from DoC tracks and reserve land, which are located at least 6 kilometres away. An increase in traffic may be noticed by transient recreationalists such as cyclists, horse riders and river users. The effects of traffic safety, dust, noise and effects on water quality have been addressed by other experts.

Landscape Character

Landuse

51 Rural areas consist of a diverse mix of activities, some of which may be incompatible with each other and/or need to be mitigated. Many submitters comment that the Application will result in a change in landuse from a rural to industrial activity. This comment is made irrespective of the fact that there has been an existing large scale quarry in operation on site since 1950.

52 This existing quarry activity has provided the opportunity for the landfill activity to take place, to practically fill the hole in the ground. As such, the Application proposes a gradual change in landuse from a limestone extraction and processing activity to a managed fill landfill. At the completion of the activity, the site will be rehabilitated into a pastoral landuse, much like the surrounding hillscape.

Landform

53 Observations from visiting the site and local area include that the site is screened by topography to the north and east. The landform of the Application Site has been highly modified by quarry activity cutting into the surrounding hillside.

54 As a result of the Application, further modification will occur associated with extraction activity and landfill formation. As the landfill is progressed the site will begin to merge with the surrounding topography. An example of what this final landform may look like has been helpfully illustrated by the visual simulation prepared by WSP.

55 Submitters concerns in relation to landform centre around the modification of the river and the possibly of earthworks within the waterway. The Applicant has confirmed that there will be no central pier used in the new bridge crossing the

Karetu River. However, further information (such as a plan and cross sections) are needed to understand the location of the existing bunds, their dimensions, and the location of the proposed fencing and how these elements will work in relation to the proposed planting near the Karetu River. It is also not clear whether the existing bunds beside the river are being modified and stabilised. Without this information, it is difficult to quantify the effect of the Application on landform.

Landcover

56 Many submitters are concerned that the Application could cause disruption to and/or effects on flora and fauna. In contrast, one submitter advocates for maintaining the quarry due to the opportunity it provides for eventual reforestation to preserve biodiversity.

57 It is my understanding that the Application will result in no vegetation removal but instead a number of areas where planting will be added. These areas include riparian planting around the Karetu River, eastern watercourse and wetlands (Refer to the discussion on Proposed Landscape Mitigation Measures under paragraphs 79 to 80). Again, more detail is needed on the location, width, planting arrangement and species proposed, to provide reassurance around the enhancement of these areas proposed by the Applicant. (Refer to comments made alongside Conditions 30 and 31 later in this evidence).

58 As mentioned previously, upon completion of the quarry and landfill activity, the site will be rehabilitated into a pastoral landuse, much like the surrounding hillscape. The addition of the aforementioned further planting areas and the rehabilitation of the disturbed areas of the site will likely result in long-term **positive effects on landcover**.

Significant Natural Area (SNA)

59 The Statutory Context (paragraphs 26 to 30) included a definition for the SNA which is mapped as PWDP SNA039 – Whiterock Limestone Vegetation. This area is located immediately north of the proposed quarry and landfill activity. The SNA is important as it has highly valued shrub and grasslands located on cliffs and rocky outcrops. The area is likely to be representative of the original vegetation cover as well as the landform of rolling hills with limestone scarps.

60 It is my understanding that the SNA will be avoided by the Application and will be protected by fencing it off from the rest of the Application Site. If appropriate, the Applicant may also like to consider further rehabilitation or enhancement of this area.

Natural Character

61 Ms. Back addressed the effects of the Application on natural character in her LVA. However, she did not outline the methodology used to carry out her assessment of natural character.[8] As concerns about natural character were raised by submitters, I have assessed the effect of the Application upon natural character by using the methodology outlined in TTatM.

62 The purpose of assessing natural character is to inform its management. That is, to preserve the natural character of the environment, and of wetlands, rivers and their margins, and protect the natural character of those places from inappropriate use and development. That purpose applies to all such areas and not just those with a high degree of naturalness. An area's remnant character may be important even though it is highly modified.

63 For proposal driven assessments like this one, TTatM provides an example of a step by step approach for assessing natural character, which is methodically worked through below under each of the underlined headings.

