

Peter Walsh.

Obtaining the best outcomes

None of us predicted Covid-19 and I'm not going to hold a candle to any forecasts on how this year will turn out either.

One thing does appear certain; our economic recovery from the pandemic is built around infrastructure (and farming.)

The recently released production statistics for 2019 confirm just how much we as an industry will contribute to that recovery. As AQA Technical Advisor Mike Chilton details on page 40, around 40 million tonnes of quarried material was reported to NZPAM; when you add in those who didn't supply their figures, we are producing more than 50 million tonnes. That's a truckload for every New Zealander.

That output increasingly comes from existing sites which have nearly doubled production in the past four years to around 96,000 tonnes each on average.

If the Government wants infrastructure to drive recovery, then it must sort out the new regulations which ban any extraction in, or an activity which affects wetlands in and around existing quarries with no ability for them to mitigate or offset; such solutions can often provide better overall environmental outcomes!

It was pleasing to see officials from

the Ministry for Environment visit sites in Auckland late last year including the Stevensons Drury site, which I know well. Without change, 150 million tonnes of resource at Drury will stay in the ground, enough material in quarantine to provide Auckland's needs for a decade.

The officials were due to report to Environment Minister David Parker before Christmas. We need him to put changes to the regulations at the top of his 2021 action list.

Perhaps it might help him to read the article on page 38 about the Willowbank quarry, pressed back into service to help provide aggregate for the Transmission Gully project.

Not only does it allow aggregate to be extracted on the doorstep of where it's needed; the property's owners have cleaned up a stream and associated wetland, planting tens of thousands of native species, making the water so pure it is drinkable. That's the sort of environmental win/win for wetlands which quarries around the country can and do deliver.

Meanwhile, as an industry we are working on our 'carbon' emissions.

AQA Board member Tony Hunter has now been running the country's first electric quarry truck for a year at Logan Point in Dunedin with good results; major companies are looking at these vehicles and other technologies including biofuel and hydrogen. Many of our carbon dioxide and other emission reductions can actually be achieved via improved quarry design and management. AQA CEO Wayne Scott will bring together a workshop on these issues later in 2021. See story page 39.

You will also find a story to mark the passing in December of industry legend George Cunningham.

Among many, I was privileged to have known George, but only when you read his own abridged summary of his working life do you realise the breadth of contribution to our industry.

His conclusion in his article was that he always endeavoured to obtain the very best outcomes possible for all parties involved. That's more than an epitaph for George. It may provide some timely advice for us all as 2021 starts to unfold. **AQA**

Peter Walsh,
Chair, AQA



Wetlands issue the top AQA priority

AQA CEO Wayne Scott

Changes to recently implemented regulations that prohibit development of anything loosely defined as ‘natural wetlands’ remains the top priority for the AQA in 2021.

This was set by the AQA Board at its final meeting for 2020 with board members reporting the prohibition is already impacting on quarries in Auckland, Waikato and Wellington.

AQA chief executive Wayne Scott says he is working with members and allied organisations to seek changes to the National Policy Statement (NPS) on Freshwater Management and Regulation 53 of the recently implemented Freshwater Regulations that, from last September, prohibits ‘mineral and aggregate’ extraction activity and earthworks generally on land deemed to be natural wetlands.

In late November 2020, the AQA hosted Ministry for Environment officials on a visit to two Auckland quarries – Winstone Aggregates Flat Top and Fulton Hogan’s Drury operation.

Advice was expected to be provided by MfE officials to Environment Minister David Parker before Christmas.

“The problem centres on how you define a ‘natural wetland’,” says Wayne.

“Some are pristine wetlands with high

ecological value that we as industry want to see protected; we understand that most such wetlands have been lost and the Government is determined to protect the remainder.

“However, the same definition applies to literally millions of small patches of wet grass and scrub around New Zealand. The ‘prohibited’ activity status means there is no opportunity to apply for resource consent and/or assess the merits of that land against a quarry or mining extension or new operation.”

Wayne says a Regulatory Impact Analysis done before Regulation 53 was promulgated only considered the impact on coal mining permits, ignoring the impact on any other minerals including aggregates.

“Consideration of how this would impact on quarrying, gold mining, iron sands and other minerals was overlooked or ignored.”

OceanaGold has stated that if Regulation 53 endures – it will prevent access to around \$1 billion worth of gold at the Macraes site in Otago. Wayne says many quarries will also be affected.

