



# A BRIEFING ON THE QUARRY SECTOR AND AGGREGATE SUPPLY

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# INTRODUCTION

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The Aggregate and Quarry Association (AQA) is the industry body representing construction material companies which produce an estimated 45 million tonnes of aggregate and quarried materials consumed in New Zealand each year – about a truckload per person.

Funded by its members, the AQA has a mandate to increase New Zealand's understanding of the need for aggregates, improve our industry and users' technical knowledge of aggregates, assist in developing a highly skilled workforce within a safe and sustainable work environment, and work with local, regional and central Government on plans and regulations.





# BACKGROUND

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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. Such infrastructure is always important and is at the core of the Government's response to the economic downturn caused by COVID-19. There will be increased demand for aggregate and sand to build 'shovel ready' and longer term projects. Additionally, the impacts of climate change including rising sea levels are going to put added pressure on rock supply for sea walls, riverbank protection and restoration.

It is therefore more vital than ever that local aggregate resources throughout the country are identified, protected and effectively managed.

New Zealand's urban spread and 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 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 include the Ōpōtiki Wharf Project and the Transmission Gully Highway Project.



# KEY ISSUES

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## Access to Aggregate and Sand Resources

Adequate provision must now be made in planning documents to protect existing and potential aggregate and sand 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, 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. 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, electricity etc. to support a growing population which resides in the built-up urban environment. If environmental bottom lines were to be expanded so as to restrict rural primary industries, then the urban population will end up paying the price.

Quarries fully expect to meet stringent environmental and resource management requirements for new or renewed consents. However, some quarries have very low impact on the environment, iwi or local communities and sometimes sit idle due to fluctuations in demand such as in post natural disaster situations. 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 changes in market conditions.



## Quarrying on Conservation Land

The AQA was disappointed with the status given in the Government's 2019 Resource Strategy to the No New Mines on Conservation Land proposition. We strongly believe it would have made more sense to consider this in the context of the resource strategy, not as a pre-condition. While it is unclear how this proposition will apply to quarries, recent work by GNS Science has identified that 20-32% of future hard rock reserves are situated on DOC land. Any sterilisation of available quarry resources will impact heavily on the Government's infrastructure ambitions as well as on iwi and regional communities in terms of jobs, availability and the cost of aggregates and sand.

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 amount - and considerable carbon emissions - 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 health and safety outcomes.

The focus of the Government's Health and Safety Strategy 2018-28 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 to engage and participate. Workers should also be responsible, along with employers, for complying with Health and Safety systems and procedures.

We do not need more health and safety professionals or consultants in the aggregates sector. Industry leaders, SMEs and support staff, need improved skills and knowledge in developing and implementing effective safety management systems. The focus needs to be on educating managers who are responsible for health and safety.



# POLICIES AND RECOMMENDATIONS

## National Aggregates Study

The Government, in consultation with the aggregates sector, needs to confirm the available sources of aggregate and sand throughout the country, including aggregate quality, accessibility, and proximity to markets so that those sources identified as critical for the country's future growth, are protected and remain accessible to meet future demand. This is now critical to support the infrastructure focus of the prolonged economic recovery from COVID-19.

Mapping of resources needs to be easily accessible to local government, planners, developers and the community.

### Recommendation 1:

The Government urgently fund completion of the National Aggregates Study, for which funding was withdrawn in 2017. This work will:

1. Better characterise the physical properties of different aggregate and earth materials represented by geological map units;
2. Better define the spatial distribution of different aggregate and earth materials; both nationally and regionally through a pilot study;
3. Build an aggregate and earth materials resource model that enables source-transport-application decisions and improved planning using geological, engineering data and environmental, social, cultural and financial constraints.

## Biodiversity

The AQA is greatly concerned that the proposed National Policy Statement on Indigenous Biodiversity (NPS-IB) would require territorial authorities to "avoid" in any subdivision, the use and development of land within a Significant Natural Area (SNA). This would preclude quarrying over a large proportion of New Zealand.

