Memorandum

Date:	3 May 2024	**Stradegy File Ref:**	22088
Subject:	Maraekakaho Quarry Project: Fast Track Approvals Bill Application		

This memorandum provides a response to the below question contained in the online application form for projects seeking to be listed under the Fast Track Approvals Bill:

Please describe the anticipated and known adverse effects of the project on the environment

The following is an assessment of adverse effects anticipated to occur as part of the operation of the Maraekakaho Quarry Project.

This memorandum is informed by and references the comprehensive technical reports that have been prepared by the Trust's expert team for a larger scale version of the Project. Since the reports were prepared, the scale of the Project has been reduced, with consequent reductions in the scale of adverse effects. Thus, the conclusions in this memorandum regarding the magnitude of effects are conservative.

Separate memoranda have been prepared in response to questions relating to consistency with national planning documents and regional and district planning documents.

1. ANTICIPATED AND KNOWN ADVERSE EFFECTS

The Hastings District Plan includes specific assessment criteria for the activities which comprise the proposal. These include criteria associated with:

- Aggregate extraction (Sections 27.1.7 and 27.1.8 of the District Plan)
- Natural Hazards (Section 15.1.6 of the District Plan)

Sections 1.1 and 1.2 below contains an assessment of effects aligned with District Plan criteria.

The actual or potential effects as a result of the proposal that warrant consideration within the context of the Regional Resource Management Plan for the Hawkes Bay Region (RRMP) include effects:

- On groundwater resources arising from the excavations and discharges,
- On surface water quality arising from discharges and excavations,
- On freshwater ecology arising from stream diversions,
- On nearby land due to changes in flood levels,
- Arising from the management of stormwater.

These matters are considered in Section 1.3, with effects on cultural values being considered in 1.4.

1.1 Aggregate Extraction

Visual Impact

A landscape and visual assessment (LVA) has been completed by Wayfinder for the project which identifies potential adverse effects. The methodology involved undertaking an assessment of potential landscape and visual effects, considering appropriate mitigation for such effects, and then ensuring the appropriate integration of this mitigation into the project.

In terms of natural character effects, the LVA concludes that the existing natural character value of the site is generally low, enhanced somewhat by the experiential value of the adjacent river corridor, and that the effects of the proposal on the natural character value of the site will be less than minor.

In terms of landscape and visual effects, while a different scale of effect may arise during different sequences of quarrying as rehabilitation is progressively implemented throughout the exercise of consent, the LVA concludes that the effects of the proposal once the quarrying aspects are complete will also be less than minor, and that at no time will effects be significant.

Mitigation is proposed in the form of a Rehabilitation plan which will be implemented on an ongoing basis. As the quarrying activity commences and extends across the site, the completed extraction area will be appropriately feathered and planted, and then maintained during the life of the quarry. This means that planting will come to maturity at different stages across the site, such that the area first quarried will be rehabilitated during the life of the quarry, rather than it all being undertaken on completion.

Noise

An Assessment of Noise Effects has been completed by Styles Group for the project. This assessment identifies noise sources for the project and assesses these against standards in the Hastings District Plan for the rural zone in which the project is located.

The nearest and most exposed receiver to noise emissions from the proposed activity is 3365 State Highway 50 whose notional boundary is 430m from the nearest edge of the extraction area. Noting this:

- The District Plan permitted limits for noise in the Rural Zone will be complied with by a considerable margin,
- Both construction and operational noise limits have been considered and both standards in the District Plan are met.

An assessment has also been undertaken against the limits set in the consent conditions for the land use consent for the Existing Processing Project Site and it has been confirmed these will be met.

It has been demonstrated the activity will align with District Plan limits for the Rural Zone for both construction and operational noise and therefore noise effects will not cause unreasonable disturbance.