“We would lose 150 million tonnes of resource from the Drury quarry alone – about 10 years of supply to the Auckland region – and that’s just one affected site.”

He now believes there will be changes

to the regulatory environment involving wetlands.

“The signals are positive. There’s been such a response to the FM Regulations – we’ve even had Forest & Bird come out against aspects of them including Regulation 53.

“The Government does not want to stymie access to aggregate especially when it’s the key to infrastructure, which is the co-driver along with primary industries of the post-Covid economic rebuild.”

However, Wayne says the next challenge may be the time it takes to see changes emerge to the controversial ban on earthworks on natural wetlands.

“A change to a regulation can take 18 months, however changes to the NPS FM should be relatively quick to achieve. Our next task is to impress upon Ministers and officials that the quarrying sector needs to know when changes are going to be made and when they will take effect.

“At the very least, our industry must be told the timeframes so we can plan around any delays in introducing necessary changes to the current prohibition.”

Wayne Scott says if changes are not made to the wetland regulations, New Zealand will need, over time, to start importing aggregates and limestone, together with more coal. **AQA**

George, in his own words

Not long before he passed away in November at the age of 84, quarry industry veteran George Cunningham wrote a set of notes on his working career ...

"When Dad told me in late November 1952 that he had arranged a job for me at Horokiwi Quarry I was dismayed!

"I had planned to go on to University to study accountancy. So, my future was set by him. Dad was working part time there as a driver. I set off on my bike to ride the 10kms to the quarry, where the co-owners Fritz Dolling and Charlie Lee welcomed me and set me to work.

"Fritz taught me to run the quarry office and Charlie (a qualified Quarry Manager) and the other employees taught me the things I needed to know about drilling, blasting, crusher operations etc."

George gained his A Grade qualification while at Horokiwi and married Karen while working there before leaving in mid-1959 after being declined a wage increase.

He joined Wilkins and Davies (W&D) the next year on nearly double the income and gained a ute, staying with the company in various senior roles and locations here and overseas until 1987.

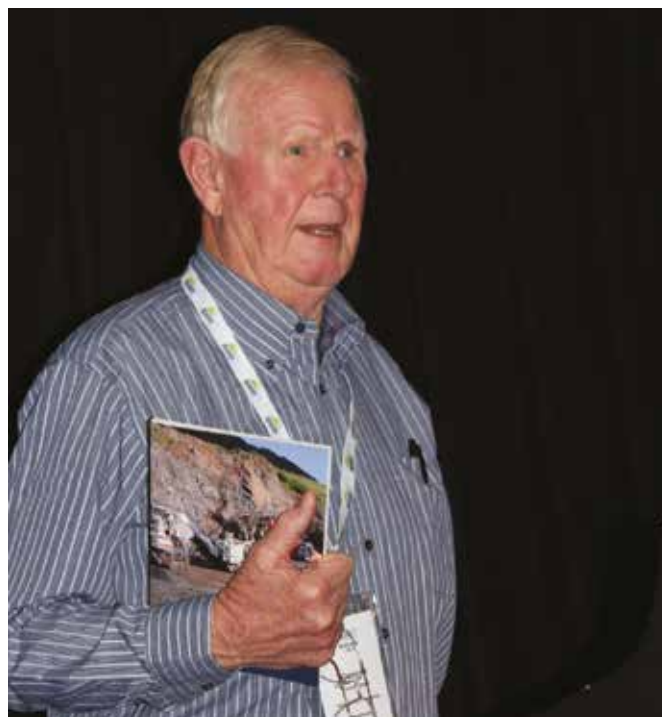
He managed or established quarries in locations including Turangi, Taumaranui and Westport as well as establishing a Murchison alluvial gold mine and inspecting Puketutu Island – recommending W&D buy it.

During this time, George commenced his industry support roles that included being chair of NZIOQ, a founding member and 25-year involvement with the AQA including six years as president, and an A Grade CoC examiner for 12 years.

In 1987 he stood for National against Labour's Finance Minister Roger Douglas in the Manurewa seat.

"The time between February and August '87 was hectic. Election poster signs put up, public and committee meetings, door knocking, hand shaking, writing articles, traveling to the Beehive and newspaper interviews. Voting Day on 15th August '87 dawned fine and calm.

"By about 9pm the TV One Broadcast started to declare some



final electorate results. I held my breath! 'Roger Douglas, Labour has retained the Manurewa seat!' I later found out that I had reduced his majority votes by 3880 votes.

