# Sentiment

## Infrastructure and buildings construction survey

New Zealand 2022

Start

# The review

At AECOM, we are committed to delivering a better world. With the Infrastructure & Buildings Sentiment Survey in its twelfth year, we are continuing our mission to collect valuable industry insights and to ensure we are well positioned to take on the challenges and opportunities that confront our industry.

This year's survey highlights a number of key themes, including the need for a clearer understanding of the pipeline of future projects to allow organisations to build the capacity to deliver essential infrastructure sustainably. The overall optimism across the country has softened slightly, although this is more pronounced in Auckland than in other regions.

Both the infrastructure and building construction sectors expect expenditures and workloads to return to pre-pandemic levels (2019) in most regions, but the COVID-19 pandemic's economic repercussions are expected to remain. Although New Zealand has limited ties with Russia and Ukraine, the war in Ukraine has had several indirect effects on the country's industry with higher global energy prices, rising interest rates, and ongoing disruptions in the global supply chain.

Despite rising inflation and supply chain constraints, skills and material shortages are a defining challenge for the industry. The reduction in skilled labour migration due to border closures along with the highly restrictive immigration rules has created an environment where there are not enough workers with the right skills available. While the government has reopened borders and immigration, this will only help address the skills shortage in the short term. It is anticipated that New Zealand will be nearly 120,000 construction workers short by 2024 unless more lasting solutions are developed to address the skills needed.

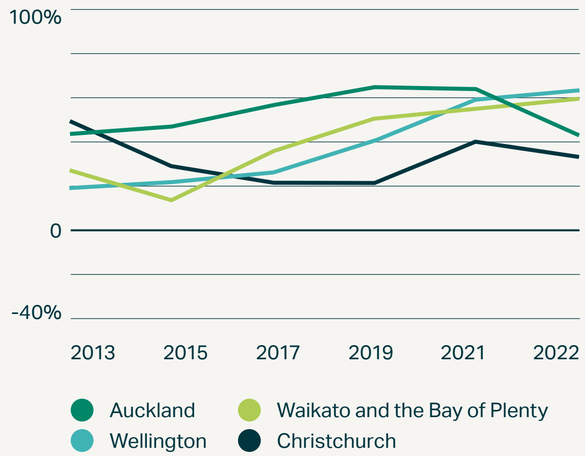
Material shortages are being blamed on the COVID-19 pandemic, and while it contributes to the issue, the shortage is driven by the rapidly increasing demand for new construction. With reliance on imports from Australia and other nations, major producers prioritise large economies, leaving New Zealand with large-scale shortages of materials, especially in timber and reinforcing steel.

Over the next four years, the industry should see an increase in public sector activity with a strong focus on transport initiatives as outlined in the Budget 2022 announcement. However, this is likely to place a further strain on the already tight market. There is also a need to leverage our low-emissions energy resources, plan for generations to come and focus on climate change initiatives.

## Delivery expectations trend

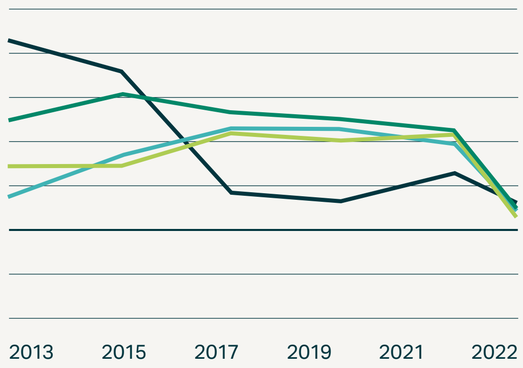
### Infrastructure market

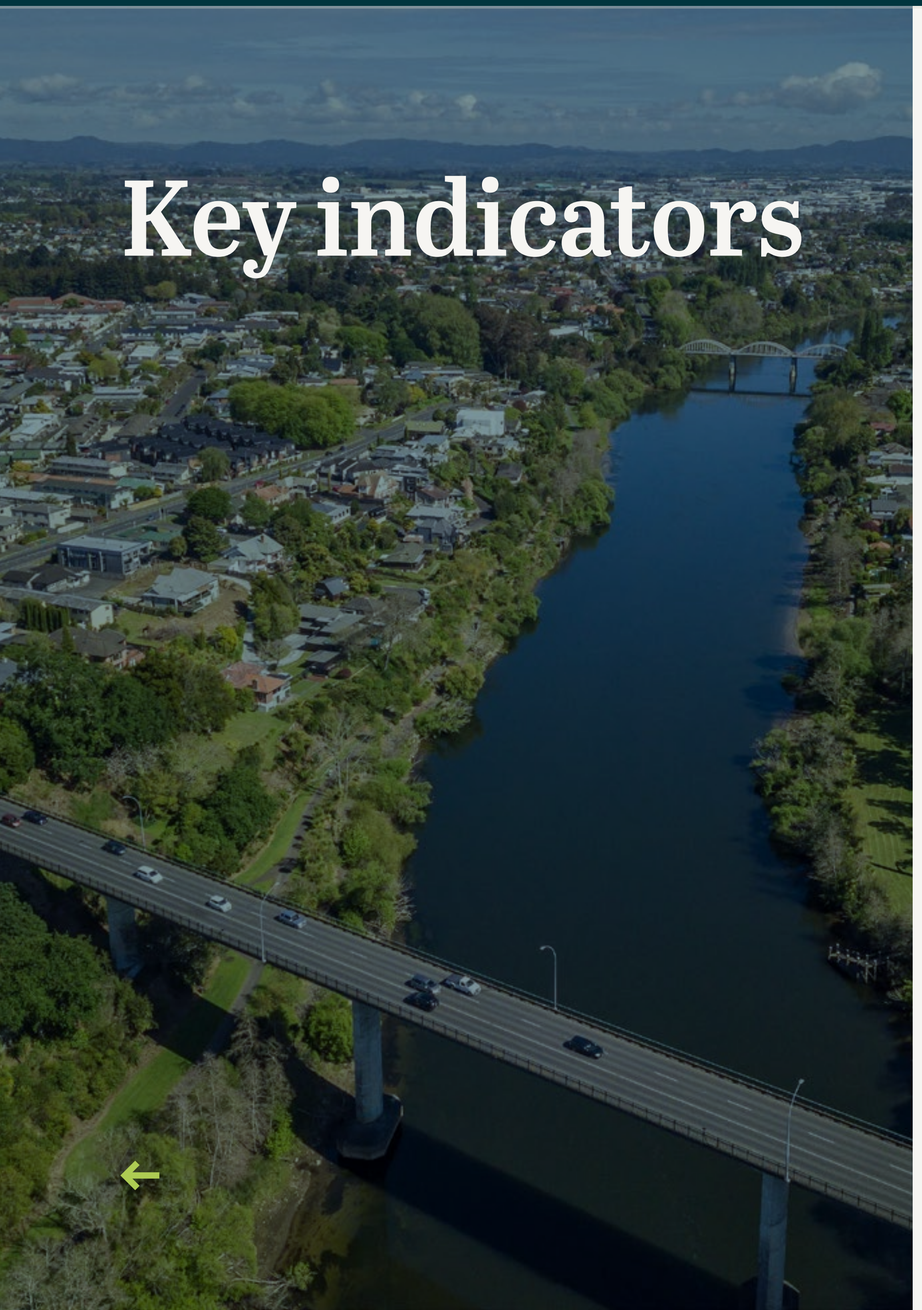
*14th industry survey*




### Buildings market

*20th industry survey*



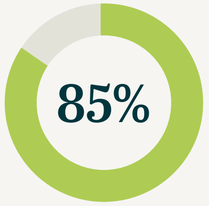


# Key indicators

## Delivery and investment expectations


### Optimism for infrastructure investment remains strong

90 percent of respondents expect their organisation's infrastructure expenditure to increase or remain steady




### Buildings market outlook remains positive

85 percent of respondents expect their organisation's construction expenditure to increase or remain steady


### The need to invest in infrastructure to support growth

98 percent of respondents identified investing in infrastructure to support growth as a high or medium priority for local government authorities


### Ageing assets identified as a priority for local authorities

99 percent of respondents identified maintaining and repairing ageing assets as a high or medium priority for local government authorities

## Industry spotlight

### Prioritise public transport

More than twice as many respondents see improving public transport options and reliability as the most important step to improving New Zealand's transport systems

### Delivering projects

The majority of respondents want to see a solution for the skills and material shortages, escalating construction costs and supply chain issues

### Clean energy investments

Robust energy infrastructure is crucial to enable new generation connections across the country

# Infrastructure market

## Investment and delivery expectations

The confidence level in New Zealand's infrastructure market remains steady despite concerns about skills shortages, increasing cost pressures, and supply chain constraints.