Roading and Transportation

A Transport Assessment has been completed by Abley for the project. This assessment finds traffic effects associated with the proposal are limited in scale and nature as follows:

- Traffic movements across the proposed Project Site and existing quarry are unlikely to cause any adverse transport effects external to the Project Site,
- Access from the excavation area onto the existing vehicle access is unlikely to generate any adverse internal transportation effects,
- Internal movements will also be governed by a Quarry Management Plan (QMP) which will stipulate on-going management and operational requirements,
- The Project Site will be designed to accommodate the needs for the largest heavy vehicle anticipated to use the Project Site, and all reverse manoeuvring will occur outside of the loading/stockpile area to minimise risk for on-Project Site employees.

There will be no additional impact on State Highway 50 as traffic volume is not anticipated to increase, being limited by the conditions of the existing land use consent for the Processing Site. Overall traffic effects associated with the project will be limited in scale and nature and associated environmental effects are considered to be negligible.

Terrestrial Ecology

An Ecological Assessment has been completed by Boffa Miskell for the Project. This assessment considers the highly modified nature of the site and finds:

- There are no areas of indigenous vegetation that will be impacted by the proposal and any vegetation to be removed will be common in the wider area and exotic in nature,
- Avifauna values are considered to be low to moderate and there will be a negligible effect from the proposal. However, checks for nesting should be done before works commence and vegetation clearance should be undertaken outside bird breeding season,
- There is some potential for geckos to be present and a lizard survey is recommended pre commencement.
- There is a very low likelihood of bats being present, effects will be negligible with no mitigation recommended.

Overall effects on terrestrial ecological values are anticipated to be low on this basis.

Slope Stability and Land Disturbance

<u>Slope Stability</u>

An assessment of effects in respect to slope stability and land disturbance has been completed and informed by a:

- Geotech Assessment provided by LDE,
- Flood Assessment completed by Riley,
- QMP for the project.

The Geotech Assessment has informed the maximum batter slopes within the excavation and minimum setbacks from site features. In summary the report finds:

- A maximum batter angle of 18º with unsupported edges the upper sandy gravels (0-7m) and 40º within the silty gravels (7m +) is deemed appropriate without additional edge support,
- 10m setbacks from site features are required in addition to slope angle maximums to ensure adverse effects from slumping are acceptable into perpetuity.

With slope angles formed at the outset during excavation, suitable slope stability can be achieved with potential effects on surrounding site features or adjacent land considered low.

Land Disturbance

Land disturbance or quarrying can have effects in relation to the loss of soil resources for productive purposes. When quarrying is actively occurring effects in relation to sedimentation of surrounding land and water resource is possible during rainfall and conversely dust can affect adjacent landowners during dry periods. In this regard the following effects have been considered:

- The existing soil resource is not considered to be highly productive,
- The permeable nature of the soils and separation distance from the Ngaruroro River of 130m means it is highly unlikely sedimentation effects will occur,
- During dry conditions dust control methods are proposed to reduce dust effects.
- A rehabilitation plan is to be progressively implemented to stabilise and revegetate the site,
- There are no known archaeological features and/or sites located within the boundaries of the property, noting until recently the Project Site was an active river channel.

1.2 Natural Hazards

A Flood Assessment has been prepared by Riley for the project. In particular natural hazards are considered in relation to proposed staff facilities to be situated on site. In this regard the hazards assessment finds:

- The structures will not provide accommodation or attract people to the area for any reason other than quarry staff,
- The proposed structures are not anticipated to exacerbate flood risk. The Flood Assessment has quantified flood risk to assist in appropriate mitigation design by situating the facilities on a raised area.

With regards to the design of the excavations the site has been designed to accept flood waters and therefore does not propose any bunds or other forms of protection that would exacerbate flood effects offsite.

