



THE AGGREGATE & QUARRY
ASSOCIATION OF NZ

BRIEFING ON THE QUARRY SECTOR AND AGGREGATE SUPPLY FOR 2023 GENERAL ELECTION CANDIDATES

June 2023



“There are very few materials that do not have a suitable substitute, but bulky, low-value materials like sand, stone and rock are unlikely to go out of fashion any time soon – they’re needed for almost everything we build from cycleways to cellphone towers and wind farms. With a growing pipeline of major projects on the horizon we need to protect the availability of our best resources for generations to come.”

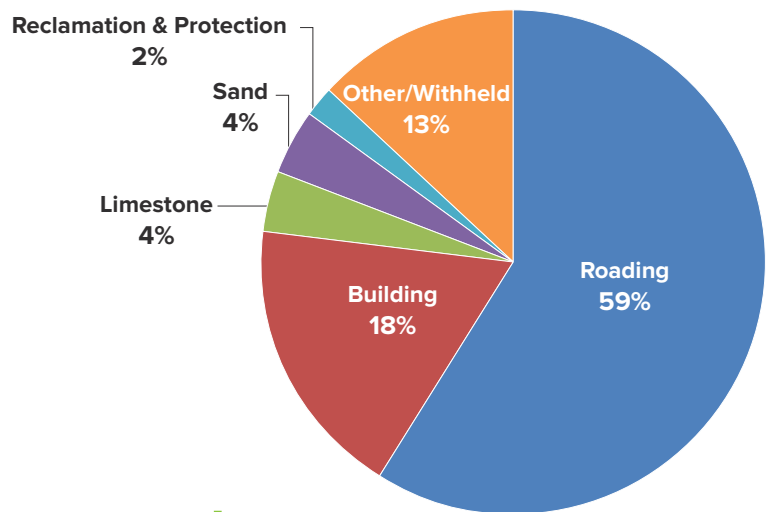
Ross Copland, CEO Infrastructure Commission.

INTRODUCTION

The Aggregate and Quarry Association (AQA) is the industry body representing construction material companies which produce an estimated 50 million tonnes of aggregate and quarried materials consumed in New Zealand each year – about a 9-tonne truckload per person per year.

There are currently over 1,000 quarries operating across New Zealand, most of them small and servicing local communities with construction materials including gravel and sand for infrastructure and housing, and armour stone for flood and tidal protection and climate change adaptation.

2020 Product uses



Some facts about aggregate



New Zealand uses **9-10 tonnes** of aggregate every year for each adult and child.



To build an average house, you need about **250 tonnes** of aggregate – for use in concrete, asphalt, mortar and building products.



To build 1km of a two-lane motorway, you need around **14,000 tonnes** of construction aggregates (400 truckloads).



Quarrying needs to be carried out close to where materials will be used. This keeps transportation costs low and helps minimise building costs and emissions in local communities. Note that the price of aggregate doubles after 30km of transport from the quarry gate.

BACKGROUND

Accessing, extracting, processing and transporting aggregate (crushed rock, gravel and sand) is needed for the construction of infrastructure in New Zealand: this material forms the foundation of every road and building, either directly or as part of materials such as concrete. Such infrastructure is always important and is at the core of the Infrastructure Commission’s Rautaki Hanganga o Aotearoa, New Zealand’s Infrastructure Strategy, accepted by the Government in 2022. There will be increased demand for aggregate and sand to build infrastructure and housing to meet population projections, and to address the nation’s infrastructure deficit.