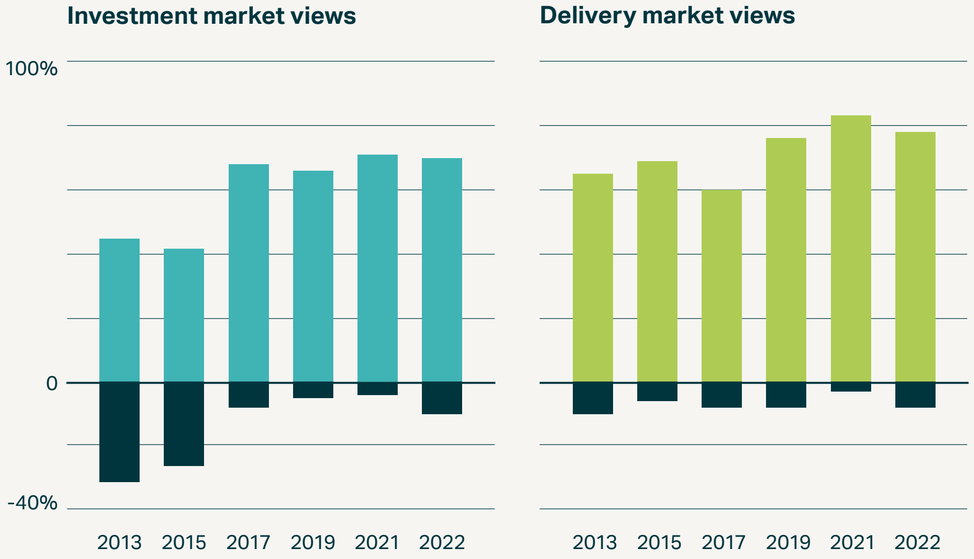
### Increased investment

In this year's survey, the overall outlook for the infrastructure market has remained strong, with little change from 2021. Over the next three years, 70 percent of respondents expect investment levels to continue to increase. However, 10 percent of respondents expect investments to decline compared to 4 percent reported in 2021, which is likely influenced by the rising costs and availability of labour and materials to deliver infrastructure efficiently. While infrastructure spending is up, the need to develop new infrastructure and improve and renew existing and ageing assets directly correlates with the pressures of a growing population and the impacts of climate change.

### Delivery market remains steady

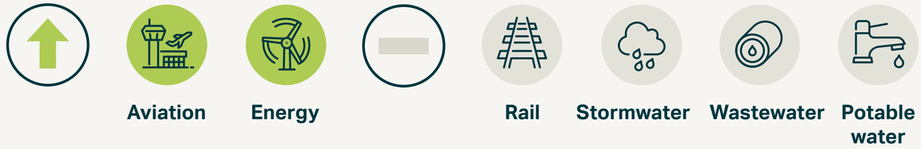
Although there is still a strong expectation from 78 percent of respondents that the workload will remain steady over the next three years, a number of respondents indicated a degree of uncertainty in the market compared to 2021. This sentiment is reflected in the construction sector. The drop in confidence is likely influenced by the ongoing shortage of skills and materials, rising construction costs squeezing infrastructure budgets, and the contract terms for delivering work programmes becoming increasingly complex.

### Infrastructure outlook




*Note: These measures of improving or declining expectations represent the proportion of respondents' views on market direction — not the actual anticipated change in deliveries.*

# Delivery by region and sector — infrastructure market




## Overall expectations by sector

There is notable growth in optimism across several sectors in the infrastructure market. On average, the energy and aviation sectors across New Zealand have the highest share of respondents expecting increased investment. However, aviation is not quite back at the level of optimism pre-pandemic. The outlook in land development and roads has declined across all regions, which can be attributed to the lack of land supply for infrastructure projects linked to high land prices.

Of most concern is the reduced optimism from respondents located in the upper North Island, which shows a distinct fall in optimism. The upper North Island is New Zealand's heart and accounts for more than 50 percent of the country's population growth and 55 percent of the national GDP. An increase in pessimism in this region is a strong indicator of the challenges ahead.

## Auckland and Northland

Within the upper North Island, the outlook across most sectors has softened, notably in potable water and land development. The most improved score compared to 2021 was aviation, up from 31 percent to 42 percent in 2022, reflecting Auckland International Airport Limited's terminal development plans following the reopening of New Zealand's borders to international visitors. In Auckland, there is a slight decline in rail and roads, which may be influenced by the major works currently underway on the City Rail Link (CRL) project and possibly the ongoing discussions around the cost and timing of the Auckland Light Rail and Additional Waitematā Harbour Connections projects.

## Waikato and Bay of Plenty

The rail, road and energy sectors show continued optimism within the central North Island. With the Waikato region being a nationally significant infrastructure corridor, the government is expected to allocate infrastructure funding to projects in this region for road infrastructure, with talks of increasing the capacity of the freight network. The energy sector is receiving a significant boost in this region as energy providers are investing in strengthening the grid, solar and geothermal energy. The outlook for land development has declined significantly from 73 percent in 2021 to 33 percent. This could be related to delays in the allocation of land, supply of materials and the many issues faced due to lengthy consent processes and challenges to accessing development finance.

## Lower North Island

There has been an increase in optimism in the lower North Island energy sector since 2021, reflecting the government's energy strategy on transitioning to net-zero carbon emissions by 2050. Rail has seen an increase in optimism where the government has allocated more than a billion dollars of funding for the New Zealand rail upgrade programme. This includes overhauling services and amenities on the Wellington, Wairarapa and Palmerston North network and beyond, the extension of the Wellington metro network to provide double tracking between Trentham and Upper Hutt, and raising the standard of the ageing Wairarapa Line, including the Rimutaka Tunnel.