64 It should be noted that aspects of natural character which relate to hydrology, geology, ecology and/or cultural values of the river fall outside the author's landscape and visual expertise. Other experts will provide comment on the freshwater margins of the river and/or the values of the water itself.

Defining Natural Character

65 Section 6(a) of the RMA refers to the preservation and protection of natural character but does not provide a definition for what it is. This assessment defines natural character as: *'The naturalness or degree of modification of an area'*[9] and *'an area's distinct combination of natural characteristics and qualities'*.

66 The former is a quantitative attribute - a condition.[10] The latter is a character specific to each area and adopts the interpretation that natural character is an area's distinctive combination of natural characteristics and qualities, including degree of naturalness. It is this second definition that this evidence focuses on.

Identifying the Relevant Area

67 For this Application, natural character relates to the Karetu River and its local environment, the eastern boundary watercourse and its riparian margins, and the

8 There are different views within the profession (and in other disciplines and organisations) on what natural character is and how it should be assessed. Refer to TTatM, page 206.
9 The extent to which the natural elements, patterns and processes occur.
10 Generally, the degree of natural character is highest where there is least modification.

upper and lower wetlands within the site. This evidence also considers the broader context within which all these waterbodies sit.

Assessing Natural Characteristics and Qualities

68 The key natural characteristics and qualities of the rivers, riparian areas and wetlands include the physical and biotic natural elements and how they are perceived and experienced. These are summarised in below:

Figure 3: Natural Characteristics and Qualities of the Waterbodies

Physical	• The Karetu River and its local environment, the eastern boundary watercourse and its margins, and the upper and lower wetlands. • The influence of heavy rainfall in times of flood and low water levels in times of drought. • Ecological values in terms of flora and fauna, habitats, and connectivity (e.g. presence of eels, watercress growth etc.).[11] • Movement of water and sediment (patterns and processes). • The SNA located near the river and contributing to the catchment. • The degradation of natural character (e.g. increasing sedimentation and decreasing water quality).
Perceived and Experienced	• Recreational use and enjoyment of the river. • Ability to see and hear the water (when flowing). • Sound and movement of aquatic life and birds. • Clarity of the river when undisturbed by vehicles using the ford. • The feel of the water when crossing the river or swimming. • The darkness of the night sky. • In places, a high level of modification has occurred to the waterbodies due to the existing quarry activity, presence of informal earth bunds, proximity of quarry buildings, compacted laydown areas, roads and the ford across the Karetu River.

Effects of the Application on Natural Character

69 Having understood the above characteristics and qualities of the site, the focus is on how these aspects come together as a collective expression of natural character. Effects on natural character by an Application can be both positive and adverse. TTatM promotes improvement of natural character values rather than simply managing the status quo or mitigating adverse.

70 Regard should also be given to the relevant statutory provisions for natural character. The applicable Natural Character Objectives and Policies from the PWDP are included under paragraph 30 and figure 1 of this evidence.

11 Refer to Appendix G Ecological Impact Assessment of the AEE which attributes the following ecological values to the site: Negligible vegetation values within the Project boundary; Very High ecological value of freshwater fauna on site within the Karetu River, Low ecological value for freshwater fauna of the eastern watercourse; and, Low overall ecological value of the upper and lower connected wetlands.

Karetu River

71 A ford intersects the Karetu River providing vehicular access along with a single person footbridge. This access will be replaced with a new 23 metre long single span bridge. During the removal of the rock armoured weir there will be a **short-term adverse effect** on natural character because of elevated sediment affecting water clarity. However, following completion, there will be a **positive effect** with less disturbance to the riverbed due to traffic no longer moving through it.

72 Stormwater infrastructure will be located within and alongside the Karetu River. These elements do not require the removal of any vegetation and require only small changes to the landform, much of which has been highly modified already.

73 At this stage, it is unclear how the proposed security fencing intersects with the bunding along the Karetu River. It is advisable that the fencing is not installed close to the waterbody. As previously mentioned, more information is needed in terms of existing bunds and whether these are being strengthened or replaced and how the proposed riparian planting works with these.

The Eastern Boundary Watercourse and Wetlands

74 This ephemeral eastern boundary watercourse connects with the upper and lower wetlands. The proposed activity is located at least 20 metres away from these features. The general area has already been highly modified by pasture, vegetation removal, slash and informal stockpiles.

