Submission from the AQA on Environmental challenges, opportunities and transitions for construction in Aotearoa New Zealand

July 2021

Introduction

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.

Funded by its members, the AQA has a mandate to increase understanding of the need for aggregates to New Zealanders, improve our industry and users' technical knowledge of aggregates, and assist in developing a highly skilled workforce within a safe and sustainable work environment.

We make the following submissions in relation to the discussion paper, Environmental challenges, opportunities and transitions for construction in Aotearoa New Zealand**.**

Context

We agree that the construction sector in New Zealand is facing significant environmental challenges that will require bold action to address. The Government's 10-year Minerals and Petroleum Strategy released in November 2019 included a clear statement that:

"Projections indicate that the population of New Zealand could grow as high as between 5.3 and 7.9 million by 2068. To meet the needs of this growing population we will require more housing, more energy, and expanded infrastructure. The minerals and petroleum sector has a critical role to play in building this future.

We need to make sure we have the aggregate (crushed rock and stone) required, or alternative replacement material, to build the foundations of our houses and roads."

Climate change will necessitate actions to defend or relocate infrastructure that is threatened by sea-level rise. Such change is going to put added pressure on rock supply for sea walls, riverbank protection and restoration. Based on the Draft Advice of the Climate Change Commission, 13 wind farms, each the size of the country's largest, will need to be built in the next 15 years to power the country's new electric cars and boilers. The construction of these wind farms alone will require an additional 1 million tonnes of aggregate and sand.

Construction cost pressures are increasing due to rising input costs, boom-bust cycles, and the increasing complexity of the projects we are undertaking, many of which are occurring in existing urban areas. In order to address this, it is critical that planning is enabling, proximate quarry resources are protected to supply vital construction materials, and quarry land is returned as an asset to the community on completion of quarrying.

Comments on the seven environmental challenges for the construction sector

Greenhouse gas emissions

Transitioning New Zealand to a low emissions economy requires a coherent and coordinated approach to climate change across government agencies, and across levels of government.

Government procurement policies, including leveraging their purchase power, to support low emissions products and practices could also help reduce emissions. It is important here to decrease the need for carbon-intensive transportation and improve energy efficiency in the long-term by ensuring quarries are close to their markets, thus significantly reducing transport costs, transport congestion and carbon emissions.

Coherent policy is important to ensure that households, business, and communities receive clear and consistent signals about the transition to low emissions, and the nature and speed of change required.

Energy

Our sector utilises off-road vehicles and machinery extensively, most of which is currently powered by diesel or electricity where commercially viable.

Most quarry sites are on urban fringes and infrastructure required for electricity supply would be cost prohibitive without financial incentives and/or a significant decrease in the cost of electricity for the life of the site. The Climate Change Commission has acknowledged that off-road vehicles and equipment may be challenging to electrify, especially the types that work long hours in remote locations.

For remote sites, the electricity for electric machinery would have to be made with generators – that use diesel. The most practical option now is the gradual replacement of tier 3 engines with tier 4 diesel engines, and where possible, tier 4 engines with tier 5 engines. In the pursuit of emissions reductions, this does not always translate into increased fuel efficiency, however.

Electric heavy off-road vehicles may be an option at sites where they can recharge during operation, e.g. operating uphill empty, and downhill loaded. One quarry site in New Zealand currently operates an electric dump truck, however very few sites operate in a manner that would make such vehicles economic or practical.

Waste

We acknowledge the importance of the circular economy in the aggregates sector and generally, maximising the use and reuse 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, or even significantly, replace the need for extraction of natural aggregates.

For a "circular economy" to work, the purpose needs to be established first and then must be supported by incentives for customers and suppliers to re-use or recycle products. 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 who are both significant users of aggregates and sand.

MfE data provided in their 2020 discussion document "Reducing Waste: A more effective landfill levy" identified that in 2018/19, 2,482,563 tonnes of construction and demolition waste was disposed of in Class 1 and 2 landfills. Of this total, we have estimated that 874,122 tonnes of concrete, bricks, rubble and landscape materials may be available for recycling into replacement aggregate products.