"I felt reasonably satisfied."

George went on to form Porchester Agencies, which provided advice on quarrying activities to many clients, assisted by his formidable record keeping of production statistics over the years.

"It is with much satisfaction that I can say that in almost every instance I was able to make contributions that kept virtually all of my clients' quarries operating."

One of those clients was J Swap Contractors, based in Matamata where George moved to with Karen in 1992.

"My research had clearly indicated that quarry activity expansion in the Waikato and Bay of Plenty regions should, over the next two decades, provide a sound base for the expansion in demand for my quarry consultancy services.

"One well established quarry owner ... immediately engaged my services. I enjoyed a strong and harmonious 20 year working relationship with that client until I decided to wind down my activities in 2013.

"Finally, I will close by recording my sincere thanks to all of my clients who showed faith in my recommendations and judgements made in an endeavour to obtain the very best outcomes possible for all parties involved." AQA

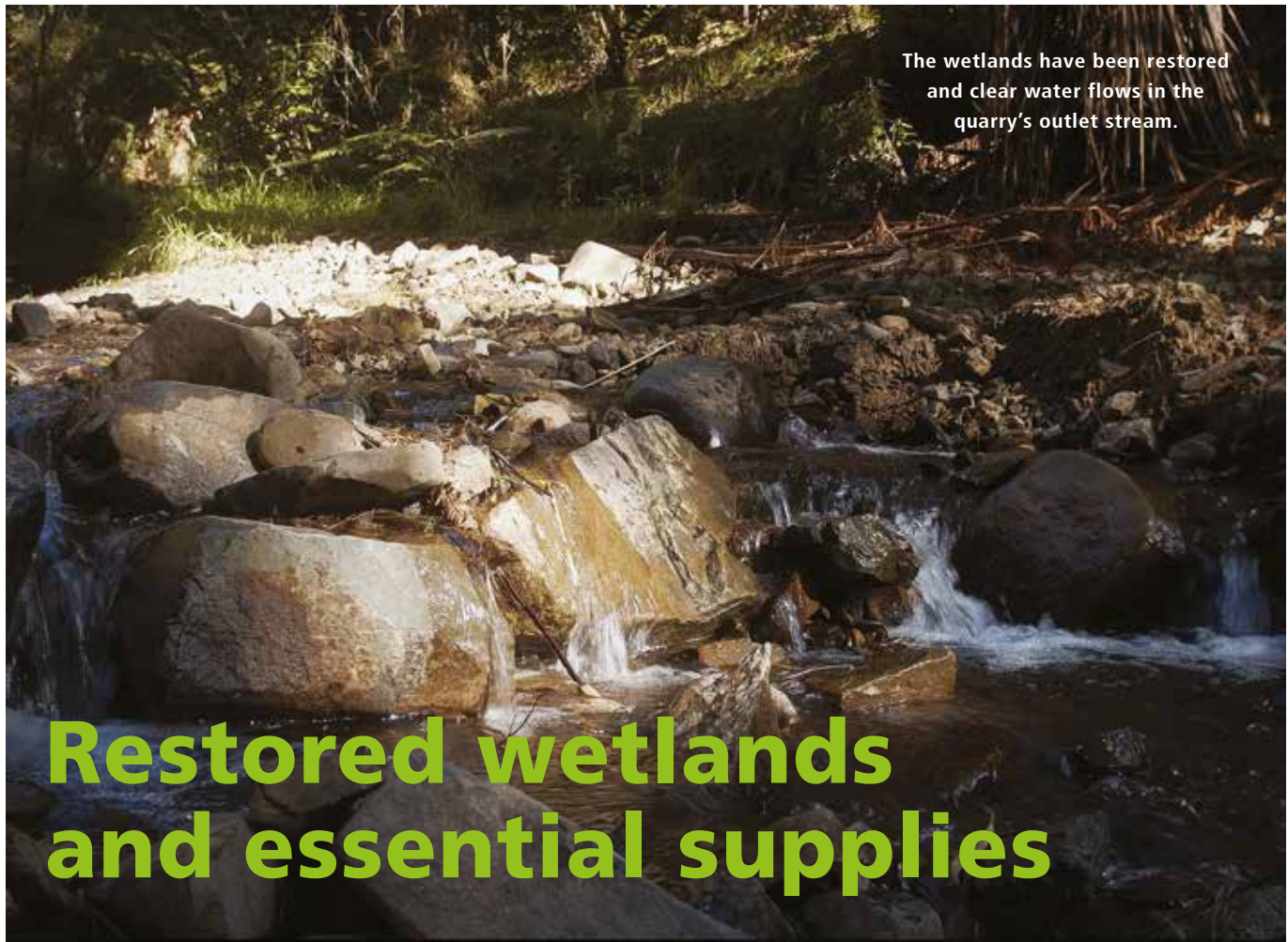
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The wetlands have been restored and clear water flows in the quarry's outlet stream.

