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LIMITS**

AECOM

SENTIMENT

**INFRASTRUCTURE AND BUILDINGS CONSTRUCTION SURVEY
NEW ZEALAND 2018**

IN THIS ISSUE

How important is having a clear vision as we build for future generations?

How is industry aligning itself with the shifting objectives of a new government?

Looking to the future: Changing people's perception to meet the demands of a growing population

Addressing procurement: Developing innovative models as a way forward

Building sustainable futures for our cities: Are we as resilient as we think we are?

FOREWORD

Welcome to the 2018 AECOM Infrastructure & Buildings Sentiment Report.

As a company, we are committed to building a better world. With the Infrastructure & Buildings Sentiment Survey in its ninth year, we are continuing our mission to gather valuable industry insights and to ensure we are well equipped to tackle the challenges and opportunities that arise as modern cities evolve and nations grow.

The results this year have indicated we have some big challenges ahead. As the infrastructure industry faces increasing pressure to meet the demands of a growing population, the strain of a skills shortage, resilience issues and ongoing policy changes all combine to slow progress.

Our survey highlights some clear themes that respondents see as being essential to driving growth and development. These include strong leadership, clarity

of purpose and a unified vision that is both bold and innovative. The need for greater clarity around projects and the development of more-efficient funding and procurement models are also seen as critical drivers for success in 2018.

Building resilient, multi-faceted cities that improve quality of life is no easy task. But ensuring we are creating the best possible legacy for future generations must be a priority as the industry steers its way through the settling in of a new government, a shift in infrastructure priorities and constant challenges.

Craig Davidson
Managing Director — New Zealand
AECOM



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THE REVIEW

New Zealand’s infrastructure market remains optimistic; however there has been a softening across the country since our survey a year ago. Key drivers of the decline in sentiment over the past 12 months are the market’s desire for improved confidence in the pipeline of projects coming to market and transparency around funding. The buildings market has seen a significant decline in positive outlook, most notably in Christchurch. Respondents echo sentiment from 2017, indicating that issues around the funding of projects are becoming an increasing concern.

Workload expectations in the country’s infrastructure market are up slightly on our previous survey with more than 70 percent of respondents expecting investment levels to remain steady or rise over the next three years. Expectations in Auckland have softened for the first time in four years, while Hamilton and Wellington have experienced a subtle decline in those with a positive outlook. Christchurch is continuing its downwards pattern, which is likely reflective of the major infrastructure projects due for completion in the next two years and an unclear outlook into further prospective projects.

Sentiment in the vertical market is experiencing a significant softening, with all regions reporting less confidence in the forward workload. Of note, Christchurch dropped by nearly 20 percentage points from our last survey with respondents now expecting an overall decrease in workload over the next year. There is a clear need to take a step back and redefine what success is going to look like for the city, with respondents expressing a need for increasingly strong leadership to drive progress and a cohesive vision to move forward.

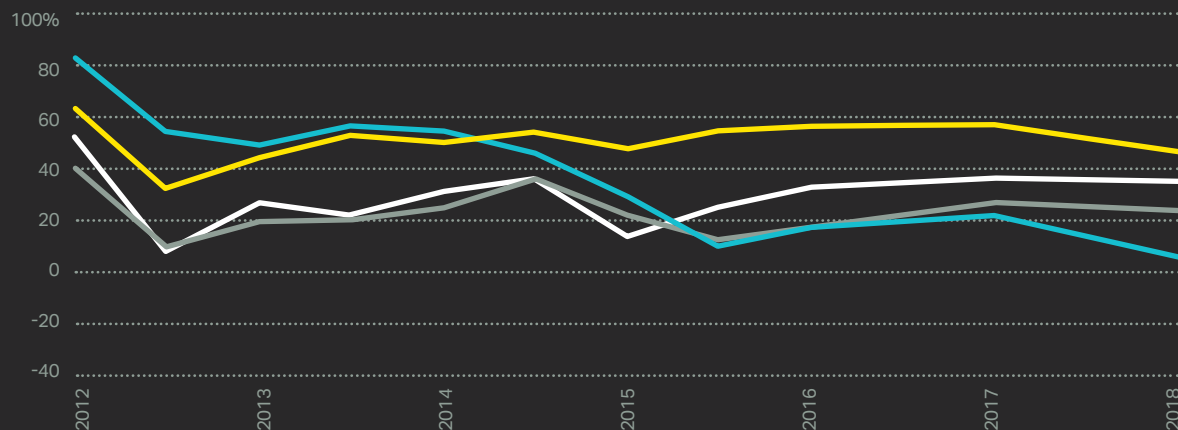
Over the last decade, New Zealand’s population has grown by more than half a million people, half of which was during the last three years. With this rising population, the country is facing increasing demand in both the horizontal and vertical sectors. This demand needs to translate into confidence from the industry to invest in the resources required in the short to medium term. At the same time, it is imperative that a resilient long-term plan is implemented based on a unified vision and driven by strong leadership.

WORKLOAD EXPECTATIONS TREND

AUCKLAND HAMILTON WELLINGTON CHRISTCHURCH

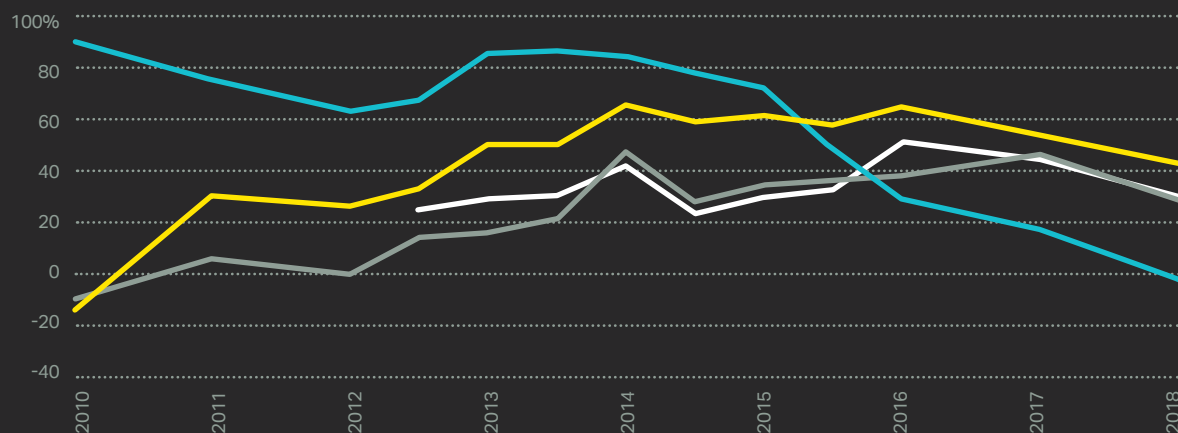
Infrastructure Market

11th Industry Survey



Buildings Market

17th Industry Survey



Note: Industry sentiment in the Buildings Market has been surveyed since 2010, while the Infrastructure Market and the Hamilton region have been tracked since 2012. This chart shows the trend in net workload expectations.

KEY INDICATORS

WORKLOAD AND INVESTMENT EXPECTATIONS

Buildings Market Investment Outlook Strengthens



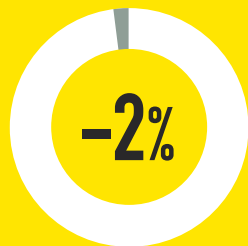
46 percent expect more investment in the buildings sector nationwide, compared to 32 percent previously.

Increasing Optimism in Rail Investment



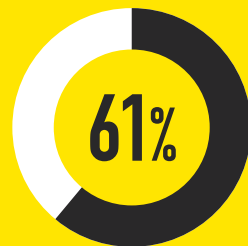
50 percent expect to see a lift in investment in Rail, up from 33 percent previously.

Christchurch Buildings Market Continues to Moderate



Two percent of respondents expect a decreased level of investment in the Christchurch buildings market over the next twelve months. This is down from 17 percent expecting increased investment 12 months ago.

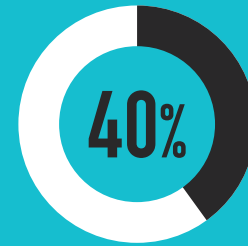
Optimistic Outlook for Infrastructure Market Workload



61 percent expect workload in the infrastructure market to remain stable or increase.

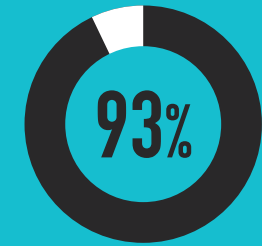
INDUSTRY SPOTLIGHT

Skills and Materials Shortages the Critical Industry Issue



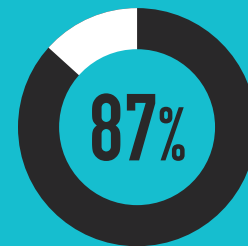
40 percent identified Skills and Materials Shortages as the significant industry challenge.

Majority See Value in Having a City Vision



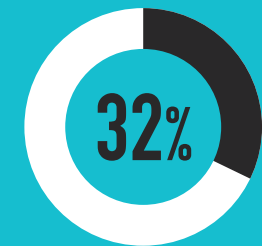
93 percent of respondents consider it of high importance to have a clearly defined City Vision.

Whole-of-life Costs Should be Considered Going Forward



87 percent of respondents believe that Whole-of-life Costs in capital investment decisions should be considered to a 'moderate', 'some' or a 'high extent'.

Big Data and Technology a Driver of Change within the Next 2-4 Years



32 percent expect Big Data and Technology to be a driver of change in business over the next 2-4 years.

INFRASTRUCTURE MARKET

EXPENDITURE AND WORKLOAD EXPECTATION

Sentiment in the infrastructure market is overwhelmingly positive. There is a unified understanding among respondents that infrastructure plays a pivotal role in the economic and societal development of communities and in shaping New Zealand cities for the future.

In our latest survey, optimism around anticipated expenditure has continued to improve, with the majority of respondents expecting spending and workload in the sector to remain steady or increase over the next three years. The growing need to develop new infrastructure and improve existing infrastructure directly correlates with the pressures of a growing population and migration from the big cities to wider New Zealand. This has been identified as a key driver for expected expenditure in the coming years and the source of continued optimism.

With an evolving political landscape and a shift in objectives, respondents have indicated there is a degree of uncertainty in the market and expressed a need for greater transparency around upcoming projects, as well as a need for more-efficient procurement models to bring ambitious projects to fruition. This sentiment is reflected in the delivery arm, where we have seen an increase in the number of respondents expecting less work. Respondents' comments suggest the ambiguity around the infrastructure pipeline is also affecting the levels of investment in the resources necessary to deliver projects. Overall, sentiment from the infrastructure market highlights a need for comprehensive solutions to identify and manage risks.

After a period of stability, Auckland has demonstrated a significant decrease in workload expectations, likely driven by the government placing large investment decisions around roading on hold. Since this survey, the industry has received some welcome clarity with

the government confirming the Mill Road and Penlink projects will progress. Sentiment in Hamilton and Wellington remains relatively stable, with only a small drop in those expecting an increase in workload since our survey a year ago. This is in stark contrast to Christchurch, however, where just six percent of respondents remain optimistic. With large infrastructure projects due to be completed in the next two years, there is little clarity for the industry about projects in the horizontal sector.