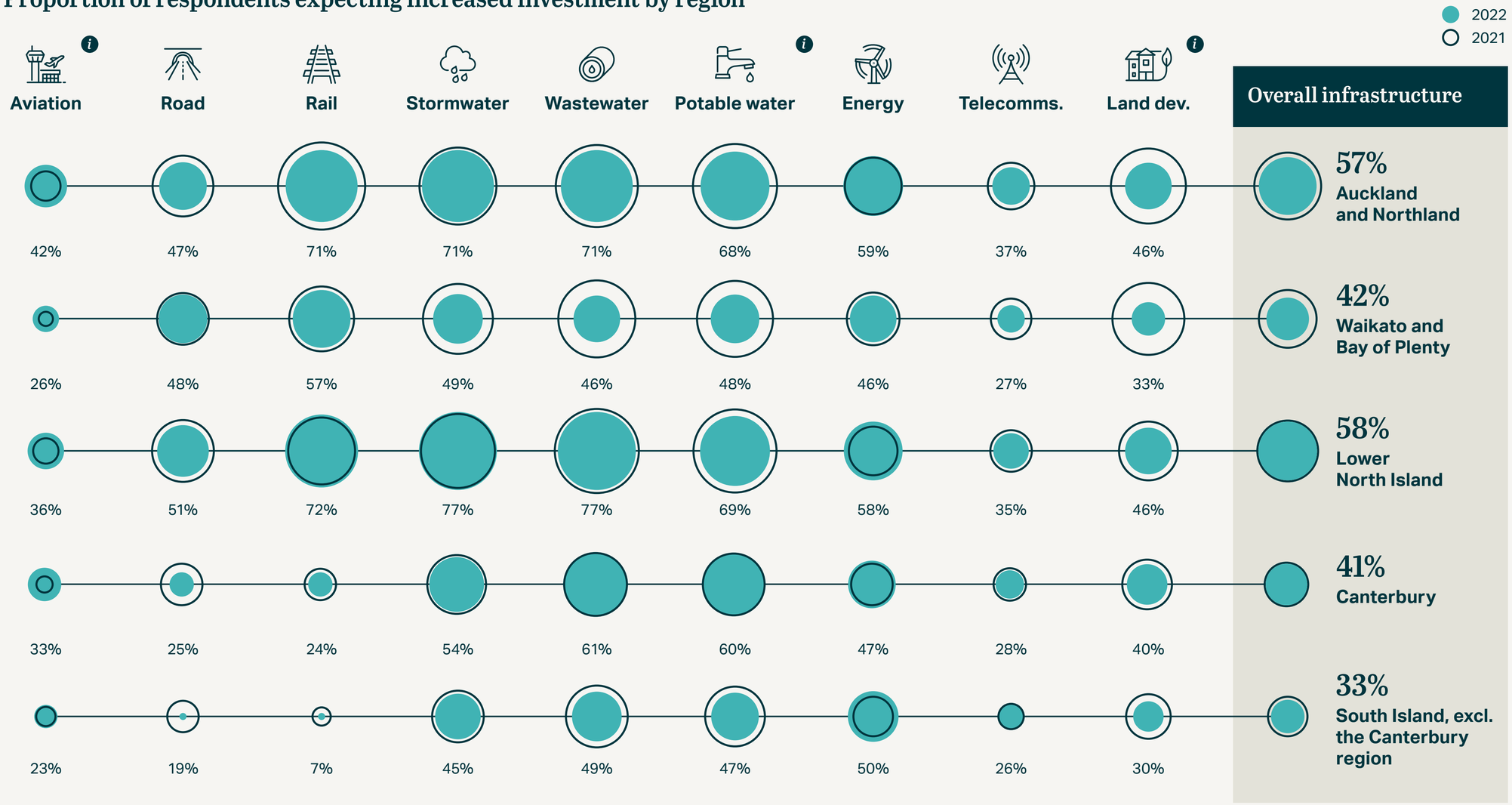
## Canterbury

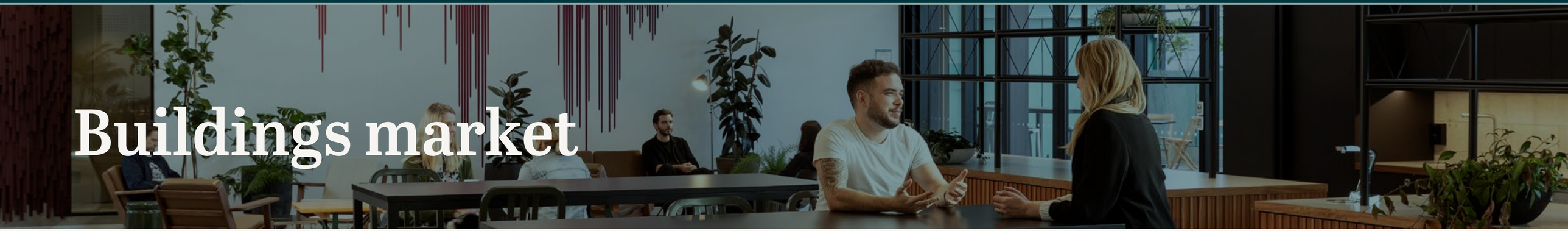
In the Canterbury region, optimism across most sectors remains fairly consistent when compared to previous years. In the energy and aviation sectors, workload expectations have shown a marked increase, possibly as a result of the Christchurch International Airport's plans to provide a variety of green energy schemes. There is a notable decrease in optimism in relation to the roads, three waters and land development sectors. This is not surprising given the delays and lack of certainty over the delivery of infrastructure projects.

## South Island, excluding the Canterbury region

Outside of the Canterbury region, optimism has eased across most sectors, possibly due to funding pressures experienced by local councils. The energy sector has seen an increase in optimism from the previous year with probable growth in renewable energy, industrial and tourism investment in the lower South Island.

## Proportion of respondents expecting increased investment by region





# Buildings market

## Investment and delivery expectations

Sentiment in the construction market remains steady, with respondents continuing to express confidence in investment and delivery. Despite a drop in the overall outlook across the country, the optimism has returned to levels pre-COVID.

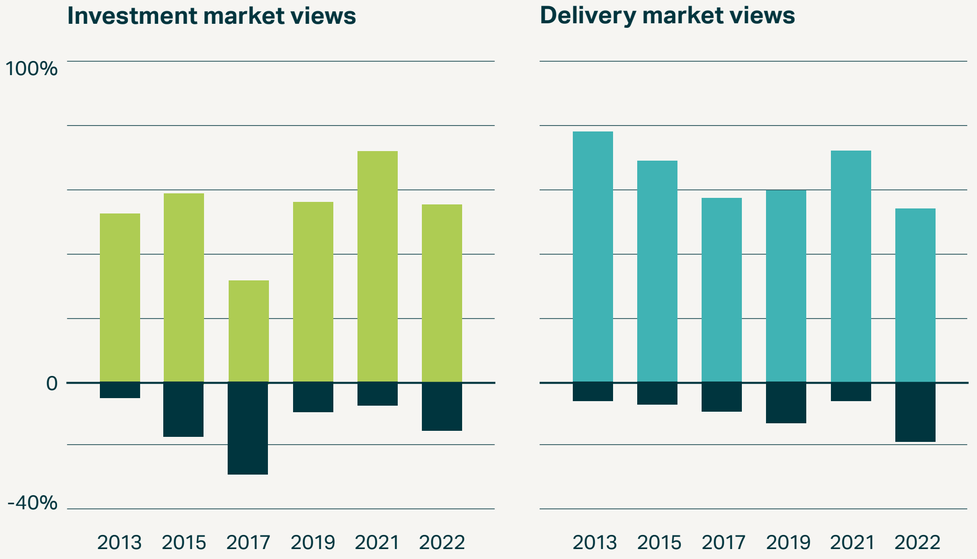
### A steady expectation of increased investment

This year, more than half of the respondents (56 percent) expect their organisation's expenditure in the buildings market to increase over the next 12 months, down from 72 percent in 2021. Only 15 percent of respondents expect a decrease in workload compared to 13 percent in 2019. Although the sector appears to be returning to pre-pandemic levels of expected expenditure, issues such as increasing costs and procurement processes are impacting the viability of projects.

### Delivery market views remain steady

Despite last year's significant jump in optimism (72 percent), the investment outlook remains optimistic, with 55 percent of respondents expecting an increase in workload, which is nearly aligned to pre-COVID levels. However, respondents' comments highlight the challenge of delivering projects due to the inability to bring skills into the country and supply chain constraints leading to increased material shortages coupled with New Zealand experiencing its highest level of construction price inflation since before the Global Financial Crisis (2007 to 2009).

### Buildings outlook

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# Delivery by region and sector — buildings market


## Overall expectations by sector

On average, across New Zealand, healthcare has the highest share of respondents expecting increased investment, which signals that the health reform will address historical "underinvestment" in this sector. As part of Budget 2022, $1.3 billion will be invested in new and existing hospital projects to improve infrastructure and catch up on the long period of neglect and deterioration. The education sector remains steady, with the government continuing to invest in school infrastructure, totalling $777 million in capital investment, building on the $2.9 billion provided through successive budgets since 2018. Although the outlook for the industrial sector has declined over the last year, regions outside major cities remain steady with the development of inland ports as intermodal hubs resulting from a shortage of warehousing and distribution facilities close to major ports. The impact of the pandemic has resulted in a decline in optimism for the office, retail, and mixed-use sectors. There has been a major shift in how businesses operate, with hybrid working models reducing the need for the amount of traditional office space.

## Auckland and Northland

The construction market in Auckland has been heavily impacted by high inflation and shortages of skills and materials. With a decline in private sector activity, overall construction activity is mainly driven by the public sector, including healthcare. Within Auckland and Northland, there has been an increase in optimism for the tourism and leisure sector from 8 percent to 28 percent, highlighting a strong desire to rebuild this industry and meet the growing demand for high-quality attractions. Market conditions are expected to remain the same over the next 12 months as the private sector remains cautious about starting new projects. Although we have observed notable growth in the residential sector for the past two years, we now see the private sector housing market cooling down compared to 2021 with respondents indicating that optimism in residential buildings falling substantially from 95 percent to 27 percent in 2022.