<u>Overall Effects on Natural Character</u>

75 Preserving and protecting natural character does not necessarily mean maintaining the status quo or avoiding activities or development. Restoration and rehabilitation can also occur as part of activities proposed.

76 From a landscape and visual perspective, the Application will result in **positive effects** on natural character due to:

(a) Less disturbance to the riverbed due to traffic no longer moving through it.

(b) Additional riparian planting of the Karetu River, eastern watercourse and onsite wetland areas.

(c) Longterm removal of buildings and infrastructure near the river.

77 It can be concluded that the natural character of the area is generally highly degraded due to the existing quarry activity and associated changes to the landform and landcover. Most of the proposed activity will be located within areas of the Site that have already been subject to a high degree of modification.

Recommending Measures to Manage Effects on Natural Character

78 Having completed the above process, I generally agree with Ms. Back's findings that the effect on natural character (at completion of the quarrying and landfill activity) will be positive. However, there is some uncertainty around the net effect because of the vagueness about what is proposed in terms of fencing and bunds along the Karetu River and the reliance on conditions to secure the landscape enhancements. I have made further recommendations under the Proposed Consent Conditions section of this evidence to assist with managing effects on natural character.

Proposed Landscape Mitigation

79 The proposed landscape mitigation measures, objectives to be achieved, and timeframes are described in Schedule 1 of Appendix Y of the AEE and shown on the accompanying plan RC245076C[12] and summarised as follows:

Figure 4: Proposed Mitigation Measures Provided by the Applicant

Vegetation Management Plan	a) The consent holder will prepare a Vegetation Management Plan (VMP) including, among other things, detailed planting plans and a work programme. This will be certified by a suitably qualified and experience Ecologist or Landscape Architect.
Karetu River Margin Enhancement	a) 'Upstream' (Identified as 'Area C' on plan RC245076C) - Planting of a 10m riparian margin on the true left bank with indigenous species including the gradual removal of pest willow tree species as indigenous species mature. b) 'Onsite - Interim' (Identified as 'Area D' on plan RC245076C) – Planting of a 2 -3m wide riparian margin (average width) along the true left bank with indigenous species where practicable. c) 'Onsite - Long-term' (Identified as 'Area E' on plan RC245076C) – Planting of a 10m wide riparian margin in indigenous species on the true left bank.
Eastern Watercourse Enhancement	a) Planting of a 10m riparian margin in indigenous species on both margins identified as 'Area F' on plan RC245076C.
Wetlands	a) Planting of a 10m wide riparian margin of indigenous species identified as 'Area G' on plan RC245076C.
SNA	a) Registration of the SNA within 176 Quarry Road identified as 'Area A' on plan RC245076C as a Conservation Covenant with the Department of Conservation. b) Installation of stock proof fencing around the perimeter of the SNA as indicated on plan RC245076C.
Rehabilitation	a) A Landfill Closure and Aftercare Plan will be required covering, among other things, site restoration including the final landform, landscaping and planting, ground cover and land use. b) The recontouring and landscaping of the site following closure to ensure that it is in keeping with the character of the surrounding landscape.

12 Biodiversity and Landscape Enhancement Plan, produced by Ecologist, Mike Hansen (20 August 2024).

80 The effectiveness of the proposed mitigation measure is discussed under the Proposed Conditions of Consent section that follows.

Proposed Conditions of Consent

81 The proposed Conditions of Consent relating to mitigation of landscape and visual effects are included in Appendix Y (Rev 1) of the AEE under RC245076, Conditions 29 to 39: Biodiversity and Landscape Enhancement and 75 to 79: Landfill Closure and Aftercare.

82 Figure 5 below lists the landscape conditions. Where appropriate, I have provided comment and made recommendations to ensure that they will achieve the desired outcomes.