Restored wetlands and essential supplies

Willowbank, a disused quarry pressed back into service to provide rock for the Transmission Gully project, is another example of a quarry doing good things for wetlands.

Sited above the Pauatahanui inlet east of State Highway One, Willowbank farm covers around 700 hectares.

Along with running sheep, cattle, alpacas and horses, Willowbank Farm manager Paul Nation added quarrying to contribute material to the much-delayed Transmission Gully project sited just 2.5 kilometres from the quarry. The four-lane highway is now due to link the Kapiti Coast into Wellington later this year.

"No-one had used the quarry since the late 1990s. As a neighbour, it had been a thorn in the farm's side. But when the land came up for sale – we bought it. We knew we could clean up its environmental issues."

About 700 metres of stream had been covered over with rocks and boulders from the disused quarry.

"So, we've removed those to daylight the stream and we've built fish ladders and also a whole lot of stream diversions so now all the fish can go right up the streams and go right to the top of the farm."

Now 26,500 native plants call it home. The wetlands have been restored and clear water flows in the quarry's outlet stream.

"We can drink it now. It's beautiful ... pristine."

AQA CEO Wayne Scott says Willowbank is another example of how quarries add to positive environmental outcomes, including wetland improvements.

"We are trying to get this message across to the Government, especially with the new regulation banning earthworks on anything deemed natural wetlands.

"It's invaluable for Transmission Gully to have a quarry so close to the works.

"There's less impact on communities and road users."

Some other quarried material for Transmission Gully was being transported from as far away as Taranaki, he adds.

The country has an abundance of rock, but it's getting ever harder to get access due to urban encroachment and Wayne Scott says projects need to plan how they're going to source rock ahead of time and quarries like Willowbank are needed.

"With population growth, the fact is we need a lot more quarries in high growth areas."

The TG project simply could not be built without Willowbank's bountiful supply of solid Greywacke, says Sergio Mejia, CE of the Wellington Gateway Partnership, the consortium contracted to deliver Transmission Gully.

"There is no other reliable local source capable of supplying the volume and quality of material needed for a project of this scale."

He says the project is trying hard to mitigate the impact on locals, with constant noise and vibration monitoring and strict rules around nightworks.

"Our builder is keeping the quarry working hard right now to get all the rock out fast and minimise ongoing disruption. We're incredibly grateful to our neighbours for their patience, and accommodating us during this busy time."

All the rock needed for Transmission Gully has to be extracted by the end of March 2021 under the resource consents issued for the site. Willowbank's owners hope other roading and environmental projects may follow. **AQA**

Cutting emissions a key focus

Ways to reduce carbon dioxide and other emissions in the quarrying industry will be an increasing area of focus and work for the AQA.

CEO Wayne Scott says some bigger companies are leading the way but there needs to be a wider pick-up by smaller operators.

In November, Wayne attended the Infrastructure New Zealand conference which included two separate sets of presentations and panel discussions on climate change and emissions reductions.

While there was much discussion across the New Zealand transport, infrastructure and extractive sectors, Wayne says not a lot is happening by way of actual reductions.

AQA chair Peter Walsh says New Zealand remains well off the pace as a nation in meeting its commitment, agreed to with most other nations under the 2015 Paris Accord to limit global warming to well below two degrees Celsius (increase), compared to pre-industrial levels. To achieve this New Zealand is supposed to be carbon neutral by 2050.

Peter says his own company, Fulton Hogan, has been doing work with electric trucks as well as focusing on using diesel-driven trucks and machinery at full production capacity, which can reduce diesel use of up to 40 percent per tonne.

“We are looking at things such as the travel distances on haul roads, road gradients and overall site design so as to minimise haulage volumes and distances whenever practical.”

Changing such practices and adopting others that are quarry

specific can bring improved productivity and cost savings, as well as emissions reductions.