1.3 Effects on Ground and Surface Water

Effects on the Groundwater Resource

it is anticipated that turbid or sediment laden groundwater may enter the adjacent unconfined aquifer close to the edges of the extraction area. The turbidity will be the result of disturbance of sediments within the aggregate resource during extraction allowing it to be entrained in the water column. A Hydrological Report prepared by Aqualinc finds:

- The smallest clay particles only travel 40m into the aquifer before they are filtered out,

- The closest well is 70m from the Project Site and therefore is very unlikely to be impacted by turbid groundwater given maximum sediment travel distances,
- Effects on groundwater resource from sedimentation are considered to be negligible,
- The maximum distances show the risk of sediment reaching surface water within the main stem of the Ngaruroro River is low.

Aqualinc also assessed the potential effects of damaging a confining layer in the underlying aquifer at the subject Project Site. The risk of a confining layer being punctured during construction to a depth of 23m is not anticipated.

Effects on Surface Water Quality

An assessment of effects on water quality has been informed by:

- A Geotechnical Assessment by LDE,
- A Hydrological Assessment by Aqualinc,
- An Assessment of Ecological Effects by Boffa Miskell.

The assessment finds that potential impacts from the quarrying activity on nearby waterbodies is low as:

- Sediment is unlikely to enter the adjacent water race due to the flow direction of groundwater,
- The diverted Watercourse 1 is more likely to experience turbidity as it flows perpendicular to the hydraulic gradient but a monitoring regime is proposed to manage effects,
- The edge of the Ngaruroro River channel is approximately 130m from the Project Site and therefore very unlikely to be experience a plume or discharge from groundwater to surface water via subsurface flows.

Freshwater Ecology / Stream Diversion

A stream within the extraction area is proposed to be diverted (Watercourse 1). The ecological assessment has been completed and in relation to this finds the loss of the specific reach of Watercourse 1 is an adverse environmental effect that can be mitigated via a comprehensive mitigation plan that ensures there is no net environmental impact.

Flooding Effects

A Flood Assessment has been completed by Riley. The assessment finds that changes in landform associated with the Project are unlikely to result in adverse effects on surrounding properties if mitigation is undertaken. In particular an area west of the access road has been recommended to have ground levels reduced. An existing line of willows planting on the riparian margin of the Ngaruroro River will likely continue to keep the River in its existing channel during a flood event, as was witnessed in Cyclone Gabrielle. Some erosion to the excavation area might occur during an event due to flood water velocity but these would not be significant.

Stormwater

The potential effects from the stormwater discharge have been assessed against the Restricted Discretionary Activity criteria in the regional plan. The site will primarily consist of pervious surfaces including an as yet to be disturbed area pre-extraction, unsealed internal haul roads and active extraction area.

The management of hydrocarbons on site will be controlled by a Spill Management Plan.

On this basis effects of stormwater are considered to be low.

Groundwater Movement and Evaporation

The effects in relation to groundwater movement in relation to the extraction area has been considered by Aqualinc. Their report finds that evaporative losses with occur and create a drawdown effect. All drawdown effects on surrounding surface water bodies are considered to be minor.

1.4 Cultural Effects

An assessment of effects in relation to the project has been completed in the form of a Cultural Aspirations and Assessment Report. The key finding of this report is that mana whenua are opposed to the project. Primary reasons for this position seem to include a perception that insufficient consultation has occurred, associated with a desire to be co-creators in a project. The report identifies that the project will give rise to effects on cultural values, although no sites of significance to mana whenua are identified within the project area.

1.5 Summary

This assessment of the project against the relevant criteria of the Hastings District Plan outlines how the proposal, with implementation of appropriate mitigation, is considered to have no more than minor effects.

An assessment of the project in relation to RRMP matters finds:

- Effects on groundwater resource from sedimentation are considered to be negligible,
- Effects on surface water from the aggregate extraction are anticipated to be negligible,
- Minor drawdown effects (based on a conservative assessment) are anticipated,
- Ecological impacts from the stream diversion are limited by proposed mitigation.
- Offsite flood effects are anticipated to be minor, and
- Stormwater effects will be managed by appropriate design and a SMP in future.