If financially viable to do so, this would produce 786,700 tonnes of aggregate or fill products, or 2 percent of the existing national aggregates market. This is consistent with Auckland Transport's assessment that recycled construction waste available would not exceed 2% of demand. The Climate Change Commission's modelling suggests that these C&D waste volumes will reduce by 20 % by 2035 on 2018 volumes, therefore providing less material for recycling into replacement aggregate products.

We do not have accurate data on construction waste in New Zealand and general statements of the scale of construction waste mask weaknesses in understanding of the composition of the total waste stream. Such perceptions are simplifying what is ultimately a complex situation. More consistent and comprehensive data collection, and monitoring of waste streams and resource use is needed.

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

Land use

Quarrying is a primary production activity under the National Planning Standards definition of primary production and therefore is a highly productive use of land.

Rather than taking an integrated approach to resource management, it appears that officials across government departments are acting in their separate silos creating unnecessary duplication and imposition of additional costs and restrictions, all with similar stated goals but with inevitable unintended consequences. We have seen this recently with introduction of the NES Freshwater Regulations, particularly concerning earthworks around wetlands.

Coherent policy is important to ensure our infrastructure, construction and housing keeps pace with population and economic growth and gives New Zealanders the services they expect, while ensuring their collective wellbeing. Policy also needs to deliver clear and consistent signals about the transition to low emissions, and the nature and speed of change required.

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 3 to 5 years from commencement of the consenting process before many quarries will ever sell their first tonne of aggregate. This timeframe does not always allow for the industry to respond quickly to demands placed on it by large infrastructure projects and building growth, meaning that aggregates are often sourced from further away at significant additional cost and carbon emissions.

Climate adaptation

We agree that designing in robustness to account for climate change risks has economic and environmental costs but that we need to be planning for adaptability in the future.

Quarry materials are not universally available and can only be sourced from where they are located; without planning to provide for adequate access to resources at workable locations, there is the real risk of losing access to such proximate resources.

New Zealand relies heavily on locally sourced aggregate resources for infrastructure repair following disasters, for road and rail transport corridors, major projects and for affordable housing development, all of which are essential for the social, economic, and cultural well-being of communities.

Currently, the cost of a tonne of aggregate doubles when it has to travel 30 kilometres from a quarry, with additional costs for each extra kilometre thereafter. By ensuring quarries are close to their markets, transport costs, transport congestion and carbon emissions are significantly reduced. We have seen recent projects such as Transmission Gully and Gisborne Airport sourcing aggregates from quarries up to 400km from the site due to lack of planning for aggregates, and environmental and production constraints at local quarries.

Regenerative construction

We agree with the concept of creating new environmental and social value so that building and construction activities help environments and communities to thrive.

The quarry sector has for some time embraced biodiversity offsets and biodiversity compensation which address the loss of biodiversity values associated with the activity by generating biodiversity gains elsewhere. The area of offset and level of compensation generally well exceed the loss of biodiversity associated with the activity. Offsets and compensation typically result in a net gain in overall biodiversity outcomes for the district or region.

As an example, approximately 25,000 native plants were funded by Winstone Aggregates for a restoration site in Belmont Regional Park. The key outcome was to achieve the revegetation of approximately 10 hectares within the Regional Park as a first step in establishing a self-sustaining, successional native forest in this area. This initiative was part of a larger mitigation package for the loss of native forest as a result of extending Belmont Quarry's operations. At the same site, Ngahere Geckos were discovered during pre-consent surveys. In an initiative involving iwi and DOC, the translocation of geckos to

predator-free Mana Island is an excellent example of how to use the Environmental Management Hierarchy to preserve and improve indigenous fauna.

Significant and high value hard rock aggregate resources can often be developed by disturbing a comparatively small amount of indigenous vegetation. This is possible as the aggregate resource extends a considerable distance below the ground. In these instances, offsetting can achieve similar outcomes to avoidance, as the areas to be offset are often larger than the area to be disturbed.

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