He pointed to the benefits on these fronts that are delivered when quarries are located within reasonable proximity of their markets.

“That’s a key issue for our sector – ensuring we can retain quarries and start new ones near urban areas where demand is highest, rather than trucking in materials over long distances at unnecessary cost to the environment and consumers.”

Ian Wallace, Environmental Manager for Winstone Aggregates, says his company is rolling out a plan to trial a range of new technologies including biofuel, electric and hydrogen vehicles. This also includes a range of initiatives to reduce carbon emissions via improved quarry design (to reduce fuel burn), load out configuration and energy supply on site.

Tony Hunter from Blackhead Quarries says he continues to be impressed with the results he’s getting after importing the country’s first electric haul truck more than a year ago.

The Chinese-built XCMG e-truck is carrying 20 30 tonne loads at Dunedin’s Logan Point quarry for around \$4 a day in electricity charges.

Wayne Scott is planning an Environmental Workshop in 2021 that will include how quarries can improve their emissions profiles, and the benefits that can flow from adopting new approaches and technologies. **AQA**



Electric trucks, such as the first operating at Logan Point, are one way to reduce emissions.

2019 Aggregate Production Statistics

By Mike Chilton
AQA Technical Adviser

New Zealand Petroleum and Minerals (NZPAM) published the latest (2019) statistics at the end of November. This represents 416 quarries out of 522 surveyed, a healthy 80% response rate. Thanks to the 193 companies that submitted returns.

In total, quarried material production of just shy of 40 million tonnes was reported for the year. That works out at 8.1t per capita (in red). When corrected for response rate, total production is just over 50Mt for the year which equates to 10.2t per capita.

As we've said before, this annual survey is the best source of information we have on aggregate production in NZ. MBIE relies on it for policy formation and industry strategies and the AQA relies on it for information provided to the Government and the public.



The output per quarry continues its upwards trend. The annual average output per quarry is now over 95,000t – well over double that of five years ago.