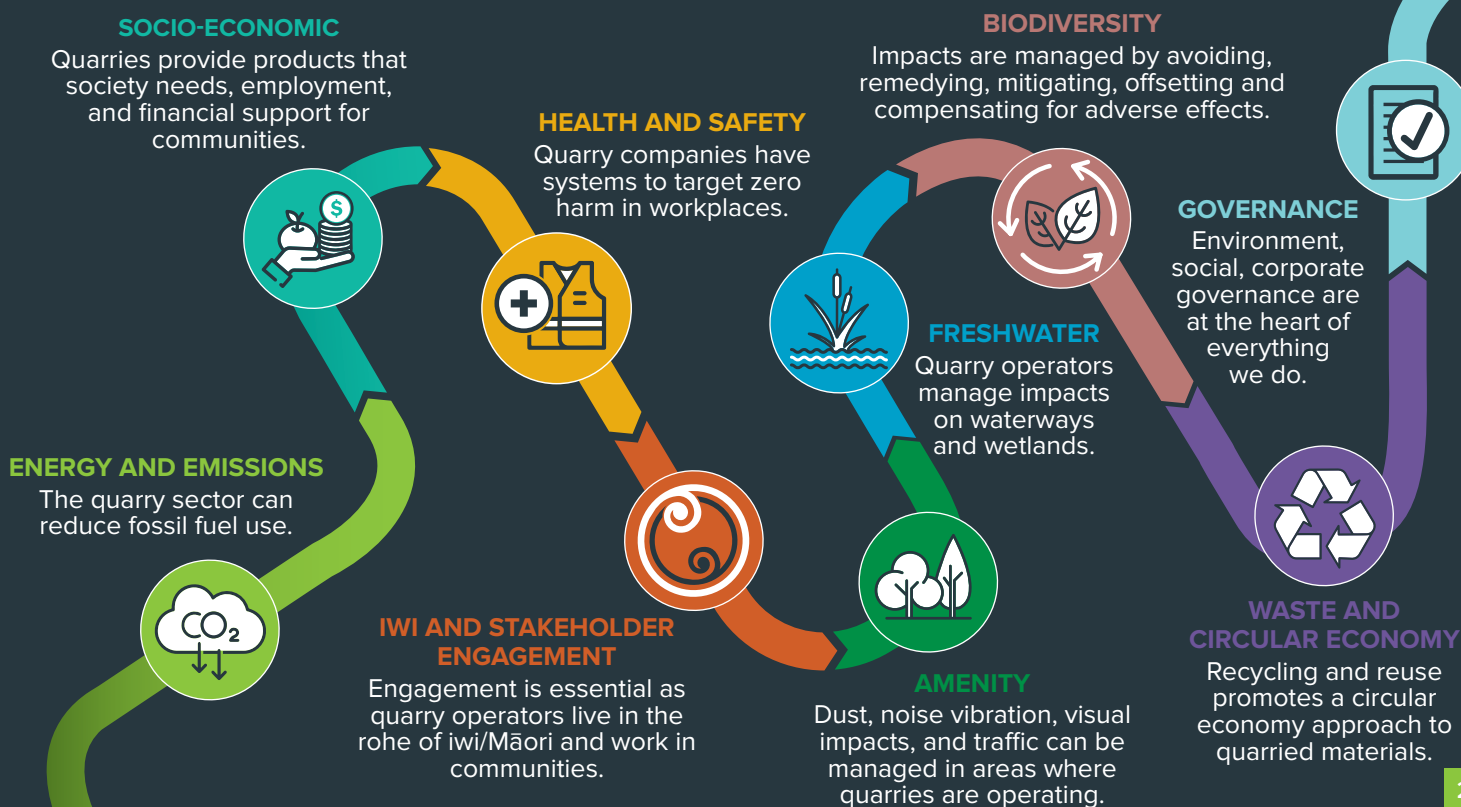
Additionally, as catastrophic events earlier this year have confirmed, the impacts of climate change including rising sea levels will put added pressure on rock supply for sea walls, riverbank protection and restoration, and other adaptation strategies.

It is therefore more vital than ever that local aggregate (rock and sand) resources throughout the country are identified, protected and effectively managed to build resilient new infrastructure and homes.

Our nation’s urban spread and resulting development projects are already constrained by restricted availability of suitable local aggregate and earth materials for construction. Planned regional growth projects and those now under construction involving major building and infrastructure developments are increasingly facing delays and escalated costs due to a lack of nearby, consent-approved aggregates. For many projects, the cost of transporting suitable material is adding significantly to project costs. Recent examples of this negative outcome include the Ōpōtiki Wharf Project and the Transmission Gully Highway Project.

In 2022 the AQA launched a sustainability Road Map for the Aotearoa New Zealand Quarry Sector (<https://aqa.org.nz/wp-content/uploads/2022/07/AQA-Road-Map.pdf>). This road map sets out how the industry manages its material impacts on people and the environment, provides guidance on improvement, and suggests ways in which the Government can help the industry deliver on its sustainability commitments, including climate change action. Individual quarry companies earn and retain their social licence to operate by engaging with the communities and iwi in the rohe of which they live and work.