Collaborative contracts are becoming increasingly important when it comes to combining the strengths of multiple client organisations with the supply chain to plan and deliver projects.

Successful collaborative contracts are founded on trust, good governance and leadership. Both of these take time to establish and require significant focus. They can result in better risk allocation and avoid the adversarial situations that are currently being seen on more traditional forms of contract.



Ben Williams
Group Director — Civil Infrastructure
AECOM

The increase in expected spend outweighs expected delivery. High-performing infrastructure is a necessity across the board, but industry capability and resources to build complex infrastructure models will struggle to keep up with the rate of rapid population growth. The demand for robust and also sustainable solutions in the energy sector, driven from central government, is providing some optimism in expected workload.

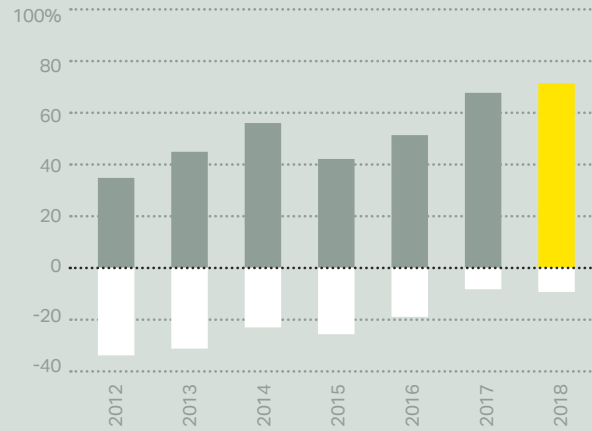


Anant Prakash
Group Director — Energy
AECOM

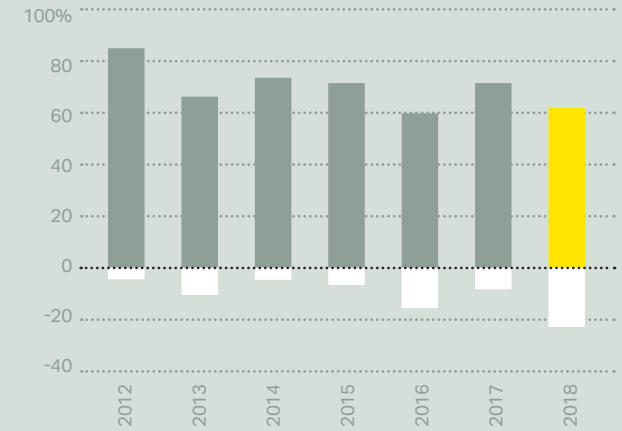


INFRASTRUCTURE OUTLOOK

Investment Market Views



Delivery Market Views



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

The growing need to develop new infrastructure and improve existing infrastructure directly correlates with the pressures of a growing population.

WORKLOAD BY REGION AND SECTOR

With the new government in place, there have been significant shifts in objectives around development. In our latest survey there, is an alignment between respondents' work expectations and the government's objectives; sentiment is indicative of the anticipation around announcements. This is most clearly seen with the dramatic increase on a national scale around workload expectations in the Rail sector. At the same time, respondents are naturally less positive about the forward outlook in Roading projects.

With the exception of Road, optimism around work expectations in Auckland remains buoyant, with a notable jump in optimism around Rail. This sentiment is indicative of the major works being undertaken as part of the City Rail Link project in the inner city and the promise of further large-scale rail projects in the near future. It is likely that pessimism around Road expectations could soften in the coming months off the back of announcements and projects being confirmed.

The Waikato and Bay of Plenty regions also share a similar sentiment to Auckland, with the exception of Land Development and Telecommunications, where optimism has softened. Despite recent announcements of funding in these sectors, this could be a response to a cooling Auckland market. Similarly, the decrease in positivity around Telecommunications could be reflective of the broadband roll out being due for completion within the next three years.

Workload expectations continue to soften in Canterbury, particularly in both the Road and Rail sectors. Given large roading infrastructure projects are due for completion within the next two years and the pipeline going forward is unclear, this isn't an entirely surprising result. As in 2017, the focus is likely to shift to the centre of town. Christchurch is facing uncertainty; with progress slowing, the industry will be looking for a clear plan of what is to come from both local and central leadership.

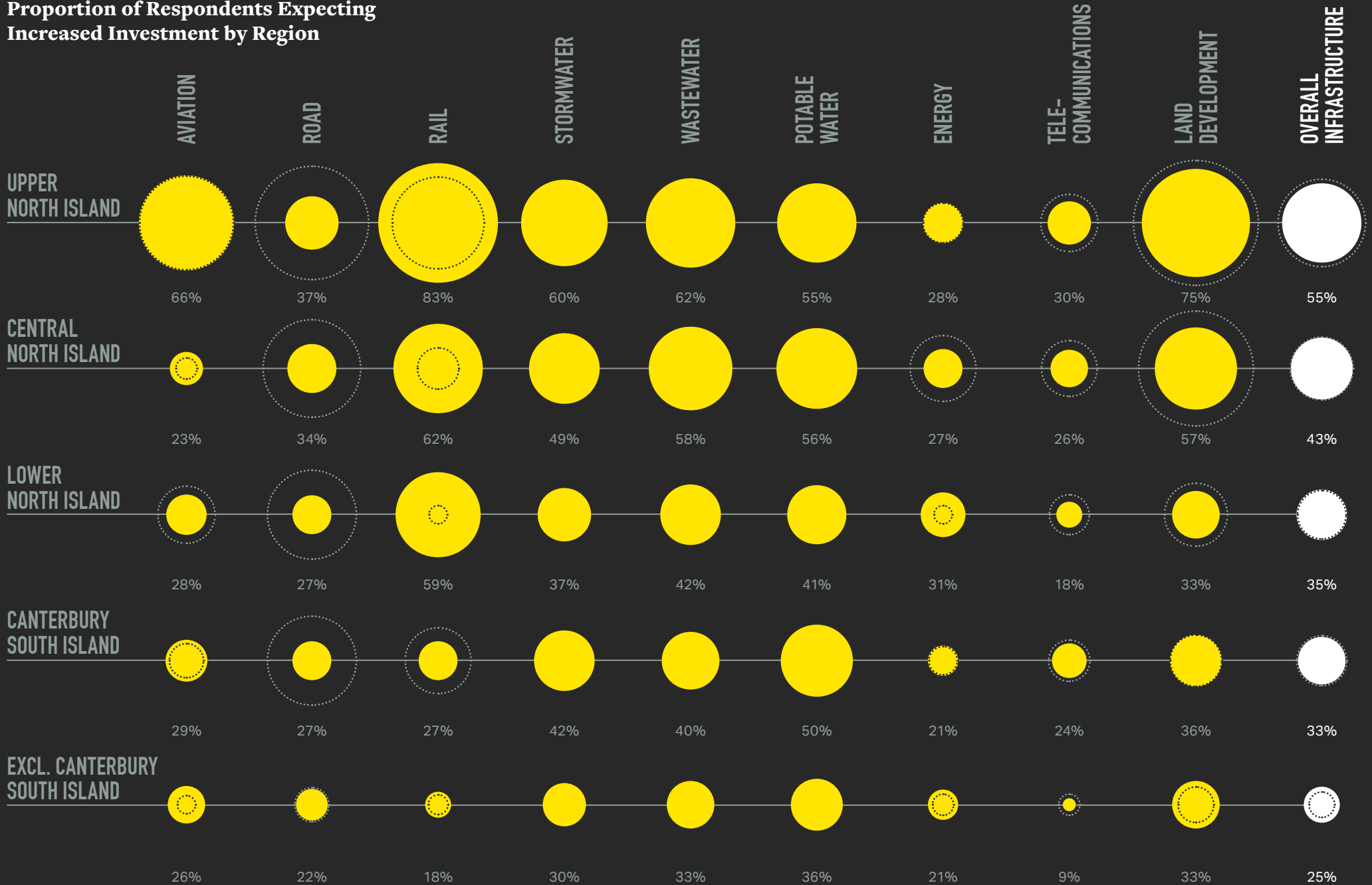
A lot of the large projects outside of Auckland have also been halted or slowed. An example of this is 'Get Welly Moving', which is currently about 12 months behind schedule. Respondents recognise that a change in leadership brings a shifting of priorities and re-evaluation of current and prospective projects.

In our latest survey, we see optimism reflecting the strong investment and renewed focus around transport, particularly in the Rail sector. Historically, results are reflective of specific projects, and with more-defined plans emerging, this positive outlook may strengthen further.

"To achieve objectives, we need citizen-focused, integrated, and timely delivery of affordable infrastructure that is not impeded by unaffordable re-litigation through constant analysis of solutions and associated redesign."

A change in leadership brings a shifting of priorities and re-evaluation of current and prospective projects. In 2018, we see strong investment and renewed focus around transport in particular — the increase of optimism in Rail is reflective of this.

Proportion of Respondents Expecting Increased Investment by Region



Note: Bubbles indicate the market optimism for growth over the next year. Dotted lines indicate the May 2017 results. Stormwater, Wastewater and Potable Water were not assessed in the last survey.

BUILDINGS MARKET

EXPENDITURE AND WORKLOAD EXPECTATION

Investment expectations in the buildings market have been inconsistent from year to year; the high optimism of 2016 gave way to a sharp fall in 2017. Twelve months on and optimism around anticipated expenditure is back on the rise with respondents recognising there are going to be new opportunities for growth within the next three years. Plans to tackle housing and land development are gaining traction and the government's ambitions around healthcare and education are likely contributing to the significant confidence in the expenditure arm.

While optimism is improving on the investment arm, we are seeing a steady decline in optimism for workload expectations going forward. After a peak in 2014, where 85 percent of respondents indicated they were expecting growth, in 2018 less than 40 percent of respondents have the same positive outlook. Interestingly, we are seeing improved alignment between the investment and delivery arms which could have a positive effect on the industry's ability to deliver projects.

Issues around funding continue to be a big concern for the industry. Respondents highlight a complex range of new challenges facing the delivery arm of the building industry, including the government maintaining a tight fiscal envelope, growing financial pressures on local authorities and increasing costs impacting the viability of projects. The need to improve the procurement process and develop new procurement efficiencies is also highlighted as a priority in respondents' comments, giving some clarity to this disconnect between investment optimism and delivery pessimism. For respondents, there is a lack of clarity of major projects coming to market, as well as sources of funding. The

effect of this is a lack of confidence from businesses to invest in skilled workers. At the same time, respondents from the investment arm point to the growing need for more resources and skills to meet demand. This resource gap is contributing to the uncertainty felt in the market around its ability to deliver projects efficiently and to a high standard. With the growing need for investment, the industry must consider how it replenishes the skilled resources required to combat demand without compromising the integrity of the legacy being built for future generations.

"The NZ construction market is a limited resource and has limited capability to deliver major (\$200 million plus) projects, this extends from the tier-one contractors throughout the supply chain."