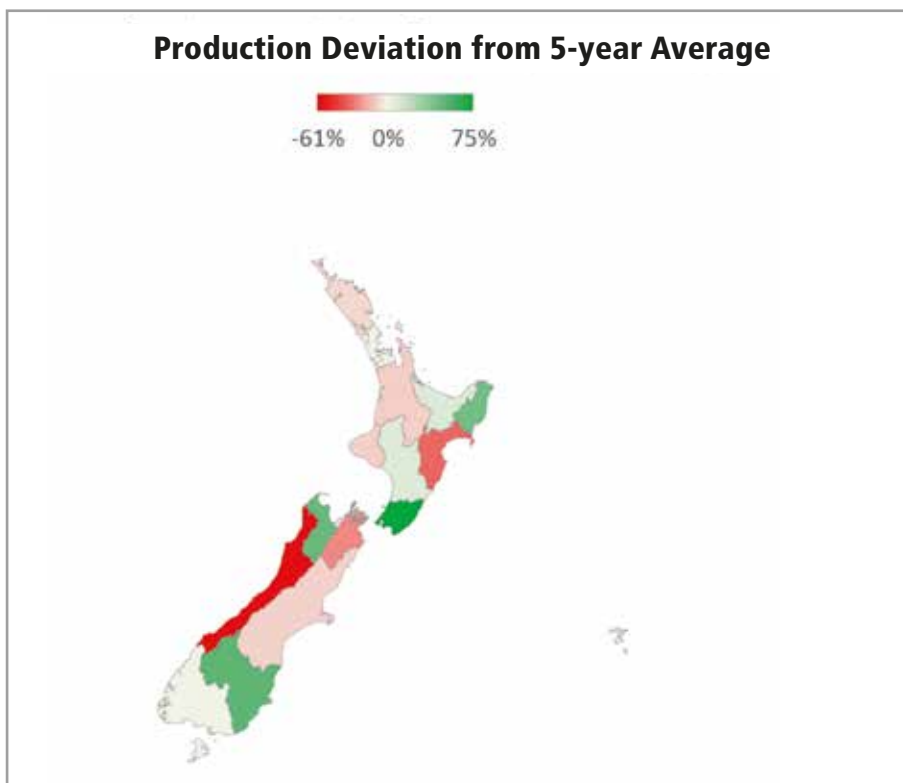
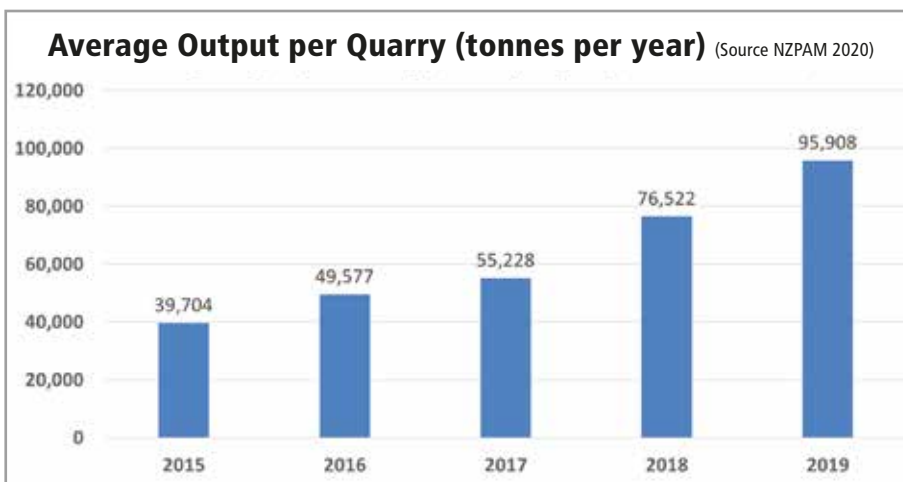
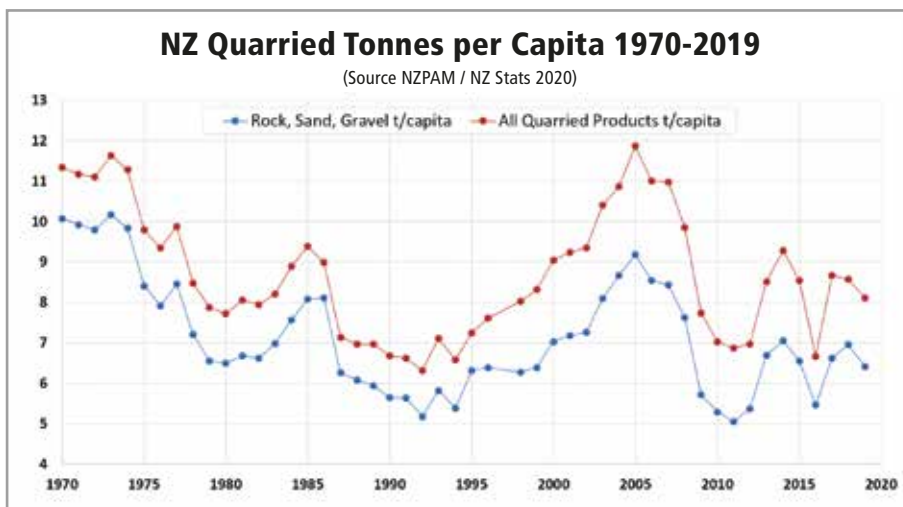


Regionally, there were some significant deviations from the previous 5-year averages. Gisborne, Nelson/Tasman and Otago were up 40-50% while Wellington was up 75% – no doubt boosted by the Kapiti RoNS projects, notably Transmission Gully and strong infrastructure demand. Gisborne/East Coast's spike is likely due to PGF funding and Road Safety spending.

Hawke's Bay and Marlborough were down around 30% (Marlborough's figure likely reflecting lower demand post the Kaikoura earthquake roadworks given neighbouring Nelson Tasman was up) while the West Coast was down by 60%, probably due to lack of information.

Other regions had less than 10% change. Canterbury is reverting to pre-earthquake recovery volumes which was always going to happen.

Auckland is on population growth trend, and while Waikato being flat is a little surprising, we have seen the completion of SH1 projects in that region over the past year.