Currently 45% of potential aggregate land is classified "indigenous vegetation" and 14% of potential aggregate land is classified "exotic vegetation". It is likely in the Indigenous Biodiversity NPS as it stands that almost all of New Zealand would be classified as "significant and of high value", in terms of biodiversity. If quarrying was to be avoided on this land, the demand for aggregate for infrastructure, housing, natural disaster repairs, and climate change mitigation would be impossible to meet from domestic supply.

The fact that territorial authorities will be required to "avoid" development within such SNA's ignores the fact that activities can, and do, operate while preserving and often enhancing indigenous biodiversity. The creation of artificial wetlands to manage water run-off and biodiversity offsetting and compensation are common requirements for modern quarrying. (One early example is Peacock Springs near Christchurch Airport.)

### Recommendation 1:

National Policy Statements recognise the importance and special characteristics of certain activities, including mineral and aggregate extraction and appropriately provide for them, in the RMA context.

### Recommendation 2:

Consider the issue of significance in the context of resource consent applications, when project proponents will have to identify the biodiversity, their impacts on it, and propose ways of managing those impacts to meet the sustainable management purpose of the RMA. This approach is provided for in the effect's management hierarchy proposed in the NPS-IB, but needs a review of the detail for workability.

Highly Productive Land

Quarrying is a highly productive use of land and in most cases is a temporary land use, with site restoration a critical element to ensure that land is available for future generations. In many cases, site restoration can result in the delivery of land for future primary production or valuable new habitats, contributing towards national biodiversity targets and wider ‘net gain’ ambitions.

In many regions of New Zealand, quarrying is the most highly productive use of land for primary production. A 2016/17 comparison of revenue per land mass showed the following revenue generated per hectare from various primary production activities:

Dairy	\$6,928 /ha
Beef/lamb	\$749 /ha
Horticulture	\$10,166 /ha
Quarrying	\$78,012 /ha

(Note: Estimates calculated from available data)

In 2018, the New Zealand aggregate and quarrying sector produced 45 million tonnes of aggregates, including limestone, clay, perlite, silica, dolomite, serpentine and other products, with an economic contribution to New Zealand estimated in excess of \$3b.

Recommendation 1:

Government give local authorities greater direction in planning for key resource areas, in order to protect existing and future quarries from encroachment of non-compatible land uses such as urban expansion and rural lifestyle developments, thus reducing the potential for reverse sensitivity effects to arise.

Marginal 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 higher Waka Kotahi (NZTA) specifications for aggregates (e.g. M/4) are used in project designs, however it is common for contractors to have difficulty in sourcing the premium M/4 aggregate because there isn’t a suitable quarry nearby, and it would be 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.

Recommendation 1:

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

Overseas Investment Act (OIA)

The relatively low threshold for overseas investment leads to the unintended consequence that many New Zealand companies are caught up in this legislation due to minority overseas shareholdings. The aggregates sector has experienced significant delays in OIA considerations of relatively minor land acquisitions for buffer land around quarries when there are more appropriate mechanisms for environmental regulation.

Recommendation 1:

The Overseas Investment Act be amended around the Ministerial veto power and the use of environmental barriers to overseas investment, particularly where overseas interests have minority shareholdings.

## 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 for as long as possible. However, while increased recycling and resource efficiency will have some impact, the technology is nowhere near ready to fully 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.

### Recommendation 1:

A cost/benefit analysis for recycling and re-use of construction waste 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.

## Resource Management Act (RMA)

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 for a quarry can be significant. In the event of a favourable decision, it is often more than three to five years from commencement of the consenting process before many quarries will ever sell their first tonne of aggregate. Variation within RMA 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.

### Recommendation 1:

Minerals such as aggregates and industrial minerals including limestone, silica and serpentine, are key to the functioning of our economy. It is critical that the purpose of the RMA retains its emphasis on promoting the sustainable management of natural and physical resources.

### Recommendation 2:

While we are 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.



Rehabilitated quarry, Memorial Park, Palmerston North





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