There is a significant body of vertical infrastructure to deliver in New Zealand over the next few years. While we wait for clarity around factors like how and when these projects will be procured, confidence and optimism are misaligning. Until there is more clarity around these issues, the industry endeavours to press on in the short-term and deliver to the demands in the vertical sector. We are hopeful that announcements made through the remainder of the calendar year will provide an opportunity to plan adequately for the long-term and realign confidence and optimism in the industry.

Resource and skills shortages are also of concern; it is absolutely essential we have the best resources to design and build projects, or we risk damaging our industry and our society with a substandard legacy. The draw of a boom in parts of Australia will be difficult to combat. In many areas, we are seeing once-in-a-generation levels of building, and we need to find the balance of fiscal restraint around funding CAPEX with the demands for socially responsible OPEX on buildings.

New ideas that align with the demands of the modern visitor to New Zealand are also coming into focus. A fresh and innovative approach will be essential in supporting continual growth in the tourism industry. We need to think differently and capitalise on our unique landscape, people and their sense of adventure. Perhaps it is time to take some risks.

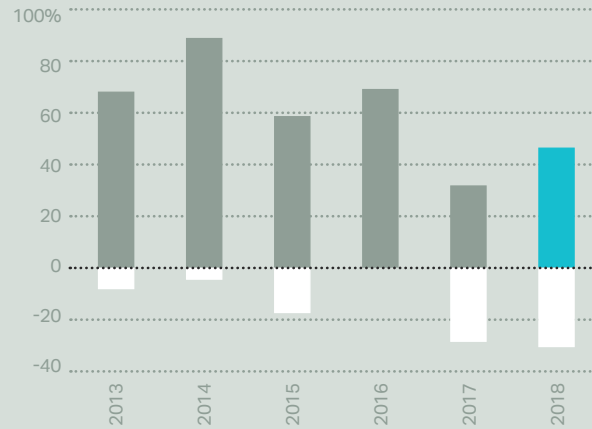


Graeme Fletcher
Group Director — Buildings + Places
AECOM

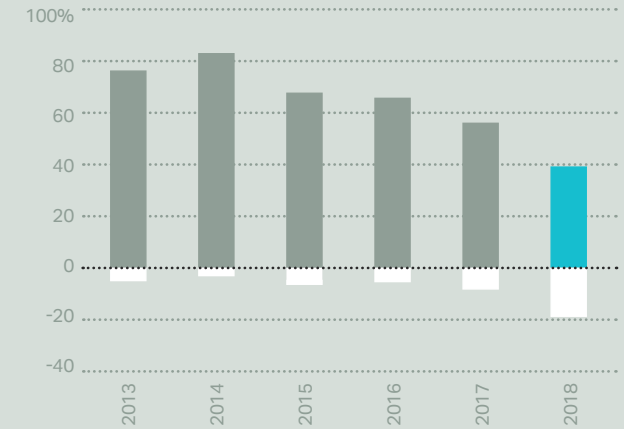


BUILDINGS OUTLOOK

Investment Market Views



Delivery Market Views



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

Plans to tackle housing and land development are gaining traction and the government's ambitions around healthcare and education are likely contributing to the significant confidence in the expenditure arm.

WORKLOAD BY REGION AND SECTOR

Sentiment has moderated within the buildings sector across all regions and the majority of sectors. The exception to the rule is a renewed sense of optimism in Healthcare, notably in the Auckland and Hamilton. This aligns with government objectives to develop new facilities and improve existing ones.

While it remains positive, the Residential sector has seen a softening in expected workload. Despite the country's growing population, the government's KiwiBuild initiative and steadily increasing demand in this sector, expectations have declined with a drop of nearly 14 percentage points since our survey last year. A number of respondents attribute the limited resources and industry capability in conjunction with a lack of transparency around funding. As with the infrastructure market, the cooling of the housing market in Auckland has impacted expectations within the building sector.

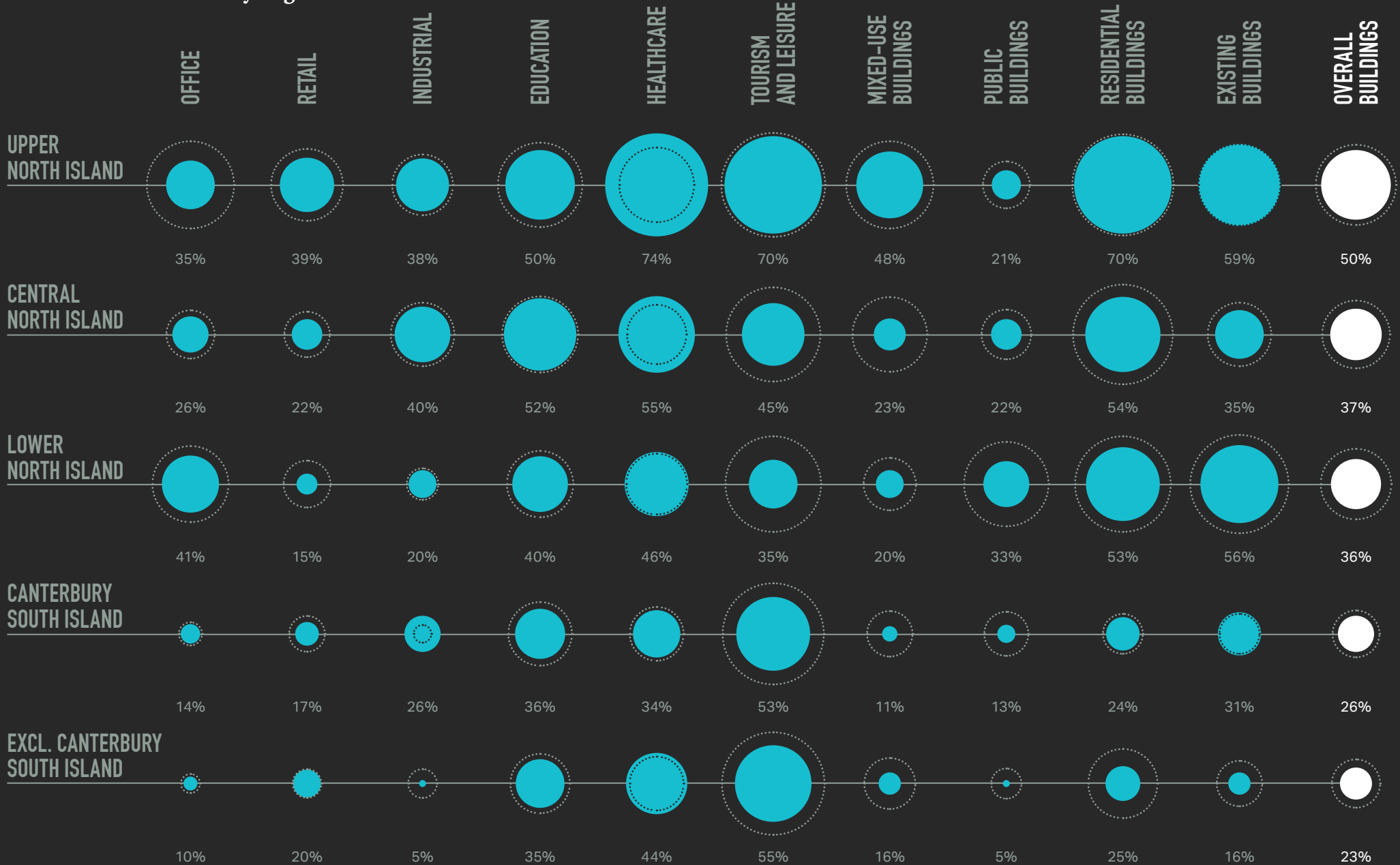
Respondents have indicated a sizeable decline in optimism in the Tourism sector. In our survey last year, 45 percent of respondents were anticipating growth in workload over the next three years, compared to 23 percent this year. In 2017, 3.7 million tourists visited New Zealand, an increase of seven percent since the previous year. While it's clear that New Zealand's appeal continues to broaden, progress in some major projects within the sector has slowed and in some cases stopped altogether. The lag in workload expectations could point to shifting priorities at both local and central government level.

Expected workload in Public and Mixed-use Buildings has also decreased. Respondents agree there is demand and that they play an important role in creating both successful communities and successful cities. The challenge, however, is who should fund these projects that sit within the public realm or make a firm contribution towards it.

At a regional level, there is a softening of expectations across the board. The biggest decline is in Wellington, which last survey appeared to be experiencing a degree of optimism related to the impact of the seismic activity and residential accommodation shortage. In 2017, more than half of all respondents felt optimistic about future workload, while in our latest survey this has dropped by more than 15 percentage points to 36 percent.

The increase of optimism in Healthcare aligns with government objectives to invest strongly in this sector. The significant decline in optimism around expected workload elsewhere is reflective of some uncertainty in the market around the pipeline of projects and delays in government announcements.

Proportion of Respondents Expecting Increased Investment by Region



Note: Bubbles indicate the market optimism for growth over the next year. Dotted lines indicate the May 2017 results.





INDUSTRY SPOTLIGHT

NATIONWIDE INDUSTRY CHALLENGES

Though moderating significantly over the past two years, the Shortage of Skills and Materials maintains its position as the largest perceived risk to the industry in 2018 with 40 percent of respondents believing it to be the most critical concern. The impact of losing major contractors is reverberating down the supply chain, as the industry strains to deliver large-scale projects and meet the demands of our growing cities. The impact of this is already being felt by the industry. Commentators are voicing concerns about the integrity and standard of existing projects and the legacy we are leaving for generations further down the track.

“The capacity and capability of the construction sector continues to be a challenge and the ability to strategically engage with and manage supply chains — highlighted by recent shortcomings.”

Perceived risk around Governance and Regulations has risen by 16 percent, a possible reaction from industry where progress has slowed in response to the change in government. Respondents acknowledge that new leadership brings opportunities for change and growth, while at the same time bringing a period of relative uncertainty, especially in the first term. Announcements around funding and new projects, implementation of new policies, and the development of new procurement models provide new challenges, and the desired certainty, allowing the market to adapt.

BUDGET 2018 FOCUS:



TRANSPORT



HEALTH



EDUCATION



HOUSING

“The industry has paused to work with the change in government direction and has been met with mixed priorities and confusion.”

The industry is displaying reduced optimism as it adapts to the new government’s priorities and a directional shift of public investment. This reduced optimism is reflective of short-termism in the sector, and perception that a centre-left government is not as receptive to the needs of the business community. This perception is somewhat misaligned, as is evident with the Budget 2018 announcement and clarity around major investments in transport, health, education and housing spending compared with previous years.