Figure 5: Landscape and Visual Related Conditions of Consent

RC245076 Conditions 29 to 39 Biodiversity and Landscape Enhancement	**Landscape Peer Review Comment on Conditions**
Condition 29: *"The Consent Holder, for the purposes of achieving biodiversity and landscape enhancement across the site, must complete the requirements set out in Schedule 1 in the areas identified on Plan RC245076C which are both attached to and form part of this consent. The requirements must be completed within the stated timeframes, unless otherwise specified by a condition of this consent."*	i. Schedule 1 clearly outlines what is required, the objectives to be achieved and the timeframe. This is supported by a helpful plan (RC245076C). ii. The fence for the eastern watercourse, wetlands and stream should be added to a detailed plan.
Condition 30: *"Within 3 months of exercising the consent, the Consent Holder must register the area of land referred to in Column 1 of Schedule 1 with the Department of Conservation as a conservation covenant."*	i. The VMP must be produced in accordance with the Waimakariri District Council Engineering Code of Practice. ii. The detailed planting plans must include the following: - Proposed planting areas. - Width of planting beds. - Planting arrangement (staggered, double rows or otherwise). - Species type. - Dimensions and annotations. iii. A Landscape Schedule of Species must be produced including species name, grade, spacing and quantity. iv. Refer to comments under Condition 35.
Condition 31: *"Within 6 months of commencement of the consent and prior to landfill development works commencing a Vegetation Management Plan (VMP) must be prepared, that provides for the requirements in Schedule 1. At a minimum, the VMP must provide for:* *a) The consent holders approach to completing the requirements outlined within Column 1 of the Schedule.* *b) Detailed planting plan(s) of the Column 1 requirements that will achieve the Column 3 objectives within each corresponding Area (Column 2); and* *c) Provide a work program for achieving the requirements within the timeframe in Column 4 including any contingency for plant unavailability (as referred to in Condition 35)."*	
Condition 32: *"Within one month after the completion of the VMP the consent holder must submit to the Waimakariri District*	

Council, Attention: Planning Manager: Plan Implementation Unit: *a) The VMP to achieve compliance with Condition 31 of this consent.* *b) b. A certificate signed by the suitably qualified and experienced ecologist or landscape architect to certify that the VMP has been prepared to comply with Condition 31 of the consent. This suitably qualified and experienced ecologist or landscape architect must also sign a statement confirming that they are competent to certify the VMP work."*	
Condition 33: *"The planting plan required as part of the VMP referred to in Condition 31.b must:* *a) Utilise indigenous plant species appropriate for the ecological district for the site; and* *b) Achieve a minimum average planting density of two plants per square meter."*	i. Plant spacing of two plants per square metre will work well.
Condition 34: *"Alternative plant species and/or planting density to the requirements in Condition 33 must be informed by a Suitably Qualified and Experienced ecologist or landscape architect in the field of botany and be approved in writing by Waimakariri District Council."*	i. The requirement for the Landscape Architect to be in the field of botany should be removed as this is not necessary. ii. The Landscape Architect and Ecologist should work together as both bring different experience and expertise.
Condition 35: *"Should there be a delay to the planting timeframe required in Column 4 of Schedule 1 due to the unavailability of suitable seedlings, the Consent Holder shall provide the Waimakariri District Council with an amended timeframe within which the planting shall occur. The total timeframe shall not exceed four planting seasons, and the Consent Holder shall complete the planting as soon as is reasonably practical within the four year timeframe and shall inform the Waimakariri District Council when planting is complete."*	i. A timeframe of four planting seasons (four years) is too long. If plant species are unavailable alternative species should be considered and approved by WDC. ii. A condition should be added requiring that a supply of plants of an appropriate size needs to be secured prior to the exercising of the Resource Consent (minimum 1L grade or equivalent). Note that this condition also needs to work with the timeframes specified by Condition 31 and may require some rework of timeframes. iii. A condition should be added making sure that planting occurs during the planting season from April to September to ensure the best chance of success. iv. A condition should be added ensuring that each plant is of nursery stock and of good form that is true to species. Plants must be healthy, vigorous and free of disease, injury, parasites or insects and not pot bound.
Condition 36: *"To verify that the requirements of Condition 31 have been completed, to the required standard and achieve*	i. The requirement for the Landscape Architect to be in the field of botany should be