## Waikato and Bay of Plenty

Within the central North Island, optimism in healthcare has increased since 2021, and now has the highest level of optimism across all sectors. Most other sectors have seen a decline in optimism except for education, tourism and leisure. Although optimism has declined slightly for the industrial and retail sectors, Hamilton is one of the fastest-growing cities in the country. The establishment of the Ruakura Superhub and its inland port operation in partnership with the Port of Tauranga will make Hamilton a major logistics hub, evident by the companies that have chosen to relocate or grow their operations. This includes global shipping company Maersk opening its cold chain facility and retail giant Kmart moving its distribution centres to the Superhub.

## Lower North Island

The outlook in this region has eased across most sectors. In the lower North Island, healthcare now has the highest level of optimism in the region. With the new seismic rating approach, the optimism for the public buildings sector remains steady and reflects the increased seismic upgrade needs. Despite the decline in optimism for the residential sector, 7,000 new homes will be built in the Wellington region over the next two years. Porirua City is leading the way with several mega-developments where Kāinga Ora and Iwi initiatives aim to bring social and affordable housing improvements to keep up with population growth.

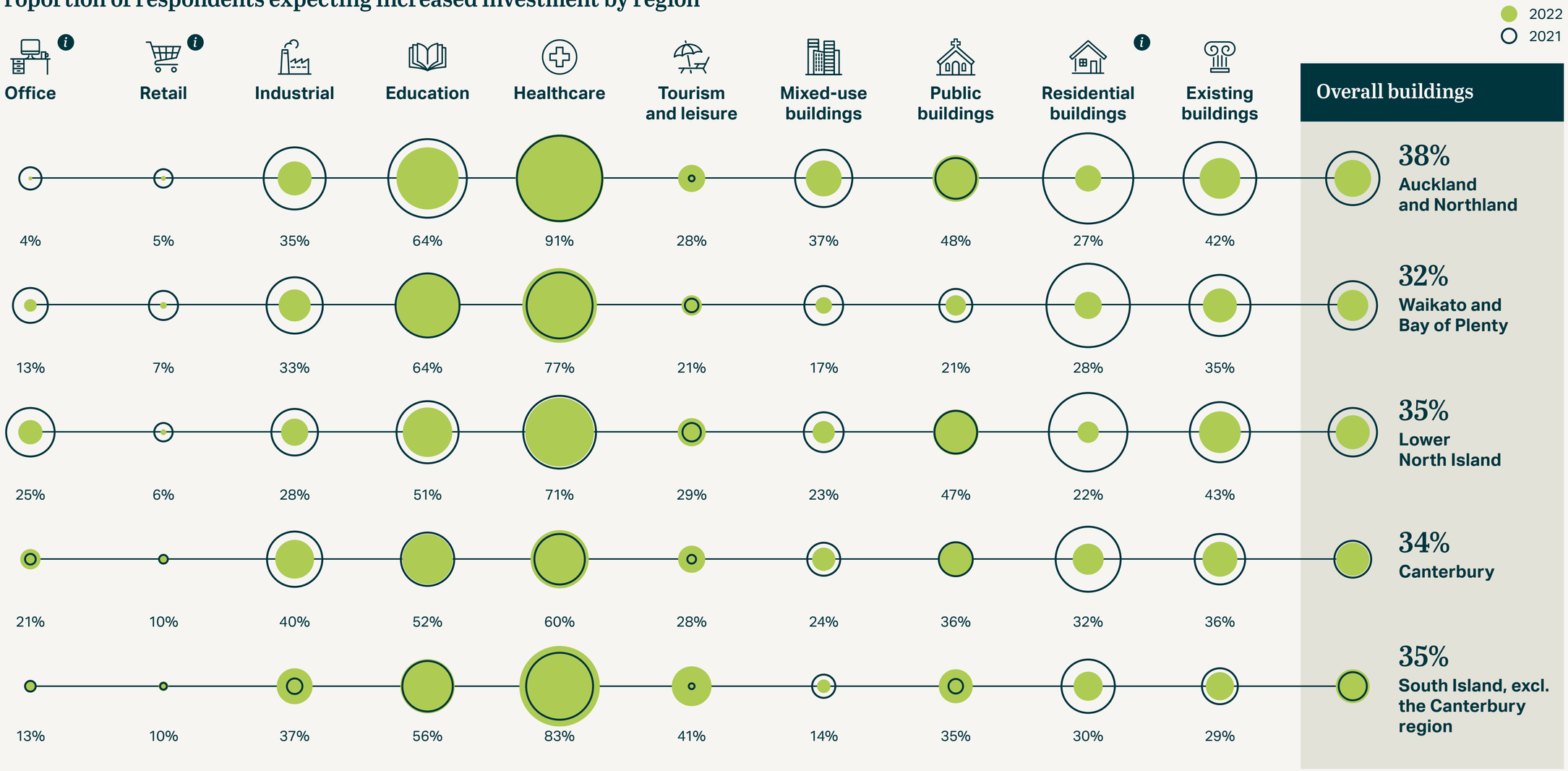
## Canterbury

Christchurch's rebuild after the 2010 earthquakes has largely been completed with the region operating as business as usual. Despite several projects being reconsidered or delayed by the surge in construction costs and skills and material shortages, the construction market in the Canterbury region remains active, with many Christchurch resources travelling to backfill other towns. In the education sector, optimism dropped slightly as a vast number of school projects have been completed as part of the 'Rebuilding Christchurch Schools' with a small number of schools in various stages of design and construction to be completed by 2024. The recent announcement of the Christchurch Te Kaha Stadium going ahead should create greater optimism for the region.

## South Island, excluding the Canterbury region

Outside of the Canterbury region, optimism compared to 2021 has increased in healthcare, tourism and leisure and industrial. Healthcare remains consistently high, reflecting the continued work on major hospital projects like the new state-of-the-art Dunedin hospital. With the South Island being a popular tourist destination, there is a desire to rebuild this sector to pre-pandemic levels. This year, the industrial sector has seen an increase in optimism from 18 percent in 2021 to 37 percent, mainly due to the opportunities arising in the private sector. Optimism has fallen substantially in residential buildings.

## Proportion of respondents expecting increased investment by region



# Industry spotlight

- Nationwide industry challenges
- Local authorities
- Transport
- Sustainability and resilience
- Water
- Energy
- Investment and funding

Click on each button to read more

# Nationwide industry challenges

There is a very strong ambition from the New Zealand Government to deliver on national projects in decarbonisation, transport, housing and urban densification, but in the current environment, it is difficult to achieve this ambition due to the uncertainty in the pipeline and the multitude of challenges facing different sectors.

International factors cause some issues, but others are exacerbated by restrictive immigration policies and project delays. Inflation and COVID-19 have further compounded the problem. It is important to note that the industry has been signalling pipeline and delivery issues to the government for over a decade.

Historical underinvestment in infrastructure has been a handbrake on the New Zealand economy and has led to ageing and neglected infrastructure, congestion in our cities and held back our regions from reaching their economic potential. Taking a long-term approach and looking to the future, the *New Zealand Infrastructure Commission* has developed a 30-year strategy in response to many of the challenges facing the industry.

## Top industry challenges

Skills and material shortages continue to be the industry's top challenge. Border restrictions and uncertainty around the current 'immigration rebalance' policy have caused labour shortages to worsen and are unlikely to diminish in the short term. Over the next few years, building the skills needed to improve infrastructure delivery will be a significant challenge for New Zealand, given the country's small size and competition with Australia for highly sought-after skills as both countries' infrastructure demands accelerate.

High inflation and construction costs are putting pressure on infrastructure budgets. Construction costs are much higher than initially estimated, creating a real risk that some major projects may be dropped or scaled back.