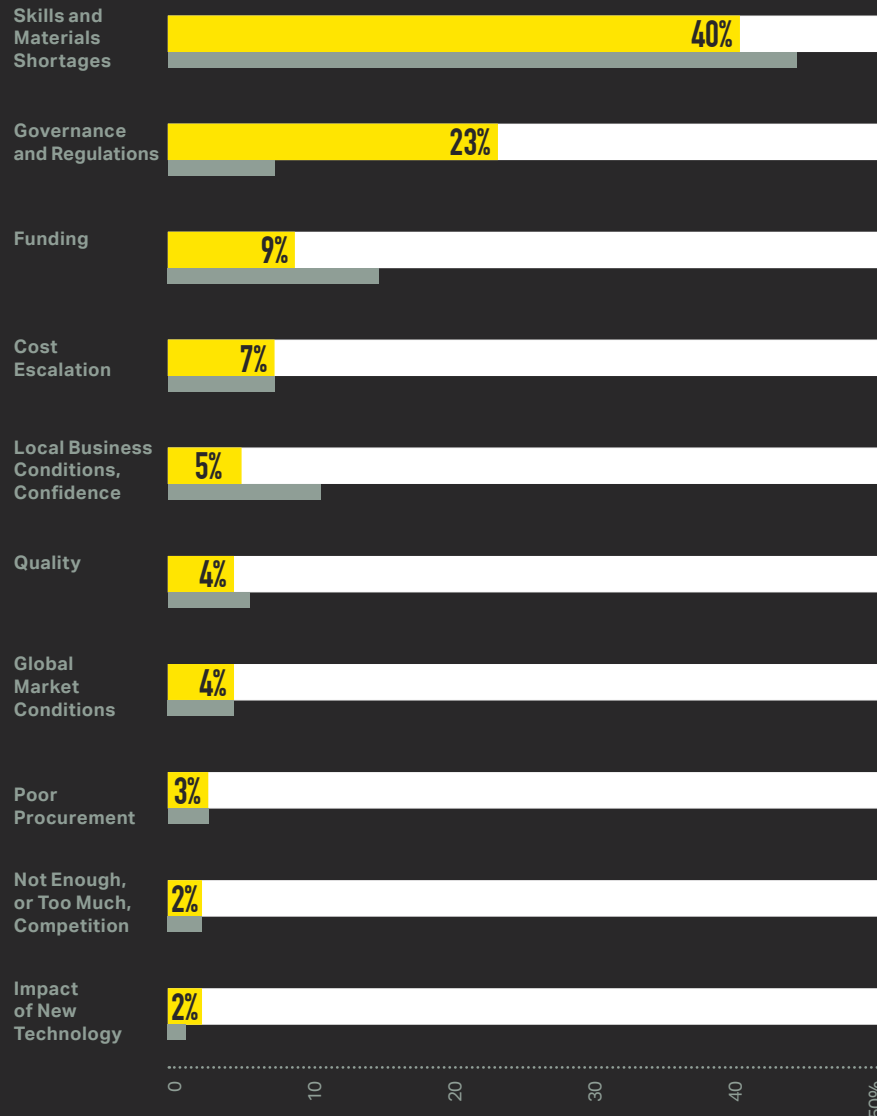
The construction sector benefits from increased infrastructure investment under centre-left government and we expect that reduced optimism will quickly transition into concern over industry capacity and capability to deliver on the government investment priorities.



Graeme Sharman
Government and External Affairs Manager —
New Zealand
AECOM

Top Industry Challenges

2018 2017



The industry is currently navigating its way through the challenges that come with periods of change. Drawing on adaptability and multi-skilling are proving to be critical to the process of aligning the industry with the changing paths of political direction and development.

The role of strategic procurement, carefully-considered risk sharing, and allocation are becoming increasingly important. As ever, innovation will be born of necessity — for both public and private clients.



Ben Hardy
Group Director — Construction Services
AECOM

The availability and analysis of digital information and data underpin much of the decision making in infrastructure, and as a result there are some large opportunities emerging for efficiency in processes across the industry. One of these opportunities is the optimisation and operation of infrastructure assets and networks to get more out of what we already have and to optimise our capital spend. There is a need for New Zealand, particularly in the public-sector, to adopt smart technology at a faster rate and to leverage the gains that can be had from such technology. Embedding digital options into the lifecycle of buildings and infrastructure design will also pave the way for future technology to be implemented as it is developed.



Chris Ballantyne
Director — Infrastructure Advisory
AECOM



BIG DATA AND SMART TECHNOLOGY

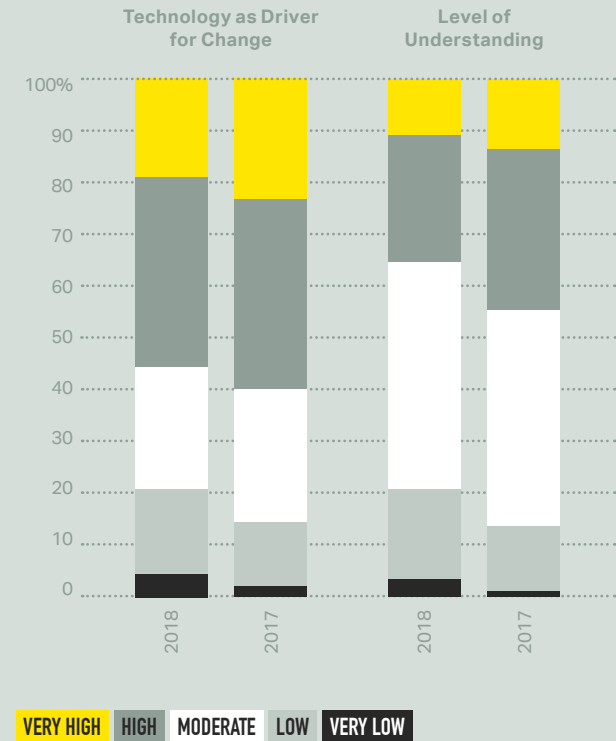
With progress on projects slowing nationwide and the industry facing challenges such as a shortage of skills and workers, limitations around funding, and the demands of a growing population, how we manage process and identify efficiencies is becoming increasingly important from both an economic and long-term value perspective. In our latest survey, frustration expressed by respondents around progress has carried through, and while there are many methods and processes that have been identified as a priority to explore as solutions going forward, technology is lagging behind as a consideration.

The general consensus from respondents is that Big Data and Smart Technology are not critical drivers for change. This is in stark contrast to our global counterparts, who are embracing

technological advances from the very early stages of a project right through to delivery. The potential benefit of technological contributions to the effective and efficient development of modern cities has been identified, and harnessed, where possible, on a global scale.

Respondents recognise that adapting new technology into their operations and introducing it to clients as a service or product is going to be a challenge that will take some time. More than half of respondents have a moderate to very low understanding of the benefits of Big Data and Smart Technology, an increase from the previous year's survey. In contrast, the majority of respondents indicate the expected timeframe that business models will adapt to and drive technological efficiencies is 2-4 years, a sign of an industry embracing what is truly a global trend.

Big Data and Smart Technology Considered as Drivers for Change



“We are investing heavily in understanding big data and how we can get the best benefit from it for our clients and ourselves.”

PROCUREMENT

Efficient procurement processes are going to be of the utmost importance when it comes to driving growth and ensuring the successful and timely delivery of major projects in New Zealand. In our 2018 survey, respondents indicate the importance of investigating opportunities for developing new and improved procurement models to lift performance. The need for both central and local governments to procure large infrastructure and building projects effectively and with alternative funding models is also coming into focus.

Respondents continue to see Partnership / Alliance as holding the most value as a form of procurement, primarily because of the method's ability to allocate risk fairly across the parties involved and its natural tendency towards openness and transparency. Going forward, Alliances are likely to become an increasingly common method to procure and deliver large-scale projects, due to their ability to utilise the best offering from individual providers.

There has been a significant reduction in perception around value for money provided by Open Tendering, with results dropping to their lowest point in four years. Respondents recognise Open Tendering, resulting in simply getting the cheapest tender price, isn't a viable or efficient method as it leaves a long-term legacy of variations, quality issues and disappointment.

Similarly, and particularly in the building sector, there is an urgent need to explore the Whole-of-life Cost approach to date and how it impacts and creates efficiencies around the performance of delivery. It is generally agreed amongst respondents that lack of transparency and understanding around Whole-of-Life

Costs is leading to long-term operations and maintenance inefficiencies which defeat any cost savings achieved during construction.

Respondents agree that there should be more emphasis on cost and value in decision-making in the early stages of projects. Some entities are moving towards this approach through asset management planning requirements, but many organisations remain focussed on the up-front capital costs.

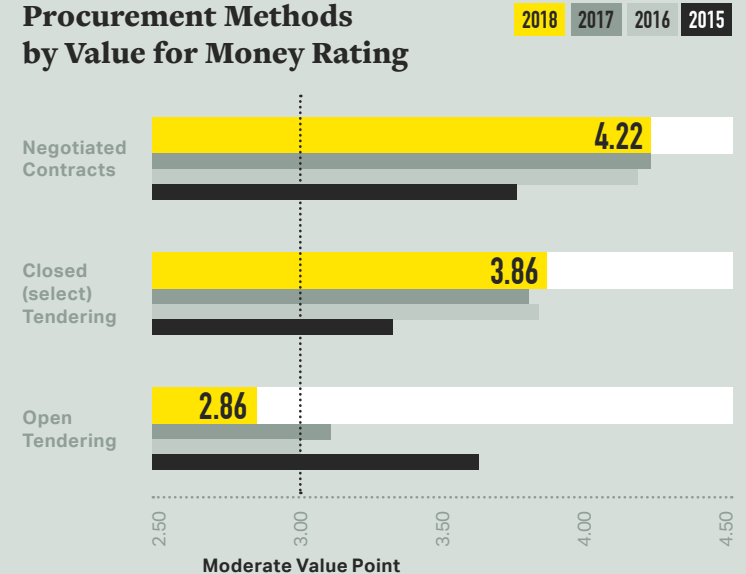
"The principle is well developed, yet short-term initial cost decisions still result in higher cost over the asset lifecycle. On the other hand, information from designers and suppliers is not transparent to the client who sometimes ends up bearing lifecycle costs they did not know about when signing off designs."

"There needs to be a step change across the industry in this space, WOL is a key aspect in delivering value for money and at present it is rarely considered appropriately either during procurement or design of built assets."

"Project Managers / Design Managers are still entirely focused on initial capital cost and do not typically want to consider a "whole-of-life" cost analysis."

The consideration of Public Private Partnership (PPP) models has also been highlighted by respondents. The PPP approach, which bundles capital investment and asset management, is focused on outcomes; however, they do come with risks, especially with commercial funding and the delivery of long-life assets.

Procurement Methods by Value for Money Rating

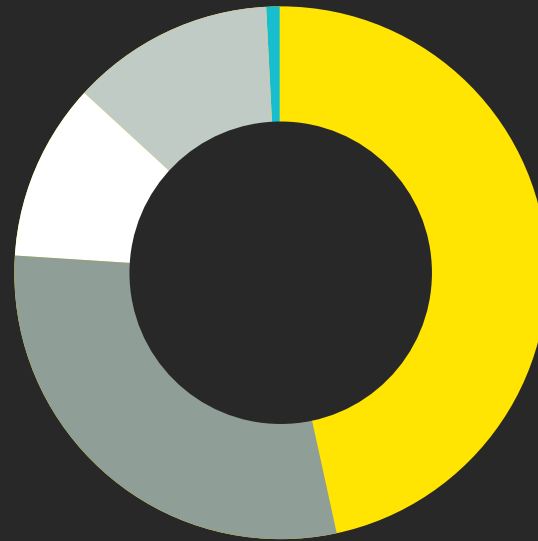


These values are a weighted average score out of 5.00 with 1.00 providing the 'Least Value' and 5.00 providing the 'Most Value.'