the objectives in Column 3 of Schedule 1, the following must occur: *a) Within one month after completing a Schedule 1 requirement, the Consent Holder must submit to the Waimakariri District Council, Attention: Planning Manager: Plan Implementation Unit a certificate signed by a Suitably Qualified and Experienced ecologist or landscape architect in the field of botany to verify the requirements have been completed.* *b) All planting required by Condition 31 and Schedule 1 must be supervised by a Suitably Qualified and Experienced ecologist or landscape architect in the field of botany or person nominated on their behalf."*	removed as this is not necessary. ii. The Landscape Architect and Ecologist should work together as both bring different experience and expertise.
Condition 37: *"All plantings required by Schedule 1 must be regularly inspected during the first five years from planting to identify any management that may be required. Including the following minimum regime:* *a) In the first 12 months following a planting requirement, plant condition and weed competition must be assessed every three months, undertaking hand weeding or spraying with selective herbicides as necessary.* *b) Year Two following a planting requirement, the assessment and maintenance must be a minimum of three times per year.* *c) Years Three to Five, the assessment and maintenance must be a minimum of twice per year."* *Advice Note: Application and use of herbicides should comply with relevant regulations of the Waimakariri District Council and Canterbury Regional Council and follow label prescriptions."*	i. Add a requirement that after the first five years the plants are to be inspected annually to identify any management or maintenance required and to infill any gaps. ii. Specify that 'maintenance' includes weeding, spraying, staking, watering, fertilising, trimming, pest removal and replacement of plants where necessary. The aim is to achieve vigorous and thriving plants.
Condition 38: *"Infill planting to replace plants that have died must be undertaken as necessary in Years Two and Three after the original planting."*	i. This must occur throughout the life of the consent. Refer to comment 'i' under Condition 37.
Condition 39: *"The Consent Holder must undertake ongoing maintenance of the planted areas once a year after the five years until a minimum plant survival rate of 75% across the entire planting areas has been achieved. A report from a suitably qualified ecologist or landscape architect in the field of botany detailing the 75% survival rate must be provided to Waimakariri District Council, Attention: Planning Manager: Plan Implementation Unit to satisfy that no further maintenance and works is required."*	i. A 75% survival rate is very low and means ¼ of the plants could fail. This should be changed to 90% ii. Refer also to comment 'i' under Condition 37. iii. The requirement for the Landscape Architect to be in the field of botany should be removed as this is not necessary.
RC245076 Conditions 75 to 79 Landfill Closure and Aftercare	**Landscape Peer Review Comment on Conditions**
Conditions 75- 79 cover (paraphrased): a) Post care aftercare period. b) Closure and Aftercare Plan. c) A peer review of the Landfill Closure and Aftercare Plan.	i. From a landscape and visual effects perspective, the adjacent conditions are sufficient to ensure that the site is appropriately landscaped and contoured after closure.

83 From a landscape perspective, I agree with conditions 60-61 on fencing and conditions 81-82 on early closure. Condition 95 provides some reassurance that the Application Site will be remediated, and conditions adhered to.

84 Provided that my comments on conditions are incorporated into the conditions, I am satisfied that the proposed conditions can satisfactorily avoid, remedy and mitigate the adverse landscape and visual effects of the Application.

Conclusion

85 Within this Statement of Evidence, I have considered the landscape and visual effects that could arise from Protranz International Limited's Limestone Quarry and Managed Fill Landfill Application at 150, 154, 175 and 176 Quarry Road Loburn.

86 Overall, I consider the quarry expansion, and the addition of a managed fill landfill will result in:

(a) Further modification to a site which has already been heavily modified by quarry and processing activities.

(b) Adverse effects on the amenity of local residents because of increased traffic movement to and from the Site.

(c) Protection of the SNA by way of a fence.

(d) Enhancement through planting along the Karetu River, eastern watercourse and within two wetlands.

(e) In the future, the recontouring and landscaping of the site following closure to assist with merging the final landform character into the surrounding hillscape.

87 Generally, I believe my views and those of Ms. Back (Landscape Architect for the Applicant) are well aligned, with her assessment being fair and justified, minus a few areas which have been further discussed within my evidence.

Naomi Louise Crawford

Dated this 24th day of March 2025

Invitation to provide written comments on a project under the Fast Track Approvals Act 2024

You have been invited to provide written comments to the Minister for Infrastructure (the Minister) on an application to refer a project under the Fast-track Approvals Act 2024 (the Act) to the fast-track process.

Please upload comments directly via the portal by completing this template.
Before the due date, for assistance on how to respond or about this template or with using the portal, please email contact@fasttrack.govt.nz or phone 0800 FASTRK (0800 327 875).