The impact of new technology is only 1 percent, which suggests that implementing digital


innovations is more of an opportunity than a risk. As a result of new technology, construction projects are becoming more robust and efficient, enabling sustainable initiatives. It provides real and reliable protection against cyberattacks, better options for safer worksite conditions, and increased productivity, collaboration, and the ability to handle more complex projects. Keeping up with technological advancements enables the construction sector to mitigate potential delivery risks, and provide confidence for infrastructure investment.

## The main challenge

Respondents clearly identified skills and material shortages, and highly restrictive immigration rules as the main challenge. More than half of the respondents believe the ability to retain and attract key talent in a competitive international market is paramount. The recent government announcement to extend the visa numbers across a few classes including construction will help. However, reopening the borders has resulted in a net outflow of New Zealanders and the improved outlook for the Australian labour market is an attractor.

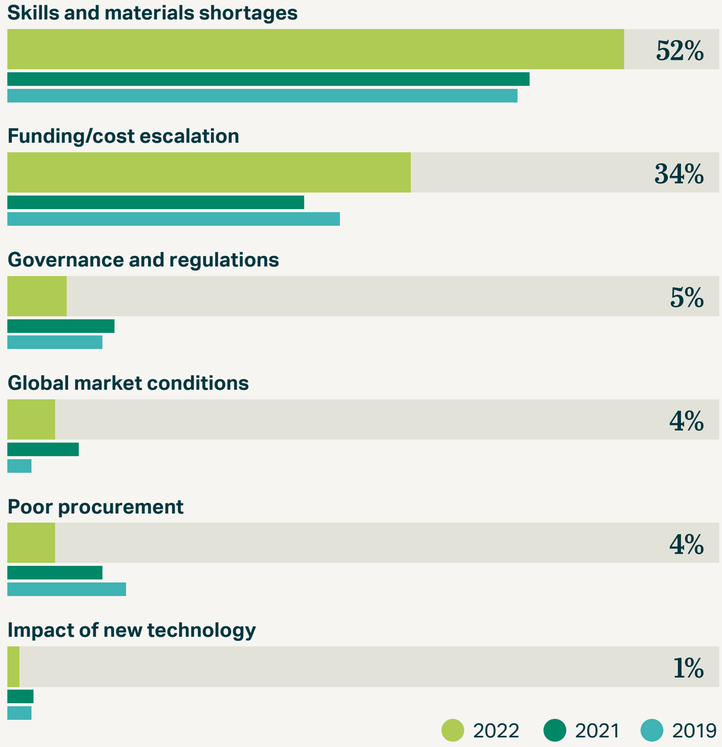
The current supply chain issues and the rising cost of materials were also key concerns among respondents, fearing that these issues would continue to impact project deliverables and have the potential to stifle project margins.

## Potential solutions

Respondents want to see a solution to the skills shortage. The large number of people in apprenticeships should ease labour shortages in the long term; however, urgent actions need to be taken to address the restrictive immigration rules imposed by the government, increasing training incentives, and addressing supply chain constraints that include opportunities for broader outcomes procurement. A need for a better understanding of the future projects pipeline was highlighted to allow organisations to build the capacity to deliver essential infrastructure.

Many respondents want better certainty from the government regarding infrastructure policies and a strategy to support businesses to succeed through less bureaucracy. Respondents indicated a standardised procurement framework across government agencies would be beneficial for ensuring infrastructure projects can be delivered to a high standard and be less exposed to supply constraints and cost volatility.

## Top industry challenges



# Local authorities

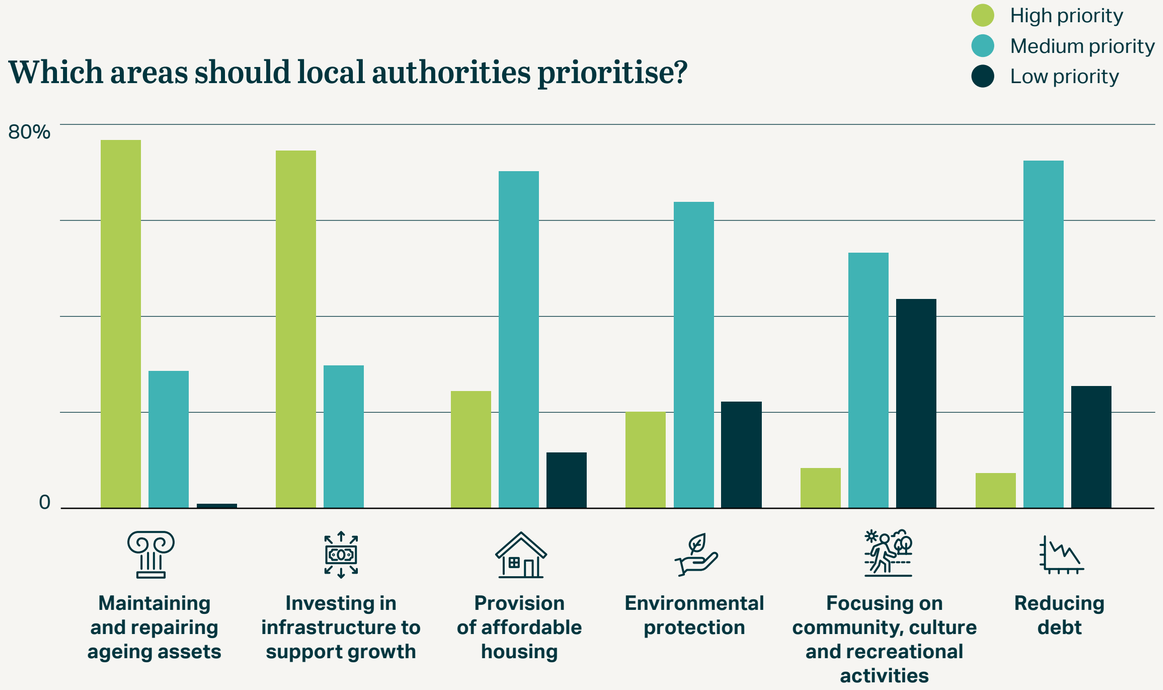
Over the past few years, the government has commenced a significant programme of reforms that affect local government. *Ko Tātou LGNZ* (Local Government NZ) has stated that it is likely that the local government sector will look very different by 2050 as they prioritise how local democracy and governance need to evolve over the next 30 years to improve the wellbeing of New Zealand communities, the environment, and actively embody Te Tiriti o Waitangi in their jurisdictions.

In 2021, the government announced an independent review of local authorities and invested in a programme of reforms that address the three waters, the Resource Management Act (RMA) and local government reform. These reforms are addressing complex issues which may collectively affect a large portion of council services.

We asked our respondents to identify what areas local authorities should be prioritising. An overwhelming 99 percent of respondents identified maintaining and repairing ageing assets as a high or medium priority. Similarly, 98 percent of respondents identified investing in infrastructure to support growth as a high or medium priority for local government authorities. This suggests that local authorities should focus more on the existing and new assets needed to accommodate expected growth in urban intensification. Some respondents raised concerns that an increasing focus on urban intensification requires a balanced investment to ensure a high-quality urban environment for future generations.

On the other hand, respondents see focusing on providing affordable housing and environmental protection, community, culture and recreational activities, and reducing debt as a medium to low priority. This could reflect the efforts already underway in the industry to ensure that infrastructure planning and design is a partnering approach. With organisations like Amotai, many businesses are creating supplier diversity within their business that benefits wider communities. Iwi support helps organisations understand the greatest benefit their development will have for the community.