"The government's announcement that this year's Budget will allocate \$42 billion to capital investment over five years will provide a welcome boost for regional and urban development, but speed in establishing a specialised strategic procurement agency is now a priority to ensure projects are sequenced and delivered at best value."

Stephen Selwood
CEO of Infrastructure New Zealand

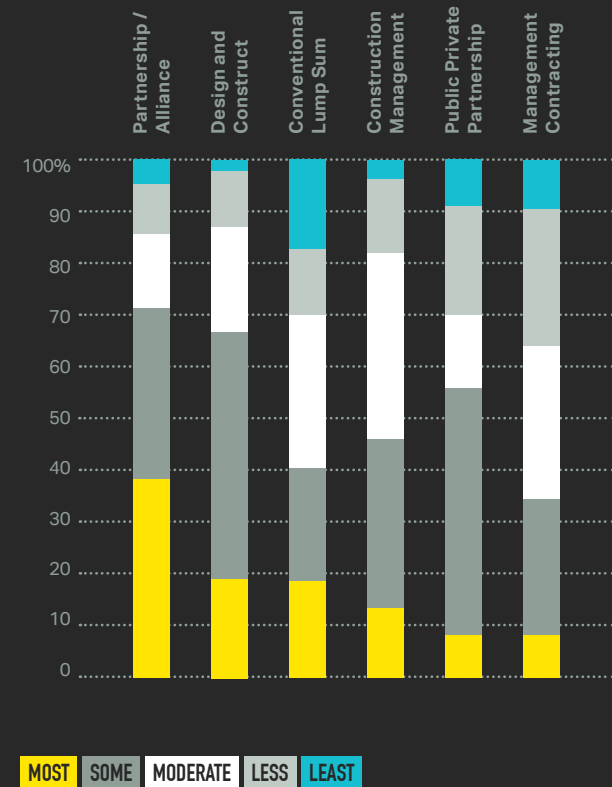
Consideration of Whole-of-life Costs in Capital Investment Decisions



46.5% 29.5% 10.8% 12.4% 0.8%

GREAT EXTENT SOME MODERATE LOW NOT AT ALL

Value for Money



MOST SOME MODERATE LESS LEAST

Respondents continue to see Partnership / Alliance as holding the most value as a form of procurement, primarily because of the method's ability to allocate risk fairly across the parties involved and its natural tendency towards openness and transparency.

CITIES SPOTLIGHT

FUTURE GAZING

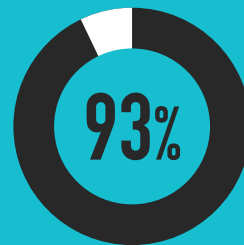
Cities are much more complex than their constituent parts of roads and water, bricks and mortar; cities must be robust, resilient, receptive to their inhabitants' needs and sensitive to the environmental settings in which they are built. The industry is united on a global level in its view that infrastructure will play a critical role in shaping the communities and societal frameworks of the future. On a local level, respondents remain strong in their view that clarity of vision and strong leadership are going to be crucial to ensuring that infrastructure will have the ability to withstand the changes New Zealand is facing now and in the years to come.

New Zealand has become increasingly reactive, responding to crises rather than driving the innovation that is required for the future. A reactive approach to infrastructure must make us question the sort of legacy that is being left for future generations. If we look to the past and to what characterised the governments who produced some of New Zealand's most crucial pieces of infrastructure, such as hydro schemes, the Auckland Harbour Bridge or the country's rail network, we see some common traits: foresight; vision for the future; and a rigid determination to bring that vision to life.

Sentiment has remained static over the past 12 months, as we see the same overwhelming number of respondents believing a clearly defined City Vision should be a high priority to move forward and successfully cater for and

encourage growth. The challenge in 2018? As it stands, the political landscape in New Zealand doesn't lend itself to striving for an ambitious and fearless vision, but respondents express the need to be bold to ensure a clearly defined plan is in place for the future. This would be a first step to moving away from what respondents see as a reactive and undefined path the industry is currently treading. A well-articulated vision will drive growth, and strong leadership will ensure the cohesive, multi-layered approach required to bring this vision to life.

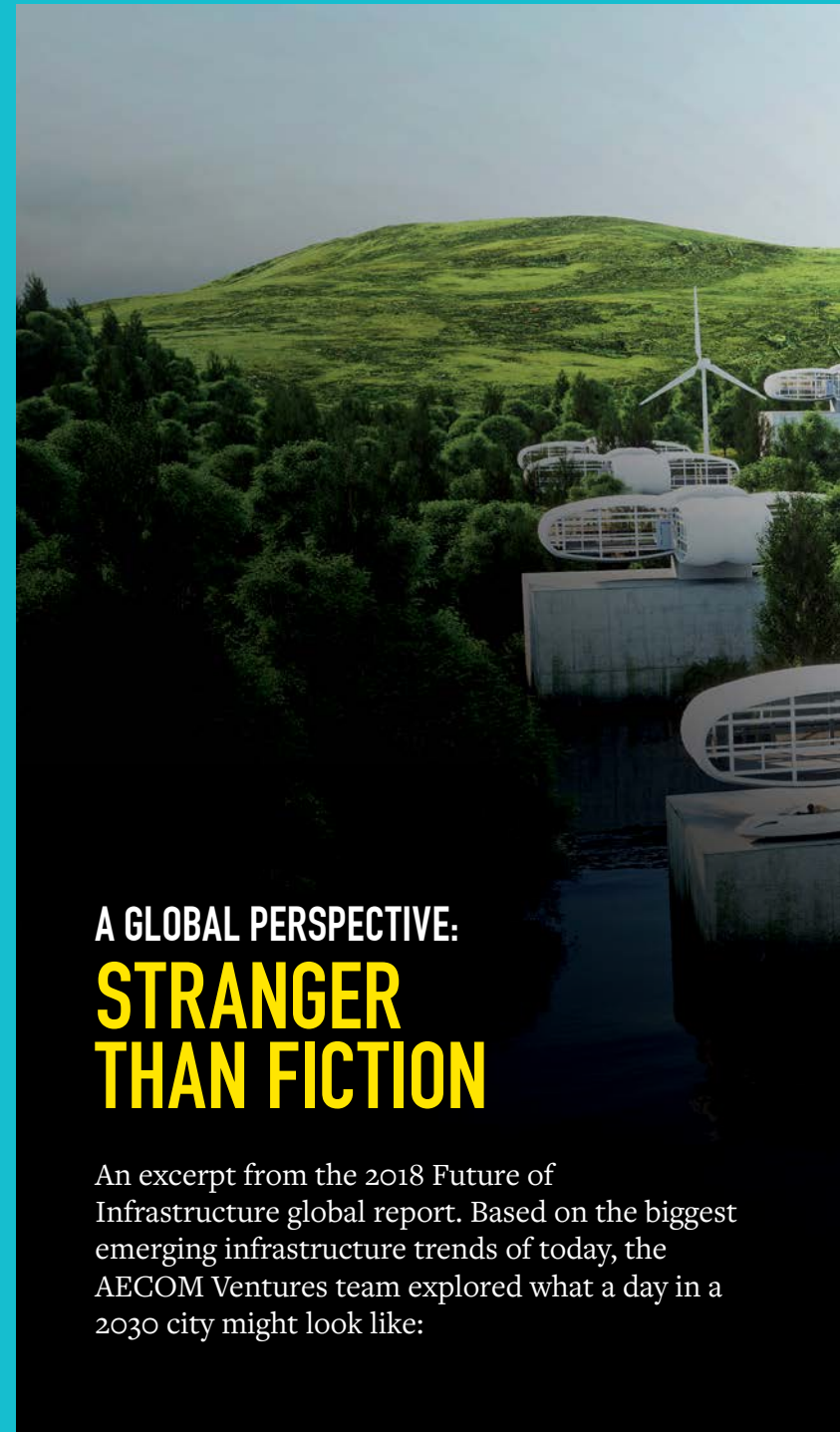
"Leadership is essential; the ability to lead the achievement of a vision in a cohesive manner. As important is community engagement to the ownership of the vision, after all, who is the city if it isn't the community? Master planning also provides confidence that the physical aspects of the vision are articulated, achievable and sensible."



93 percent of respondents consider it of a high importance to have a clearly defined City Vision.

A GLOBAL PERSPECTIVE: STRANGER THAN FICTION

An excerpt from the 2018 Future of Infrastructure global report. Based on the biggest emerging infrastructure trends of today, the AECOM Ventures team explored what a day in a 2030 city might look like:





“**...Flexible homes, healthier lives:** Currently, your home is located in a central community hub, and every day the use of the space around you is evolving. More people are relying on walking, biking, public transportation, and mobility-as-a-service (MaaS) providers — who operate fleets of autonomous electric vehicles — as faster, safer and cheaper alternatives to owning their own car. As a result, chunks of urban and curb side real estate once filled with vehicles are reclaimed for the community.

In fact, your new home is located in a former multi-story parking lot, now repurposed in

record time using 3D printing technologies to provide access to sustainable, affordable homes for the city’s growing population, as well as a public gym and other local facilities.

Putting your best foot forward: You set off to your nearest mobility hub — this includes the options to take public transportation, or share a ride via a MaaS journey — your transit agency app alerts you that your usual multi-modal journey has changed, due to an all-day concert in the park. So, you acknowledge and confirm your travel preferences, and the app advises you of your new journey, which now includes

a shared, electric, connected and autonomous vehicle (CAV). Transport systems across the world are now using artificial intelligence (AI) and digital sensors to help analyse the millions of pieces of data being generated relating to demand, delays and constraint issues across their networks and respond with increased capacity, timetable changes and updates to passengers in real time...”

[Read more from the Future of Infrastructure global report at \[infrastudy.com\]\(https://www.infrastudy.com\)](https://www.infrastudy.com/reports/future-of-infrastructure-global-report)

CONNECTED CITIES

To meet the demands of a growing population and ensure we are future-proofing New Zealand for generations to come, there is a pressing need to define a clear and unique vision for our cities. Being bold enough to challenge the status quo with strong leadership and using a collaborative, all-inclusive planning approach will help New Zealand create archetypal connected cities.

“Clear vision for a city is extremely important and requires good leadership, excellent communication, ongoing community engagement and proper, robust, evidence-based urban structure planning to underpin objectives.”

We are seeing both dense and expansive development emerge to align with the needs of a growing population. Respondents’ views are consistent with those of 12 months ago, that User-friendly Public Transport and a High-quality Public Realm remain priorities on the list of these needs. If we look to leading global examples we see all the layers and complexities of modern day cities — societal, environmental and economic — working succinctly.

“Responsible leadership includes articulating a vision for the city, which is realistic in terms of available funding, and places an emphasis on infrastructure that really makes a difference to a wide sector of the city’s population.”