Written comments must be received by MfE, on behalf of the Minister for Infrastructure, no later than the due date.

Important information

Your personal information will be held by MfE and be used in relation to the project application and process. You have the right to access and correct personal information held by MfE.

A copy of your comments, including all personal information, will be provided to the Minister and the applicant.

If you are a corporate entity making comments on this application, your full contact details will be publicly available.

For individuals, your name will be publicly available, but your contact details (phone number, address, and email) will not be publicly available.

A copy of your comments will also be published on the Fast-track website. If you believe any of the information you have provided is confidential or sensitive and should be withheld from publication, please highlight the information concerned and provide an explanation to support your request for withholding it. Your comment and explanation will be decided by the Ministry on whether to withhold the information from publication.

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All information held by MfE is subject to the Official Information Act 1982.

More information on the fast-track approvals process and providing comments can be found at Process overview | Fast-track website

Your written comments on a project under the Fast Track Approvals Act 2024

Project name	FTAA–2505-1062 **Whiterock Quarry and Managed Fill Project**

Before the due date, for assistance on how to respond or about this template or with using the portal, please email contact@fasttrack.govt.nz or phone 0800 FASTRK (0800 327 875).
All sections of this form with an asterisk (*) must be completed.

1. Contact Details

Please ensure that you have authority to comment on the application on behalf of those named on this form.

Organisation name (if relevant)	Waimakariri District Council		
***First name**	Kelly		
***Last name**	LaValley		
Postal address	215, High Street ,Rangiora		
***Contact phone number**	s 9(2)(a)	**Alternative**	s 9(2)(a)
***Email**	s 9(2)(a)		

2. Please provide your comments on this application

If you need more space, please attach additional pages. Please include your name, page numbers and the project name on the additional pages.

Note: All comments will be made available to the public and the applicant when the Ministry for the Environment proactively releases advice provided to the Minister for the Environment.

Managers signoff



Kelly LaValley
General Manager Planning, Regulation and Environment Management

Date : 30 September 2025

Comments on a fast-track consenting application
Fast-Track Approvals Act 2024

Fast Track Application FTAA–2505-1062 Whiterock Quarry and Managed Fill

Our Reference:	RC255288 / 250929184139
Date:	30 September 2025
To:	Hon. Chris Bishop, Minister for Infrastructure
From:	Waimakariri District Council
Fast-track project:	FTAA–2505-1062 **Whiterock Quarry and Managed Fill**

Thank you for your Invitation to provide written comments for the application for the Whiterock Quarry and Managed Fill project in Loburn under the Fast Track Approvals Act 2024. Please see below Waimakariri District Council's (WDC) comments on this application.

1. Executive Summary

Waimakariri District Council has reviewed the Whiterock Quarry and Managed Fill project proposal under the Fast-track Approvals Act 2024 and opposes the proposal being placed on the fast-track process.

Key considerations:

- **Competing Application Already Lodged** – The same application has been lodged and is being processed by Waimakariri District Council and Canterbury Regional Council. The application has been publicly notified, with 573 submissions, and is subject to hearing requests of 80 submitters. Allowing Whiterock to proceed via fast-track process would bypass the hearing process and undermine fairness and natural justice to the community who have submitted on the proposal.
- **Not a Priority Project** -The proposal is not identified in any central government or local government strategy, spatial plan, or infrastructure priority list, and therefore carries no recognised strategic weight.
- **Lack of Regional or National Benefit** – The project duplicates services already provided in North Canterbury and does not address any identified infrastructure gap. It would not deliver significant regional or national benefits.
- **Alternative Facility Already Available** – Existing infrastructure already provides secure regional capacity for residual waste disposal, making the Whiterock proposal unnecessary.

- **Environmental and Ecological Risks** – The project, under the current resource consent process, was deemed to have adverse effects on the environment, particularly concerning biodiversity and freshwater, due to its location and incomplete information provided. This was detailed in Waimakariri District Council (Annexure 1) and Canterbury Regional Council s42A Officer Reports.
- **Cultural Opposition and Values** – Based on advice received by the Council as part of the resource consent process, mana whenua (Ngāi Tūāhuriri) strongly oppose the project due to effects to cultural landscapes, mahinga kai, and kaitiakitanga.
- **Inconsistency with District Plan Objectives** – The current proposal for resource consent was identified as inconsistent with the Strategic Directions, natural environment, cultural, and ecosystems provisions of the District Plan.