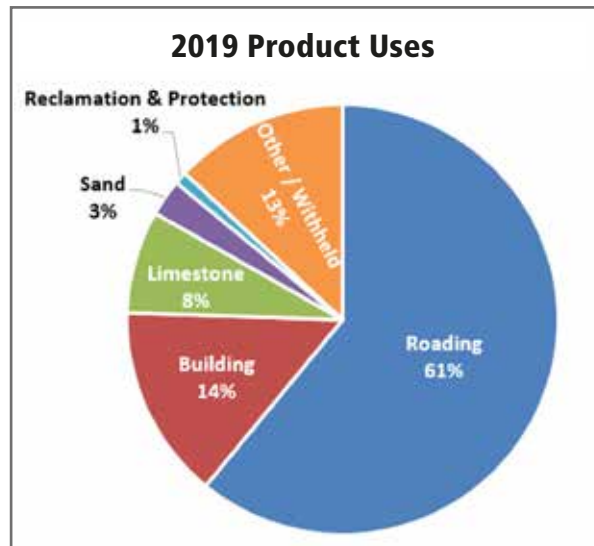


TECHNICAL ISSUES FOR AQA MEMBERS

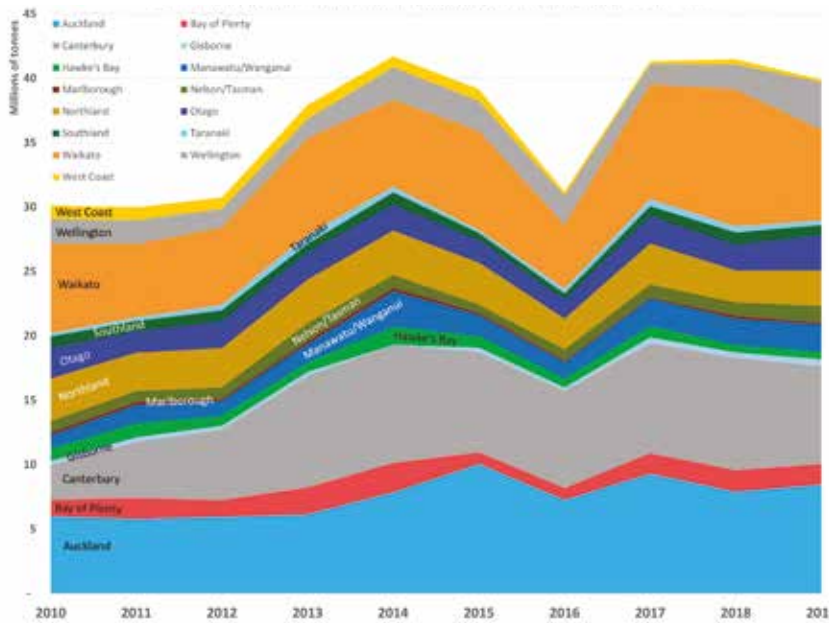
Looking at the material uses, 2019 was the first year since 1995 where roading aggregate made up over 60% of quarried materials.

Roading products (24Mt) increased their total tonnage for the third year in a row.

Building aggregates declined to 15% (5.8Mt) which was significantly down on the previous 5-year average of 9Mt.

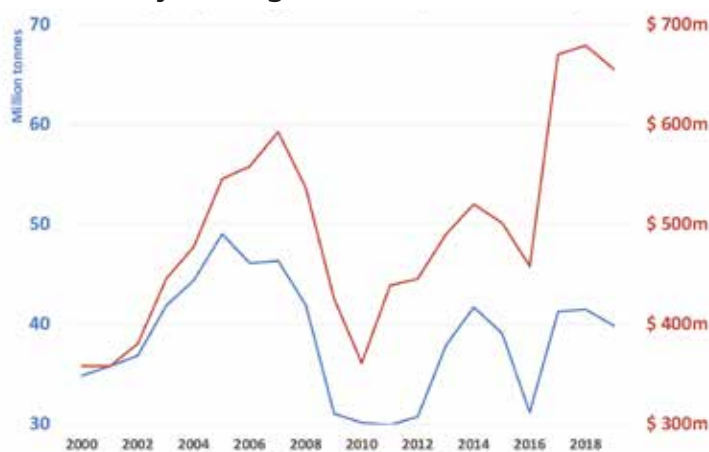


NZ Quarry Production by Region (Previous 10 Years) (Source NZPAM 2020)



And this graph compares regional production over the past decade.

Quarry Tonnage vs Revenue (Source NZPAM 2020)



Note also the drop in revenue per tonne in 2018/19.

Anyone interested in a PDF summary sheet of the figures can email me tech@aqa.org.nz **AQA**

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Aggregate & Quarry
Association of NZ
P O Box 10-668
Ground floor 93 The Terrace
Wellington 6143
0800 469 272

Chief Executive Wayne Scott
wayne@aqa.org.nz
021 944 336

www.aqa.org.nz