New Zealand has a multicultural social fabric and an enviable natural backdrop as a foundation to create communities and cities that will be able to compete on a global scale. As we work towards creating robust solutions for our cities, societal, environmental and resilience issues are also featuring more in early decision-making. New Zealand also has a distinct cultural advantage, where moves to ensure more-

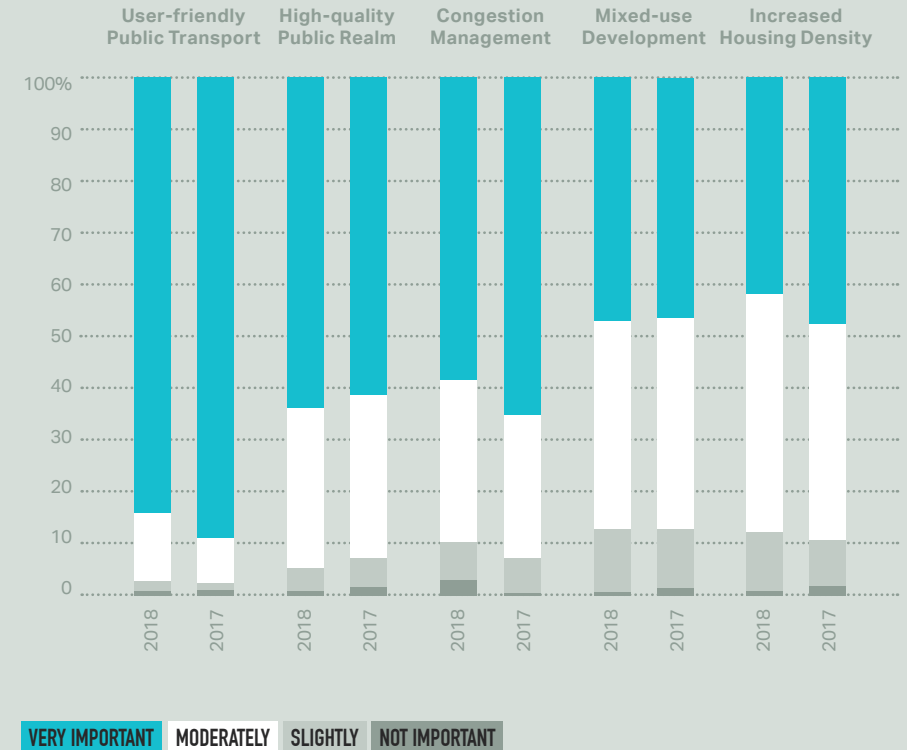
engrained and in-depth involvement of Iwi with major infrastructure project decision-making can be used to differentiate New Zealand on the world stage.

“Providing a vision for communities and organisations to strive towards is a priority — it is important to cultural and community identity to have a common purpose.”

Connecting cities highlights a two-pronged set of overarching challenges in 2018. One is the ongoing skill shortages, funding shortfalls and policy changes, and the second is the flexibility needed by the industry as it adapts to new political leadership.

When it comes to funding cities, respondents have expressed a need to explore alternative funding, which to be successful will need to be supported by the appropriate legislative tools. Respondents see short- and long-term benefits in identifying up-front value in infrastructure projects that can then be fed into the public realm; that is, projects are planned within a clear timeframe and can demonstrate when and where value can be captured.

Priorities for Creating Connected Cities



In our cities, creating user-friendly transport and successful congestion-management systems must be a priority in the early stages of the planning process and an ongoing consideration where development extends further into adjacent rural areas. Identifying and implementing innovative mechanisms to capture value and fund the enormous volume of infrastructure required must also be explored early on, as the need to attract investors grows.

Following the lead of other nations to decouple long-term infrastructure planning programmes from the short-term political cycle and providing more readily for private-sector investment needs to be promoted in order for long-term sustainable nation-building to become a reality for New Zealand. Local capital is being invested in infrastructure overseas due to there being a lack of opportunities in our own country. Bold leadership is required to make changes in this area.



Craig Hind
Technical Practice Leader — Environmental Planning
AECOM



New Zealand has a multicultural social fabric and an enviable natural backdrop as a foundation to create communities and cities that will be able to compete on a global scale.

A GLOBAL PERSPECTIVE: RESILIENCE IN A SHIFTING WORLD

The new generation of infrastructure will be smarter and more efficient, but with high performance also comes vulnerability. Future proofing civil infrastructure projects is one of the biggest challenges facing the industry.

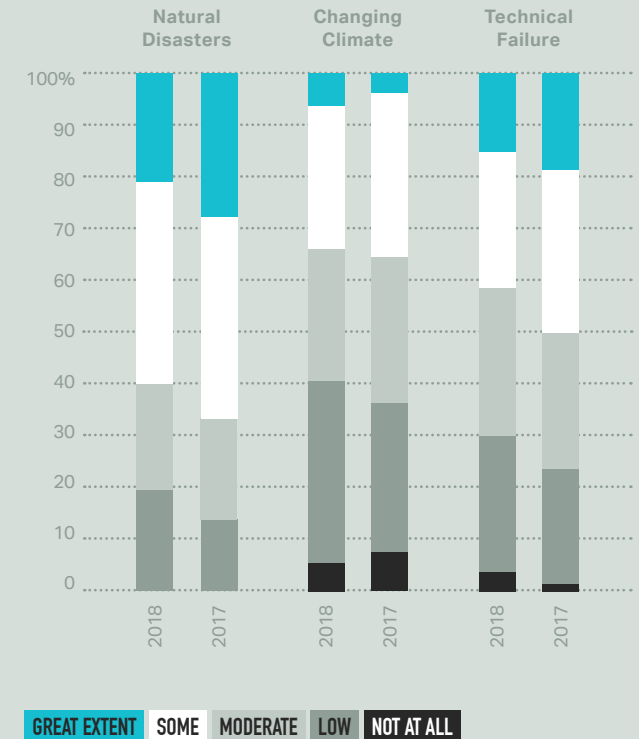
“...Safe, secure and resilient infrastructure is a lifeline to our future. It is the differentiator between successful and struggling economies and societies. So it is not surprising that much hope and expectation is resting on the new era of development.

No one can argue with the facts that demand currently outstrips supply, that existing networks and systems are under strain, and that massive investment, innovation and industry change is required to secure the US\$94 trillion of global infrastructure funding that — according to the G20’s Global Infrastructure Hub — is needed by 2040.

But just adding capacity is not enough. To be durable and future proof, the infrastructure of tomorrow must cope with, and adapt to, a complex, extensive and evolving mix of hazards, risks and threats. As a result, resilience must now be an essential component of every project across its entire life cycle — integrated from the planning and design phase — and not just added on as a last-minute feature...”

Read more from the [Future of Infrastructure global report at infrastructure.aecom.com](https://www.aecom.com/future-of-infrastructure)

Consideration of Resilience in Buildings and Infrastructure Investment Planning



RESILIENT AND SUSTAINABLE CITIES

As New Zealand cities look towards the future, the complexities of creating a sustainable and resilient legacy are being talked about more than they were two years ago, from master planning of large-scale infrastructure right through to smaller projects. There is a need for collaboration and pragmatism when it comes to investment and for questions around resources and funding to be addressed.

Natural Disasters remain the highest priority when it comes to developing a resilience strategy, although this has moderated slightly since our survey 12 months ago.

While it is pleasing to see stronger consideration of resilience and sustainability as a whole becoming more of a priority in current investment planning, respondents have expressed a growing concern around how well prepared our cities are for Natural Disasters. As such, respondents are questioning the impact the current generation could have on those of the future. This concern is highlighted by a series of recent shortcomings in cities and communities around the country. Incidents such as the storms that have battered parts of the country in early 2018 and issues that have emerged following the Wellington earthquake have emphasised the need to invest in a strong resilience strategy.

“Long-term planning and factoring resilience in to the decision-making / business case process as a main priority for improving the resilience of critical infrastructure; then the true costs of not considering it will be apparent and the right decisions will be made.”

It is clear that perceptions around resilience are shifting. There is an emerging realisation that we’re not as resilient as we think we are; as such continuing to make progress in this area is critical to safeguarding our cities and our future.

“There is a focus on seismic resilience, however, many poor quality or poorly executed installations are being observed.”

In contrast to global reports, respondents consider Climate Change to be a lower priority than other resilience considerations, although strong messages regarding concern for residential developments around coastal areas have been expressed. There also appears to be a different level of prioritisation locally about the risks and impacts of Technical Failure, compared to that of our global counterparts. The threat of cyber-attacks is becoming an increasingly hot topic when it comes to resilience on a global scale, and listed as the number one risk; perhaps due to our isolation, this threat is not gaining the same traction in New Zealand.



The South Frame, Christchurch.
Image courtesy of Ōtākaro.

The scope of natural disasters from our big centres through to our communities has highlighted big gaps in the resilience and sustainability of our infrastructure. Yet, recent events such as the fuel line rupture in Auckland and the contamination of the Havelock North water supply outline a wider scope of shortcomings. A nationwide resilience review must be driven out of central government and have increasing consideration in the early stages of planning.



Peter Hartley
Group Director — Environment
AECOM



Kerry Griffiths
Technical Director — Sustainability
AECOM

In addition to meeting our current needs, infrastructure development must respond to major issues facing society including population growth, climate change, increased urbanisation, food security and issues of resilience, equity and economic participation. Investment decisions made today have a significant impact on how our cities and systems will meet society’s needs in the future.

GLOBAL SPOTLIGHT

THE FUTURE OF INFRASTRUCTURE: WHERE DOES NEW ZEALAND STAND?

How does New Zealand compare when it comes to the key trends, themes and challenges that are facing and shaping the infrastructure industry worldwide, and what can we learn from our global counterparts? In 2018 AECOM released its first global report, 'The Future of Infrastructure', which gathered insights from 500 of the top minds and decision-makers in the industry. With an aim to better understand the challenges, priorities and potential when it comes to delivering large-scale infrastructure and developing innovative solutions for cities, some compelling results emerged.

NZ Perspective: Funding — Closing the Infrastructure Gap

It is a challenge worldwide as the industry grapples with who should fund the large volumes of new and improved infrastructure. In New Zealand, we mirror this need as respondents call for innovative and more-efficient procurement and funding models to help deliver the large-scale projects that growing nations demand.

NZ Perspective: Resilience — A Countdown to Catastrophe?

Resilience in New Zealand has been responsive predominantly to the flurry of natural disasters that have ravaged communities and some of our largest cities in

recent years. Building resilient and sustainable cities that can withstand an active ecological environment remains the highest priority when it comes to the risks facing the infrastructure industry as a nation.

On a global scale, the industry faces something entirely different — the threat of cyber-attacks is the number one risk. Is this risk something that should have more consideration in New Zealand?

NZ Perspective: Accelerated Delivery — Delivering Faster, Smarter, Better

Seamless integration of providers resulting in fast, smart and better delivery is a unified ambition for the industry, but much like our global partners our respondents agree there is a long way to go. There is an overarching need in New Zealand for vision and master planning so that the industry can prepare to deliver large-scale infrastructure projects effectively and efficiently.

NZ Perspective: Skills — Innovators Wanted

New Zealand, in a similar vein to the rest of the world, is facing a fundamental supply and skills shortage problem — this is an immediate need. Looking to the future, when we think of the skills needed to achieve an ambitious city vision, perhaps it is time to look globally for solutions and ensure we are not falling short when it comes to delivering complex projects.