2. Competing Applications

a) Any applications that have been lodged with the Council that would be a competing application or applications if a substantive application for the project were lodged. If no such applications exist, please provide written confirmation.

WDC response

- An application for a quarry and managed landfill at 150 Quarry Road Loburn, was lodged with Waimakariri District Council on the 2 April 2024 (RC245076).

- The application has been publicly notified at the request of the applicant. The project attracted 573 submissions, with 510 opposed, 57 in support, and 6 neutral.

- A hearing date has been set. Waimakariri District Council and Canterbury Regional Council planning officers have completed section 42A reports, with the Waimakariri District Council report attached as Annexure 1. The applicant has since placed the application on hold.

- Waimakariri District Council considers that a substantive application proceeding through the Fast-track process for the same, or a materially similar project, would risk undermining the fairness and integrity of the current process. This proposal has already attracted a high community interest in the project, demonstrated by the large number of submissions on the current resource consent process.

b) In relation to projects seeking approval of a resource consent under section 42(4)(a) of the Act, whether there any existing resource consents issued where sections 124C(1)(c) or 165ZI of the Resource Management Act 1991 (RMA) could apply, if the project were to be applied for as a resource consent under the RMA. If no such consents exist, please provide written confirmation.

WDC response

- There are no existing resource consents issued where sections 124C(1)(c) or 165ZI of the Resource Management Act 1991 (RMA) could apply, if the project were to be applied for as a resource consent under the RMA.

3. Specific Matters to Address

3.1 Whether the project has been identified as a priority project in a central government, local government, or sector plan or strategy (for example, in a general policy statement or spatial strategy), or a central government infrastructure priority list and whether the project would have significant regional or national benefits.

WDC Response

- The project has not been identified as a priority in any central government infrastructure strategy, sector plan, or local government policy document. It does not appear on a national or regional infrastructure priority list, nor has it been advanced through any spatial or waste management strategy prepared under statute.

- Canterbury has a Class 1 regional landfill at Kate Valley, and our understanding is that it is about half full with suitable room for expansion, despite the frequent misconception among the industry regarding the regional landfill capacity. The regional landfill reached its halfway point approximately in late 2024[1], after 19 years of operation, and has another 15 years until consent expiry. It is further understood that there is ample room for expansion beyond the current consented area and it was always intended that the landfill would be expanded and consented in stages[2].

- The existing Kate Valley Landfill is expressly recognised in the Christchurch and Waimakariri Waste Management and Minimisation Plan (WMMP) as the region's primary facility for residual waste disposal.

- Kate Valley is the region's established, consented, and operating landfill. It was set up through a regional planning process, with substantial investment, and has the capacity to meet the region's waste disposal needs into the future.

- Kate Valley was specifically set up as a public/ private partnership between Christchurch City Council, and the District Councils of Ashburton, Hurunui, Selwyn and Waimakariri, and the private sector to manage Canterbury's waste streams and provide assurance to the community that no further small-scale localised landfills will be developed across the region. This approach also had the support of Canterbury's Papatipu Runanga. Kate Valley is 15 km further from Christchurch CBD than the proposed location of the Whiterock landfill.

- Kate Valley already provides this service; there is no evidence provided demonstrating the need for a second landfill. Establishing a privately-owned landfill would duplicate existing infrastructure, fragment waste streams, and undermine the coordinated regional approach that led to Kate Valley being chosen and developed. This proposal is therefore unnecessary, inefficient, and inconsistent with good planning outcomes

[1] Capacity milestone reached at Kate Vall ey Landfill - Transwaste
[2] Ibid

- Accordingly, Waimakariri District Council does not consider the project to be a priority, nor one that would deliver significant regional or national benefits. This is particularly so given the existing statutory waste management framework and the established role of Kate Valley Landfill in providing for the region's waste disposal needs.

3.2 Any high-level commentary regarding the project's alignment with the Council's relevant plans, policies, and/or strategies (including any proposed plans).