QUARRY SECTOR MATERIAL IMPACTS



KEY ISSUES

Access to aggregate resources

Adequate provision must now be made in planning documents to protect existing and potential aggregate deposits and provide for their extraction. Quarry materials are not universally available and can only be sourced from where they are located. Without planning to secure adequate access to resources, at workable locations, and protect them from encroachment from other land uses, there is the real risk of losing access to such proximate resources.

An important issue for quarries operating in areas of expanding residential growth is reverse sensitivity – people complaining about quarries **after** moving into an existing quarrying area. An example is the Yaldhurst area in Christchurch. This has the potential to sterilise existing and future resources which means increased costs (and emissions) for more remotely sourced aggregate and lost opportunities for the local economy.

Quarrying and the environment

It is the rural environment that has provided the aggregates, food, water, and electricity to support the growing population residing in the built-up urban environment of Aotearoa New Zealand. If the country imposes stricter environmental bottom lines, in which the environment takes precedence over competing values in the land, thereby restricting rural primary industries, then the urban population will end up paying the price in greatly elevated cost of aggregate, and increased carbon emissions.

Quarries fully expect to meet stringent environmental and resource management requirements for new or renewed consents. A good example here is **Winstone Aggregates' Pukekawa Quarry** (<https://straterra.co.nz/casestudies/pukekawa-quarry/>). However, some quarries have very low impact on the environment or local iwi and communities; they sometimes sit idle due to fluctuations in demand, returning to activity in response to events such as natural disasters. To ensure the continuity of supply of aggregate, the resource management system needs to allow for fluctuating demands and periods of quarry inactivity. This will create an enduring industry which can respond quickly and appropriately to natural disasters and sudden changes in market conditions.



Pukekawa Quarry, Winstone Aggregates.

Quarrying on conservation land

The AQA is extremely concerned at reports that the Government plans to implement a ban on **all** extractive sector activities on public conservation land and water. This would have profound implications for quarries across New Zealand. While it is unclear how such a ban would apply to quarries, the **Aggregate Opportunity Modelling for New Zealand report** (<https://www.tewaihanganga.govt.nz/assets/Uploads/Aggregate-Opportunity-Modelling-for-NZ.pdf>) released by the Infrastructure Commission in 2021 identified that 20-32% of future hard rock reserves are situated on Department of Conservation (DoC) administered land; most of which is on stewardship land and has generally a lower conservation value. Any sterilisation of available quarry resources across the DoC estate would add a heavy cost to New Zealand's infrastructure and housing ambitions, including on iwi and regional communities.

Currently extraction of aggregates on DoC land is essential for flood mitigation, river restoration, bridge protection, and the construction and maintenance of tracks, carparks, and structures in national parks and on other DoC land. An example is the extraction of

rock and gravel from conservation land adjoining the Waiho River near Franz Josef Glacier to help protect its walking tracks. This sensible and pragmatic decision saved DoC a four-fold dollar amount – and corresponding, considerable carbon dioxide emissions – stemming from the alternative of trucking material a long distance from an existing quarry.

Health and safety in quarrying

The aggregates sector is dominated by small and medium-sized businesses (SMEs). There is no doubt that lifting the performance of these SMEs will have the biggest impact on improving workplace health and safety outcomes.

The focus of the Government's Health and Safety at Work Strategy 2018-2028 on stronger sector leadership is important as any improvements will need to be sector led. The focus on workers is also important; however, ensuring engagement, participation and representation should also include accountability on workers to engage and participate. Workers should also be responsible, along with employers, for complying with health and safety systems and procedures.



POLICIES AND RECOMMENDATIONS

National Environment Standard (NES) for Quarrying

New Zealand needs a secure supply of quarry materials to provide affordable housing and infrastructure now and for future generations. To achieve this, it is critical that planning is streamlined, quarry resources are protected so they can supply vital construction materials, and quarry land is returned as an asset to the community once extraction has been completed.