NZ Perspective: Innovation — The Infrastructure Innovation Deficit

Developing infrastructure solutions that cater for modern societies, can withstand ecological and economic challenges, as well as ensure quality of life for growing populations is going to require innovation. New innovation is a necessity when it comes to investment right through to technology and project delivery. Respondents in the global report echo similar sentiment to respondents in New Zealand, believing that innovation is a crucial factor for the success of city development.

INFRASTRUCTURE IS EVERYONE'S BUSINESS

Resilient and sustainable infrastructure is critical to economic growth and social progress. Looking at the challenges and opportunities ahead, the Future of Infrastructure report harnesses the views of more than 500 industry decision-makers globally, all of whom work on projects of +US\$100 million.

GLOBAL: FUNDING

CLOSING THE INFRASTRUCTURE FUNDING GAP



90%

INNOVATIVE MODELS

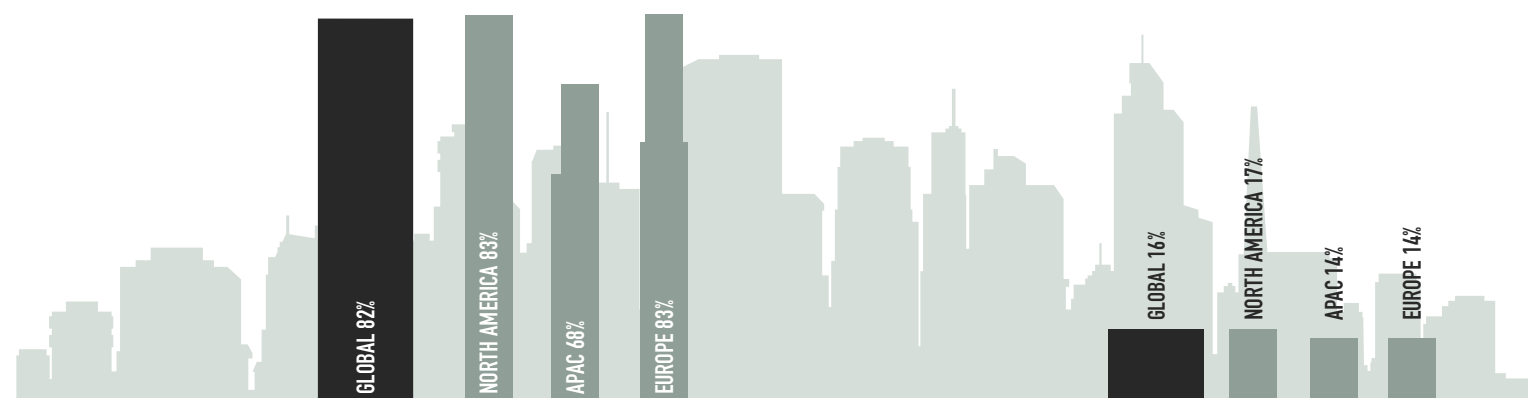
90% believe innovative funding models are effective at bridging the funding gap.

24%

UNPREPARED FOR THE CHALLENGE

However, only 24% believe the industry is fully prepared for the challenge of attracting private investment.

Changes in legislation and innovative funding models are needed to remove obstacles and allow the public-sector to better access private-sector financing.



82%

82% believe that investment in infrastructure is crucial to national prosperity.

16%

Only 16% believe that the infrastructure industry is evolving fast enough to meet society's changing needs.

GLOBAL: RESILIENCE
A COUNTDOWN TO CATASTROPHE?



71%



CYBER-ATTACK OR CITYWIDE TRANSPORT DISRUPTION
71% say a major cyber-attack or citywide transport disruption is probable in the near future.

GLOBAL: ACCELERATED DELIVERY
DELIVERING FASTER, SMARTER, BETTER



71%

TRADITIONAL APPROACHES
71% believe that many of the traditional, tried-and-tested approaches to project management do not fit the demands of today's large, complex programs.

72%

SEAMLESS INTEGRATION
72% feel that most projects are a long way from achieving seamless integration of providers.

GLOBAL: SKILLS
INNOVATORS WANTED



21%

SOURCING THE RIGHT SKILLS
21% feel the industry is fully prepared to source the right skills to meet future industry challenges.



GLOBAL: INNOVATION
THE INFRASTRUCTURE INNOVATION DEFICIT



3 IN 4

OUT OF SYNC
Three-quarters believe that alternative technical concepts from the private-sector provide the best opportunity to develop innovative infrastructure solutions.



R E S P O N D I N G T O T H E C H A L L E N G E S

Future proofing and protection to guard against cyber and physical attacks are essential for all existing networks and systems.

As we enter the Fourth Industrial Revolution, the world of infrastructure needs to rethink project design and delivery. Connected expertise is the key to a seamless approach.

For the workforce of the future, the industry needs an image update — as a place that is diverse and inclusive, valuing wellbeing, innovation and career progression.

Innovation in projects and project delivery must go hand in hand with innovation in the workplace to guarantee future success in the industry.

REGIONAL
SPOTLIGHT

AKL



FOCUS ON AUCKLAND

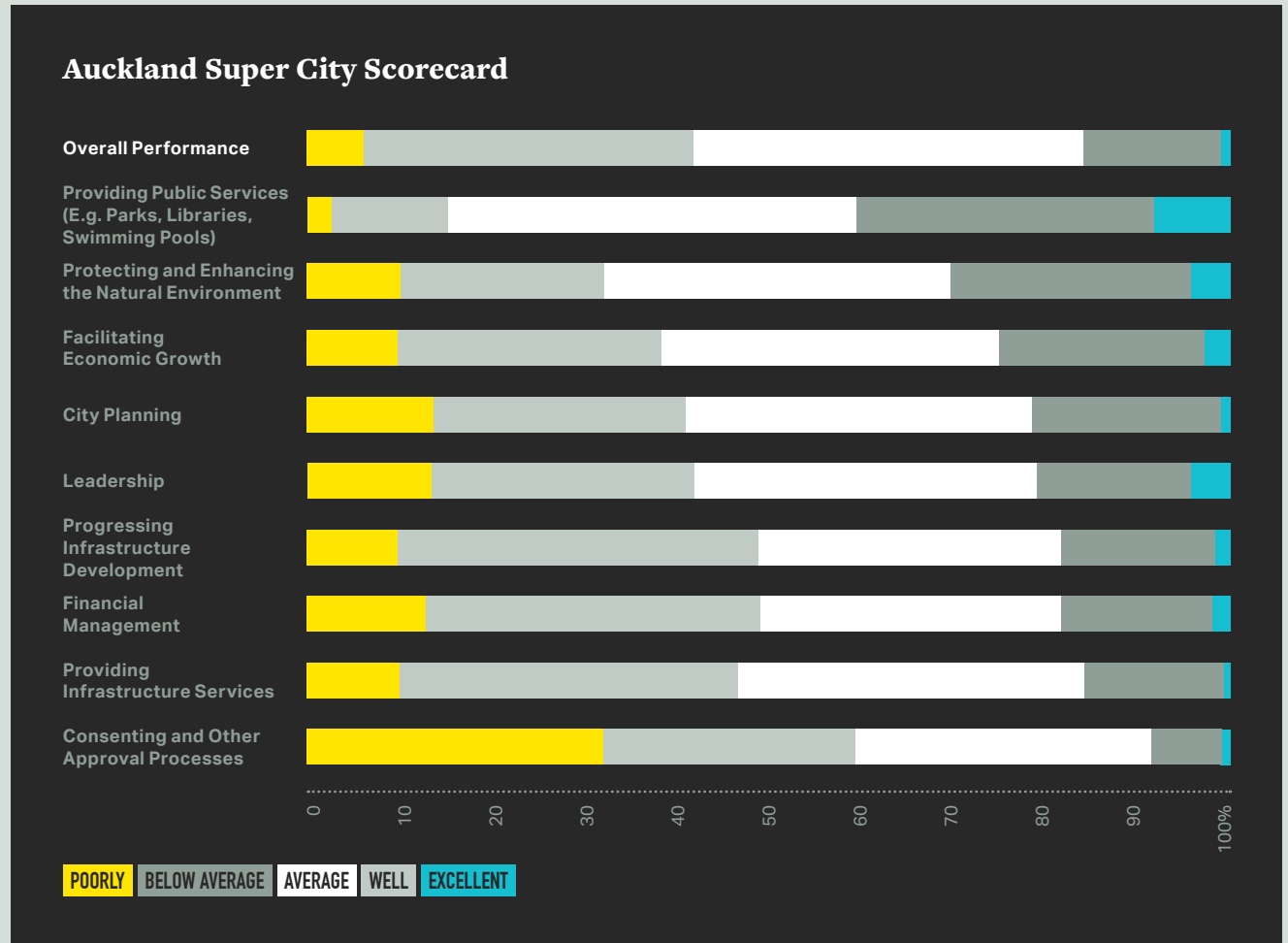
THE SUPER CITY SCORECARD

Our largest city is continuing to grow at a rapid rate. Auckland is tipped to account for more than half of New Zealand’s overall population growth between now and 2043. The pace of the growth is continuing to put pressure on all aspects of the Auckland infrastructure and construction industry, from the planning stages right through to funding and delivery. Ensuring Auckland has critical and resilient infrastructure is a priority, and supports the provision of critical public services. Nearly eight years since the unification of Auckland’s seven council’s into one, we asked respondents how they’d rate the performance of the Super City.

The majority of respondents have rated the overall performance of the Super City as ‘average’ or above. However, it is clear it has some work to do to deliver on its ambitious economic, societal and environmental objectives. Less than two percent of respondents rate the council’s performance as ‘excellent’, and across-the-board results have remained fairly steady. The sheer volume of horizontal and vertical infrastructure required to meet the needs of a fast-growing population is staggering and the city will need to work efficiently and effectively to find solutions to some of the challenges that are making progress increasingly hard.

“It was the right approach to amalgamate the councils; however we are starting to see silos again with CCOs. The council is clearly not set up or funded to accommodate the population growth occurring.”

When we look to results, respondents have indicated they are dissatisfied with Consenting and Other Approval Processes. Nearly 60 percent of respondents scored this aspect of the council’s performance as either ‘below average’ or ‘poor’. Despite new systems, consenting is still proving to be a challenge and respondents see the planning and approval systems as too lengthy, a lack of agility in the process overall and various local and central government restrictions as all combining to slow progress.



As with our previous survey, the council continues to score highly with Providing Public Services and Leadership of the Super City. Fifty-eight percent of respondents feel the council’s leaders are performing at either an ‘average’, ‘well’ or ‘excellent’ level.

“There appears to be a misalignment between the Kiwi lifestyle expectation and what Auckland can sustain. Some big changes in terms of densification, public transport and other urban solutions appear to be required.”

Respondents remain relatively positive about the Leadership of the Super City. Fifty-eight percent of respondents feel the council’s leaders are performing at either an ‘average’, ‘well’ or ‘excellent’ level.

“Auckland does not lack for planning — it lacks in fortitude to deliver on the vision. It is too responsive to local community | NIMBY interests that skew the leadership aspiration away from the overall city objectives.”