## Which areas should local authorities prioritise?



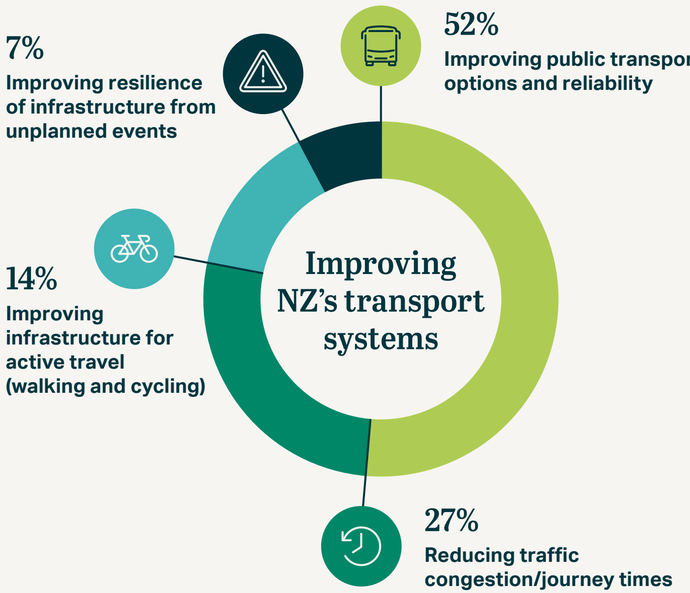
# Transport

For decades, sustainable transport solutions have received little investment. This contributed to a lack of public transport, walking and cycling options in many cities across New Zealand. This historic underinvestment in sustainable transport solutions and rapid population growth compounded and made our cities less sustainable and more dependent on private motorised vehicles. Given the scale and complexity of our current transport, housing, and climate challenges, urgent change is needed.

More recently, New Zealand has declared a climate change emergency. With the priorities outlined by the *Government Policy Statement* on land transport (GPS), central and local government policies clearly outline the urgency to invest in better walking, cycling and public transport options. The need to accelerate targeted mode shift interventions and decarbonising transport is strategically important to the New Zealand government.

## Sustainable transport options

We asked respondents which area is most important to improving our transport systems. Overwhelmingly, improving sustainable transport options is the top priority (66 percent), highlighting a growing alignment between government policy direction and industry sentiment. More than half of respondents (52 percent) see improvement in public transport options and reliability as the top priority, and 14 percent see improving infrastructure for active travel as the top priority.




More than a quarter (27 percent) of respondents believe reducing traffic congestion/journey times should be the priority, and only 7 percent see improving the resilience of infrastructure from unplanned events as the priority.

To transition to a low-emission and climate-resilient future, there is an urgent need to be more ambitious and deliver faster. The recent *Intergovernmental Panel on Climate Change 2022* summary paper for policymakers stresses the urgency that we are not doing nearly enough to achieve the large-scale greenhouse gas emissions reductions needed to meet our international obligations. It also highlights the importance of targeted transport and urban planning strategies to reduce current and avoid future emissions.

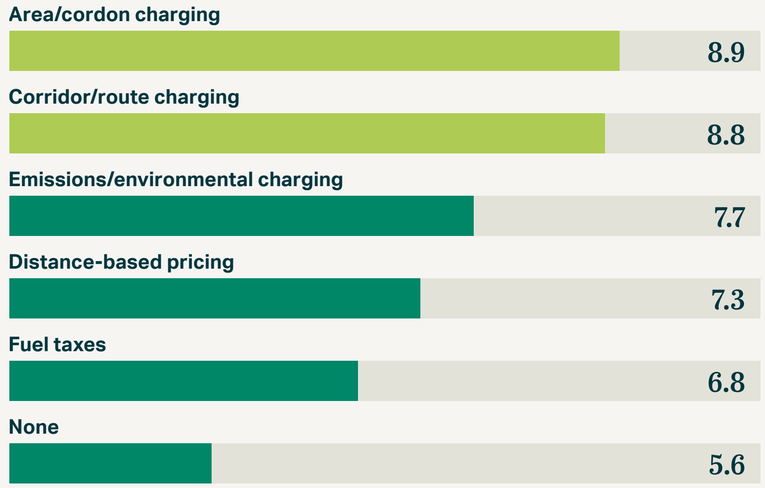
Notably, Auckland councillors have pledged to halve carbon emissions in Auckland by 2030 and recently adopted their *Transport Emissions Reduction Pathway* (TERP) plan that will significantly change how people move around the city.

## Demand management solutions

In July 2022, the government released its *Emission Reduction Plan* that outlines how the country would reduce emissions by 2050. To achieve the net-zero target by 2050, significant reductions in carbon emissions are needed over the next 30 years. The transport system currently accounts for nearly 20% of the country's greenhouse gas emissions.

Implementing congestion charging could change how transport infrastructure is funded and help accelerate various policy outcomes. When asked to rank which mechanism is most suited to solve our mobility issues, respondents have no clear consensus on the best approach to this issue. Instead, the results suggest a range of interventions might be needed. Area/cordon charging received the highest level of support, followed closely by corridor/route charging. Interestingly, doing nothing received the lowest ranking, suggesting a clear consensus that doing nothing is not an option.

## Traffic management solutions



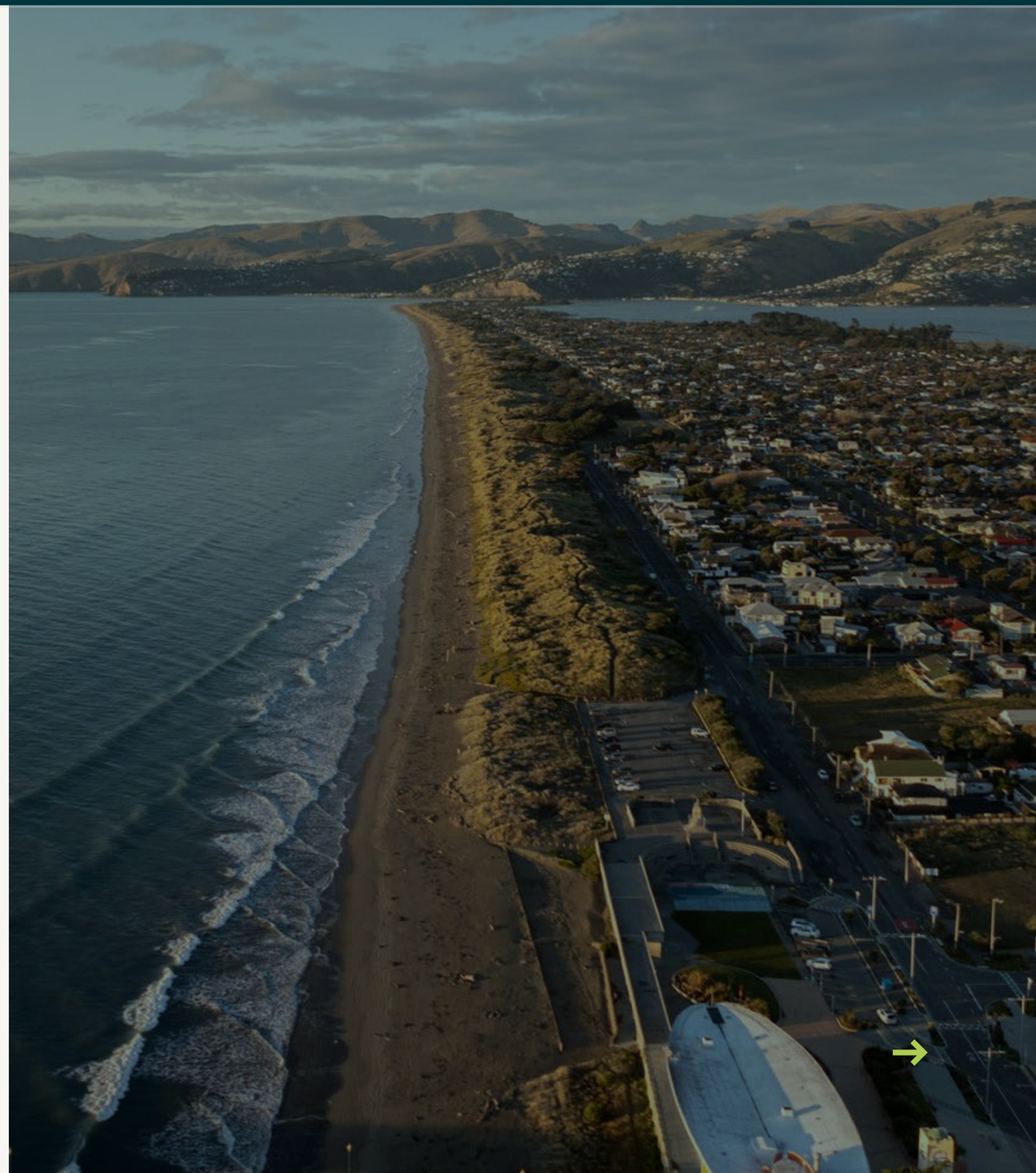
# Sustainability and resilience

As an industry that has proven sustainable and resilient in the face of natural disasters and technical failures, new challenges are now on the horizon. Climate change and a desire to achieve broader sustainability results are putting people under pressure to address how social, environmental, cultural and economic outcomes in their businesses can deliver long-term public value for New Zealand.