The AQA is promoting an NES for Quarrying. We consider it imperative that any such instrument must give direction to local authorities to protect key areas containing resources such as aggregate. This would both protect existing quarries from encroachment of non-compatible land uses such as housing, reduce reverse sensitivity potential, and enable the expansion of these resources and development of new greenfield resources.

While current resource management (RM) reforms may address these issues in the long term, the RM system needs to be able to respond quickly to changes in demand now and in the short to medium term.

Recommendation 1:

The Government, in consultation with the quarrying sector, to develop an NES for Quarrying to streamline resource consenting and ensure quarrying is conducted in an environmentally and socially responsible way, while providing direction to local authorities on the protection of existing quarries from encroachment of non-compatible land uses.

Resource management reform

Planning needs to be enabling so that resource consents are quicker to obtain and less costly. Even where appropriate planning zones and controls exist, the time and cost for obtaining consents to a quarry can be significant. In the event of a favourable decision, it is often more than three to five years (and sometimes ten years) from commencement of the consenting process before many quarries ever sell their first tonne of aggregate. Variation within resource management processes across the country creates uncertainty for resource users and has led to poor outcomes for both the built and the natural environments. Processes are complex, litigious and costly, and frequently disproportionate to the decision being sought, or the risk or impact of the proposal. This complexity is caused in part by having development/planning and environment considerations in one legislative document. It also results in litigation and multiple rights of appeal, conflicts with the objectives of some existing national direction under the RMA, and a requirement to “reinvent the wheel” every time a company applies for resource consent.

Recommendation 2:

Minerals such as aggregates are key to the functioning of our economy, and critical minerals such as cobalt, vanadium and rare earth elements, will likely be essential in a low emissions economy. It is critical that the purpose and outcomes of the Resource Management System retain their emphasis on promoting the sustainable management of natural and physical resources.

Recommendation 3:

While the AQA is neutral on whether there should be separate legislation dealing with environmental management and land use planning for development, legislation should set clear and specific ways of regulating environmental issues based on outcomes and at the same time provide the tools to allow balanced decision-making about where and how development can occur. In order to ensure balance, the positive effects of development need to be considered as do regional variations in community expectations, environment, and development needs.

Locally sourced aggregates

Aggregates are a finite resource quarried from various rock types including alluvial gravel, basalt, granite and greywacke. Not all aggregates are created equal and depending on the geology different quarries produce aggregates of varying quality.

By default, the Waka Kotahi NZ Transport Agency higher specifications for aggregates (e.g. M04) are used in project designs, however it is common for contractors to have difficulty in sourcing this premium aggregate because there isn't a suitable quarry nearby, and it can prove too expensive to import it from further afield. There are also occasions where

the road design does not require a particularly high loading specification, due to lower traffic volumes, and so, does not require M04.

Recommendation 4:

A tripartite group consisting of Waka Kotahi, roading contractors and the aggregates sector, to develop a matrix of fit-for-purpose road design using regionally available aggregates that match the requirements for road loading by location with the available aggregates in the area.

Circular economy

We acknowledge the importance of the circular economy in the aggregates sector and generally maximising the use and re-use of the same resources as many times as possible. However, while increased recycling and resource efficiency will have some benefits, the technology is nowhere near ready to fully or even significantly replace the need for extraction of natural aggregates.

Currently there is little incentive for recycling and re-use due to the cost of processing these products relative to natural products, and the reluctance of customers to specify and/or allow the use of recycled products. These customers include central and local government which are both significant users of aggregates and sand.

Note that even with a well-functioning circular economy approach to aggregates, there will still be a need for substantial primary quarrying to meet demand.

Recommendation 5:

A cost/benefit analysis for recycling and re-use of construction waste to be conducted by Government in consultation with industry, in order to establish the types of incentives, and/or penalties needed to achieve positive outcomes from the principle of a circular economy.

Invitation to any political party candidate:

As outlined, there are more than 1,000 operating quarries across Aotearoa New Zealand. If you are standing or re-standing for Parliament, there will almost certainly be one or more quarries in your electorate or community; every voter is dependent on quarries for the roads, rail corridors, cycleways and footpaths they use, the schools in their communities, homes they live in and places they work. If you would like to discuss any of the issues in this briefing note – or would like to visit a quarry to better understand what they contribute – please contact the AQA.



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