WDC Response

- The applicant has highlighted that the project presented for FTAA referral is essentially the same as that presented in the RMA application, with minor changes that have resulted from a review of Waimakariri District Councils' s42A reports and feedback from submissions. The Hon Minister is referred to **Annexure 1**, which contains the Waimakariri District Council s42A report prepared for the RMA proposal.

a) Partially Operative Waimakariri District Plan (Decisions Version) Objectives and Policies

- The s42A officer report (Annexure 1) concluded the proposal to be inconsistent with the Objectives and Policies of the Partially Operative District Plan. In summary the key issues were as follows:

i. SD - Rautaki ahunga - Strategic Directions

- As the project stands, WDC considers the project is contrary to the natural environment direction (as detailed in Annexure 1) for the following reasons:
    a) There will potentially be short-term loss of ecosystems, habitat and indigenous biodiversity during construction of the landfill and operation.
    b) The natural character of freshwater bodies and wetlands will not be preserved, enhanced or restored.
    c) The land being used is crown land and public access restricts anyone else from using the road reserve to access the Karetu River.
    d) An integrated approach which recognises the importance of ki uta ki tai to Ngāi Tahu and the wider community, and the inter-relationships between ecosystems, natural processes and with freshwater has not fully occurred.

ii. SASM - Ngā whenua tapu o ngā iwi - Sites and Areas of Significance to Māori

- WDC acknowledges the formal submission received during the resource consent process which outlines that Te Ngāi Tūāhuriri opposes the project due to the failure to protect culturally significant waterbodies and customary use and fails to integrate cultural values.

iii. ECO - Pūnaha hauropi me te rerenga rauropi taketake - Ecosystems and indigenous biodiversity

- WDC consider the project does not fully align with the direction due to its initial biodiversity loss and uncertainty regarding mitigation effectiveness. While long term restoration efforts are proposed, they do not offset the immediate ecological damage, meaning there is no immediate net gain in indigenous biodiversity.

4. Other Comments

- The Waimakariri District Council s42A officer report (Annexure 1) for the resource consent hearing recommended decline due to the following reasons:
  a) Adverse effects on indigenous fauna and habitat;
  b) Significant effects on Tangata Whenua values;
  c) Inconsistent with the NPS-IB;
  d) Tension with the objectives and policies of the Operative and Proposed District Plans relating to Māori values, terrestrial ecology, water and land, and water margins;
  e) Not meeting the purpose of Part 2 of the RMA, in particular sections 6(e) and (f);
  f) Contrary to the Iwi Management Plan; and
  g) Absence of a sufficient site selection process as defined by the WasteMINZ guidelines.

- Further, advancing this project through the Fast-track process would effectively allow the applicant to bypass the comprehensive scrutiny that applies to the existing notified application, despite both seeking to provide for the same residual waste function. This creates an imbalance between applicants and submitters as well as undermining public confidence in the fairness of the planning system. The applicants requested public notification setting expectations of public input in decision making.

- The consultation that was undertaken with the Council prior to the referral application was limited to notification that a referral under FTAA would be sought and seeking confirmation of the matters listed in Attachment 9 of the referral application. No further engagement was sought on the proposal. It should be noted, however, that at this same time work was progressing on the RMA proposal.

5. Conclusion

Overall, the proposed Whiterock Quarry and Managed Fill project does not justify referral to the Fast-track consenting process. The project is not identified as a priority in any central or local government strategy, and the Council does not consider it will provide significant regional or national benefits.

To the contrary, it duplicates infrastructure already established at Kate Valley, which is recognised as the region's primary residual waste facility.

Allowing this project to proceed through Fast-track raises issues of natural justice when a competing application is already before the Council, has been publicly notified, and subject to hundreds of submissions and hearing requests. Such an approach risks undermining the integrity of the planning process, public participation, and the statutory framework.

The proposal also raises material concerns in relation to cultural values, ecological effects, and alignment with the Strategic Directions, Sites and areas of significance to Māori, and Ecosystems and indigenous biodiversity provisions of the Partially Operative District Plan. While the quarrying activity at the site has an established history, the introduction of a landfill/managed fill component potentially creates additional and significant adverse effects that are not adequately mitigated.

For the above reasons, Waimakariri District Council opposes the referral of this project to the fast-track consenting process.