Climate change is exacerbating the risk of existing natural disasters — including flooding and drought and long-term sea-level rise. When asked to what extent sustainability should be considered in planning buildings and infrastructure, respondents have given the greatest consideration regarding the effects of natural disasters closely followed by technical failure. Considering the country's experience with extreme weather events over the past year, it's not surprising that natural disasters have been ranked at the top. However, most projects are designed to account for natural disasters and technical failures.

## Investment planning for sustainability and resilience

Respondents ranked transitioning to a lower carbon economy and addressing climate change impacts slightly higher in importance than in 2021. And while climate change issues still receive little attention despite increasing awareness year-on-year, we can expect the industry's emphasis on addressing this issue to continue to grow over the next few years. There is strong support for planning and resource management systems to ensure buildings, infrastructure and developments are placed in suitable locations away from rising sea levels and areas of frequent flooding, with several actions to address these risks already underway. A number of respondents called for greater unity between local and central governments on managing the main issues and ensuring that funding and opportunities for communities are evenly distributed. Taking on climate change will require greater collaboration and facilitation from the industry.



## The challenges of responding to climate change

Several themes emerged when asking respondents about the biggest challenges the industry faces in responding to climate change. The least surprising response was the flooding risk of low-lying areas and the managed retreat that communities will require to combat and adapt to this challenge. Funding relating to the managed retreat and measures to reduce the impact of sea level rise was also a common issue. There is some concern among respondents that infrastructure development is still occurring in vulnerable areas, and more needs to be done to ensure climate change is a key consideration in infrastructure investment and planning. Another concern is that climate change risks compound existing risks and there is still a need to address that cities are built in vulnerable areas, so increased storm events will result in increased damaging and frequency of flooding in flood-prone areas.

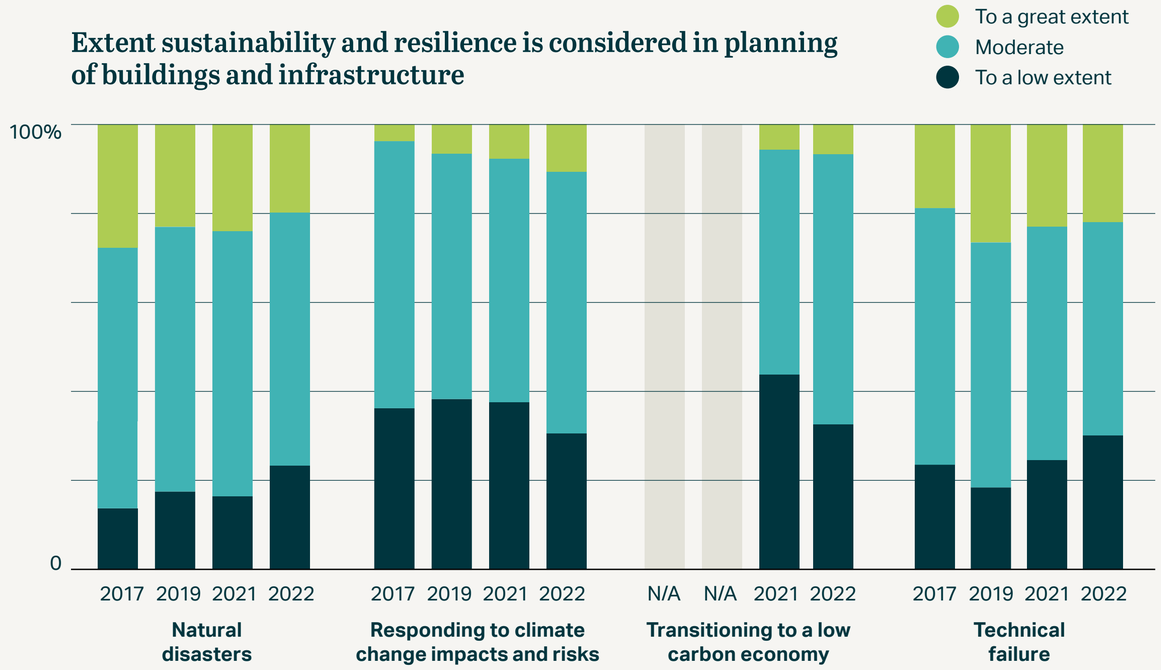
While many industries are working to fill the gap left by the government, respondents cited that there is a lack of knowledge within the construction sector on how to deliver on ambitions such as net-zero carbon and climate change mitigation. Consistent and straightforward direction from the government is seen as essential to addressing uncertainty and putting policy into action. While producing this report, the Minister of Climate Change has published the *National Adaptation Plan* under section 5ZT of the Climate Change Response Act 2002. This is New Zealand's first national adaptation plan and brings together the government's current efforts to help build our climate resilience in one place and sets out a proposed future work programme, indicating priorities for the next six years.

Now the legislation has been set, there is an expectation that the industry will move forward to address the issues. However, there is still a large knowledge gap since many initiatives and projects are new to the industry and will require international skills and local upskilling.

## Clarity and understanding needed to achieve broader sustainability outcomes

With the New Zealand government requiring the infrastructure industry to deliver broader cultural, economic, environmental and social outcomes through its procurement activities, we asked respondents to comment on likely impacts. There is consensus among respondents that in the short-term, education and upskilling of existing workers are key to generating informed support and change, with some commenting that they have already implemented these practices and are seeing better results in the longer term. This also shows the gulf between commitment and action, common among many organisations struggling to make high-level commitments a reality. There were negative responses about increased costs and time, especially in the planning stage. Some respondents believe they would only incur greater costs with no long-term benefit, making it harder to deliver projects. They did not see a need to consider broader outcomes; however, economic analyses have indicated that climate mitigation and adaptation now are cheaper than waiting.

### Extent sustainability and resilience is considered in planning of buildings and infrastructure



# Water

Through the Three Waters Reform, the government intends to address issues in the three waters networks of safety, reliability and affordability, compliance with environmental standards and building resilience to natural hazards and climate change. Currently, 67 local councils own and operate most of the drinking water, wastewater, and stormwater services across New Zealand. It is believed that greater investment in water services/ asset base will contribute to improved capabilities and efficiency through the formation of the water services entities.


There are many benefits associated with the reform of the water system across the country. We asked respondents which outcomes should be prioritised during the water reform — retention of key staff, focus on operations and maintenance of existing assets, open transparent communication of the transition plan to stakeholders, and clarifying funding and prioritising key activities for the new entities. It is evident that respondents believe a successful transition will require a combination of all factors rather than just one aspect. This reflects the reform's scale, complexity, and uncertainty on the steps to transition.

## Retention of key staff

The shortage of skilled water industry professionals has been highlighted as a significant problem for the water sector. The reality is that there will be a repositioning of people within the water industry during the reform process. Finding and developing staff to fill future water-related roles and engaging people will be crucial.

## Clarity of funding and prioritisation

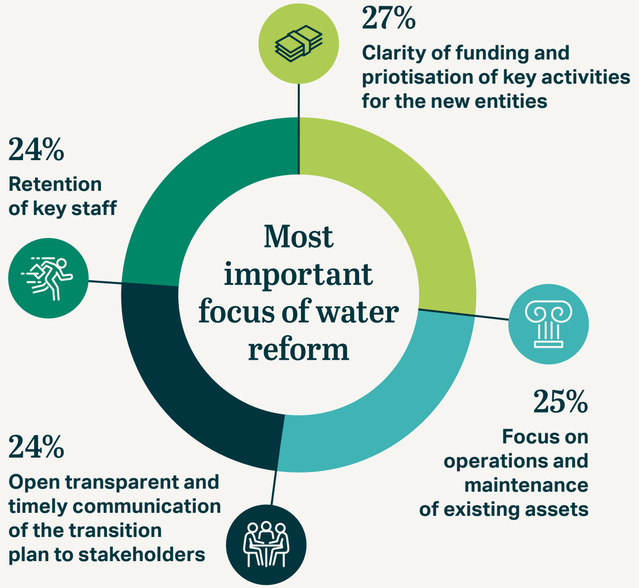
It's clear that water reform comes at a cost, and there is a strong emphasis on having clarity of a centralised funding model and prioritisation of future investment for the new water entities. Clear communication on the details of the reforms is required to enable change, and by developing better regulatory frameworks the implementation of programmes with key stakeholders working collaboratively — local councils, government agencies, regulators, customers and communities.

## Focus on operations and maintenance of existing assets

The response is mixed with many positive comments where respondents are optimistic about the future opportunities to address the decades of underinvestment in water infrastructure. However, there is apprehension about how the increased oversight of regulation will work in practice. Concerns are being expressed that the reform will result in increased bureaucracy not great efficiency.

## Benefits for organisations

Within the context of the water reform offering different benefits for organisations, we asked respondents to comment on how the benefits of the Three Water Reform could impact their business. Many respondents are concerned the benefits of water reform, for example, safety, quality and efficiency could come from increased oversight of regulation. This may have a negative impact and without consultation or collaboration, could lead to increased costs from the supply chain. This is mainly associated with the buildings sector, which is unlikely to be directly or significantly impacted by the reforms other than the resource pressure.



# Energy

New Zealand is committed to achieving net-zero emissions by 2050, with the Government targeting 100 percent renewable electricity generation by 2030. Beyond meeting these commitments, unlocking a low-emissions economy could provide much greater economic benefits for New Zealand.

The energy sector has a key role in decarbonising New Zealand's economy and transportation to address the threat of climate change. For the country to enable a clean energy future and meet our climate goals by 2050, we will need to increase our current capacity to generate electricity significantly. By harnessing the country's low-emission energy resources in conjunction with complementary technologies such as hydrogen, New Zealand could treble its annual electricity supply and grow renewable energy generation using wind, solar, hydro and geothermal resources beyond what is needed to meet the net-zero carbon emissions commitment.

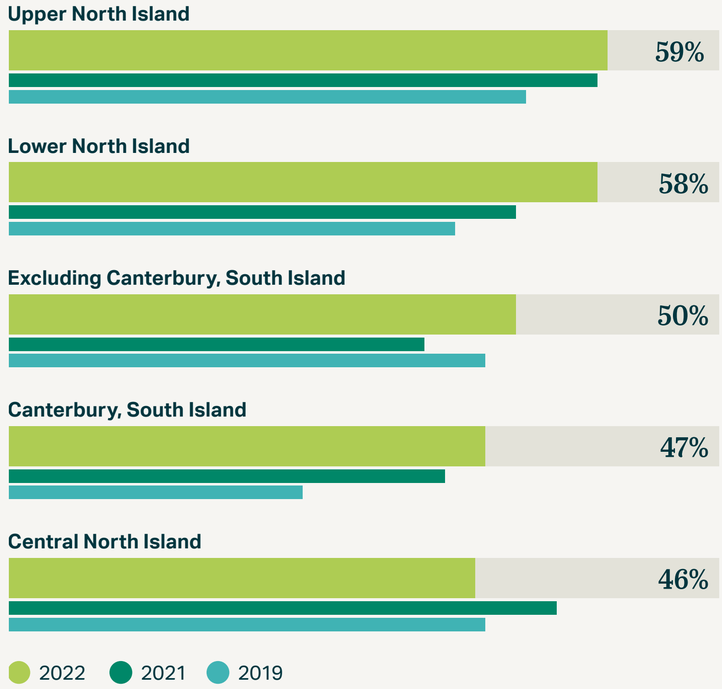
However, this transition will bring additional challenges in areas such as price, reliability, and resilience. Robust transmission infrastructure is crucial to enable new generation connections across the country, especially in regions without the resources to support the grid and to improve reliability and resilience in an era of increasing demand and climate disruption. Other factors include ensuring a robust and efficient consenting process enables the development of renewable energy generation, which provides positive national benefits.

Clearly, respondents have a positive outlook for clean energy investments and delivery in New Zealand. There is a notably increased optimism in Lower North Island and South Island, likely a reflection of the government's drive to decarbonise the industry together with offshore wind developers interested in building in these regions.

Wind and solar energy have become increasingly important in our electricity mix, but the growing share also poses challenges when the wind eases, and the sun is not shining. Energy storage options will therefore become more important to maintain reliability and capacity during periods of low wind and solar energy production. Pairing with new technology, existing infrastructure can be used more efficiently. This includes a number of technologies developed for the storage of energy and the management of demand, as well as distributed energy resources that are based closer to the sources of energy. The multi-billion-dollar pumped hydro scheme at Lake Onslow is one such storage option that will enable the country to switch entirely to cheaper renewable energy sources as it would be capable of storing at least 5 terawatt-hours of power, which equates to about an eighth of the country's total annual electricity usage.

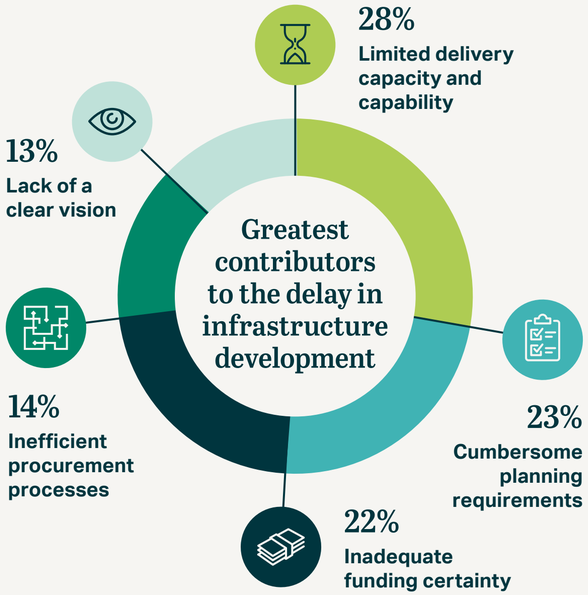
With the recent commitment from the government to provide a range of support to accelerate the transition to a low carbon economy through its *Emissions Reduction Plan*, energy companies are also more actively pursuing sustainability strategies and investments to support decarbonisation and the transformation of the energy system. There are, however, consenting and RMA challenges to overcome.

## Proportion of respondents expecting increased investment in energy by region



# Investment and funding

Increased investment in infrastructure is a positive step forward for the industry and solving many of New Zealand's challenges. However, by the time many projects are delivered, some may say they are solving yesterday's problems.




New Zealand's infrastructure and building construction sectors have remained resilient, despite major challenges associated with disrupted supply chains, high inflation and acute skills shortages. The public sector has pressed ahead with major infrastructure—related activities like City Rail Link, Transmission Gully, Auckland Light Rail, Additional Waitematā Harbour Connections and Dunedin's state-of-the-art hospital, to name a few.

## What's causing infrastructure development delays?

When considering the leading cause of New Zealand's infrastructure development delay, a number of factors have been attributed to this. Less than a third of respondents (28 percent) cited limited delivery capacity and capability, with cumbersome planning requirements and inadequate funding certainty as the next causes of delay. This is likely due to the nature of the infrastructure development process and the fact that there is no silver bullet for addressing these issues and concerns.

Respondents have ranked a lack of clear vision a lower concern than 2021 — suggesting that there is a continuation of the uncertainty of future projects being planned. Announcements like the Christchurch Te Kaha Stadium and the new mass transit service from the Auckland city centre to Māngere have resulted in lengthy, expensive business case processes even when political direction indicates a preferred solution. Inefficient procurement processes remain the least concern but still a risk, as this has been highlighted as a concern with respondents raising the need to introduce standardised procurement frameworks across government agencies.

## About AECOM

AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle — from planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, new energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivaled technical expertise and innovation, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a Fortune 500 firm and its Professional Services business had revenue of $13.3 billion in fiscal year 2021. See how we are delivering sustainable legacies for generations to come at aecom.com and @AECOM.

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