AUCKLAND HOUSING

Relative to income, Auckland has some of the most expensive housing in the world and its growing population is only going to add to the pressure. The demand for solutions to help to moderate the market and improve opportunities for the city's residents is a challenge now inherited by the new government.

Although we have seen a slight cooling of the market in early 2018, house prices have been rising by an average of eight percent each year. The Demographia International Housing Affordability Survey released in January, confirmed that Auckland is now ranked the fourth least-affordable housing market in the world.

Respondents continue to view an Increase in the Quality of Urban Intensification and More Diversity in Housing Sizes as key factors to help meet Auckland's housing challenge. Making an impactful change in these areas would require a collaborative approach from industry, government and the public. The opportunity exists to learn from our European counterparts, who are embracing innovation and new construction methodologies such as pre-fabrication and terraced housing. Changing public perceptions around what housing models should look like for the greater good will be a challenge, but moving away from a 'Kiwi preference for individualism' and design that breaks the norm is an alternate way forward. Respondents have an appetite for innovative ideas going forward — from satellite cities, connected by excellent infrastructure, through to developing 'three-storey cityscapes'.

"Lack of intestinal fortitude to promote and enable intensification of existing neighbourhoods within 10 minutes' walk of employment centres — places like Parnell and Remuera are the perfect neighbourhoods for redevelopment into higher density residential, and could cater for a significant volume of future urban demand whilst promoting and enabling Mass Transit PT networks, existing park and recreational facilities and schooling."

Restrictions on Foreign Buyers has dropped as a consideration, a likely reaction to proposed measures. Furthermore, there is increasing commentary about the effect of this approach, with a number of respondents identifying it as a risk rather than benefit to the country.

"From a cost perspective, our housing market is not all that out of line with comparable cities internationally. What is out of line is that New Zealand incomes are lower than in many western countries. The net effect is lack of housing affordability relative to income. This cannot just be tackled by attempting to restrain the housing market, for example, by limiting foreign ownership — we risk cutting off demand and sending the housing market into a tailspin."

There have been a number of challenges that respondents have highlighted as priorities to be addressed in order to move forward. These include the need to attract a diversity of supply chains into the New Zealand market, a desire to address the effect of the Fletcher monopoly, addressing slow consenting timeframes, attracting more skilled workers to help meet demand and forward infrastructure planning to facilitate development.

Respondents are keenly aware that the housing situation in the Auckland market is not something that will be fixed with a single solution or over the short-term. It must be addressed with innovation across multiple platforms and in conjunction with broader economic policies around increasing population that will be conducive to productivity and development.

Key Factors to help Meet Auckland's Housing Challenge



Note: Bubbles indicate a rating scale out of 10. White figures represent percentage change since 2017.

AUCKLAND INFRASTRUCTURE FUNDS

The increasing demand of high-quality, robust infrastructure that is required to support a rapidly growing population in our largest city raises a number of questions, but none more so than ‘who pays’ and ‘how’.

Respondents point to a lack of alignment between multiple government agencies, private industry and individual communities when it comes to funding Auckland housing and infrastructure development. We see a continuation of this disconnect over the past 12 months. There is a reduction in respondents wanting less funding by Partial Sale of Existing Assets, which is matched by the respondents who do want more of this type of funding.

Many respondents believe that due to the sheer volume of work throughout the country, all forms of funding will need to be used, but have strongly voiced a need to step back and look at the effect short-term government cycles have on long-term spend overall.

“Influencing user decisions through financial decisions will be the most effective — but only coupled with enabling urban planning provisions. A fuel tax matched with enabling inner city residential intensification around transport nodes.”

“Application of the GPS seems to have different interpretations from different organisations — this is paralysing infrastructure development. The three-year government cycle does not work with most infrastructure cycles, which are usually based on a 20-year evaluation. It makes no sense to keep starting and stopping projects every three years.”

“Transport infrastructure under the new government appears ideologically driven rather than based on robust cost / benefit analysis, influenced too much by the political cycle.”

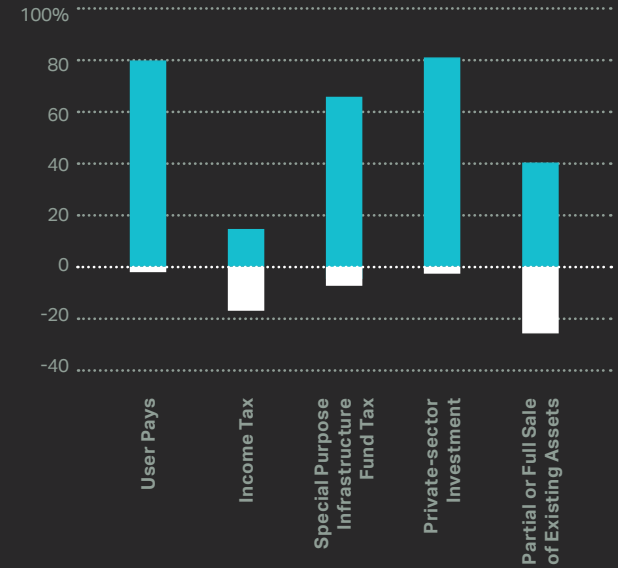
There is an increasing urgency to address the country’s infrastructure gap. We know what we need, but who will pay? While financing and funding infrastructure is a global problem, it is innovative decision making and influencing made at the local level that will enable New Zealand to keep up with demand. Large scale investment — enabled through mechanisms such as public policy, harnessing of private capital, and alternative delivery models — will be transformational, with a flow on effect that will fuel growth and free up the economy.

Significant historical infrastructure investments have positively shaped the world we live in today. With capital as cheap as it’s ever been, now is the time for bold investment decisions. This is what will set the country up for a successful future.



Craig Davidson
Managing Director — New Zealand
AECOM

Funding Auckland’s Infrastructure



MORE FUNDING **LESS FUNDING**

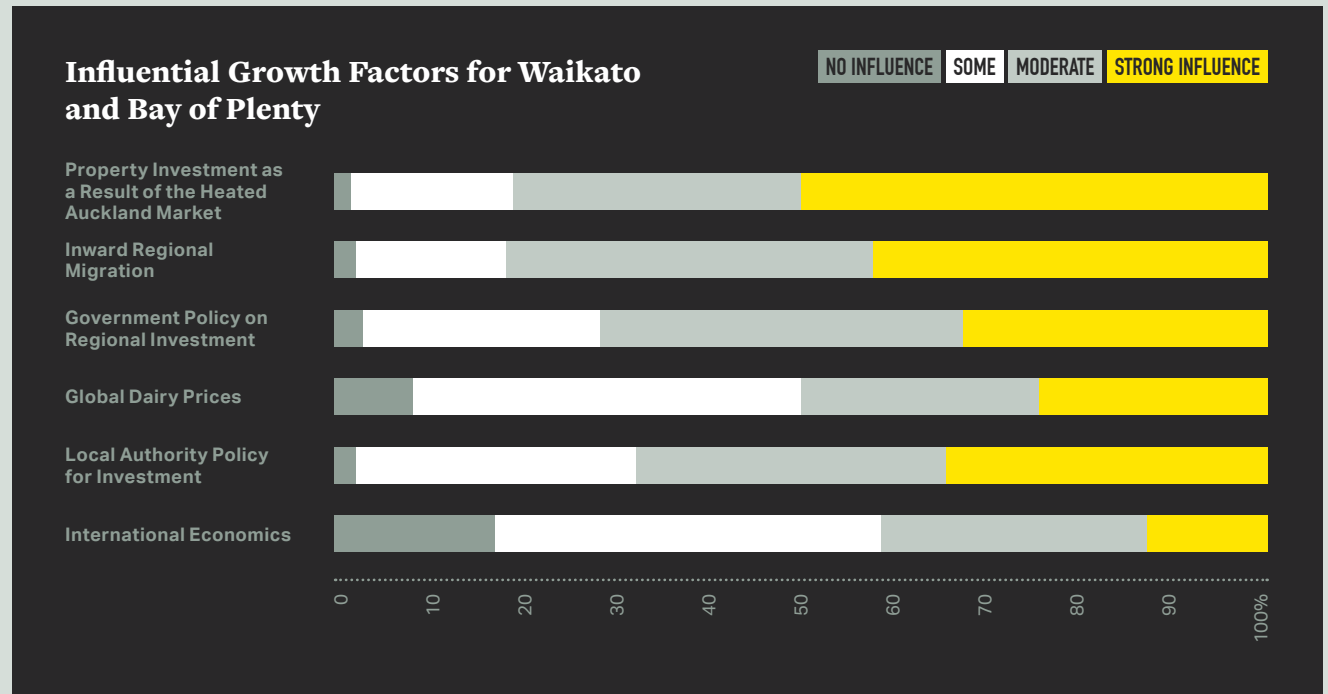
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FOCUS ON WAIKATO AND BAY OF PLENTY

In line with results from previous years and comments by respondents, it is recognised that growth in Waikato and Bay of Plenty is underpinned by their strategic position in the Upper North Island and close proximity to Auckland. Despite dropping 13 percentage points since our survey 12 months ago, 61 percent of respondents remain confident that the number of property investors moving out of Auckland and into Hamilton and Tauranga will continue to increase. Respondents noted the cooling Auckland housing market and uncertainty around land development expectations could be factors contributing to the small drop in confidence. Either way, it is clear that the Auckland market is considered a strong influence on investment levels in the two regions.

Continued growth in the major urban centres, Hamilton and Tauranga, is spilling over into the rural townships with net positive population increase in many centres after a sustained period of decline. When asked what level of priority should be given to a number of these areas by local authorities, more than 90 percent of respondents indicated investment in infrastructure and planning is seen as a high priority, an increase of a huge 82 percentage points from our survey 12 months ago. The news that infrastructure investment in both centres will be supported by Housing Infrastructure Fund (HIF) loans from central government over the next five years is likely to be the basis of the renewed optimism.

The Waikato Expressway and the expansion of rural broadband will be completed within the next three years and there is hope we will see the government's commitment to inter-regional rail also come to fruition. Respondents recognise that these investments will radically improve connectivity for local businesses and communities to compete in an increasingly free-trading



world. The forward view for transport is largely focused on safety and enabling urban growth, and the reshaping of national investments in response to the government's Policy Statement on Land Transport. This will be acutely felt in the region with high-priority, inter-regional State Highway investments taking a back seat.

Respondents recognise there is a need to repair and maintain ageing assets while also developing a high-quality public realm. However, attempts over the past year to reduce overspending and generally improve fiscal control have resulted in a shift of priorities.

An effective response to growth in Waikato and the Bay of Plenty will require increasing collaboration between central government, local government and the private-sector if we are to improve housing affordability, create great urban spaces and tackle existing and emerging social issues. Having a cohesive approach to growth management, a clear vision for our future linked with transport investment and an enabling policy environment continues to be rated as highly important to the success of our cities.



James Bevan
Area Manager — Waikato and Bay of Plenty
AECOM



HLZ+TRG

FOCUS ON WELLINGTON

Seismic Resilience Issues are still recognised as being the most significant barrier to economic growth and development in Wellington.

“The challenges of dealing with a major earthquake in Wellington are greatly underestimated by government and the general public. This leads to complacency and underinvestment.”

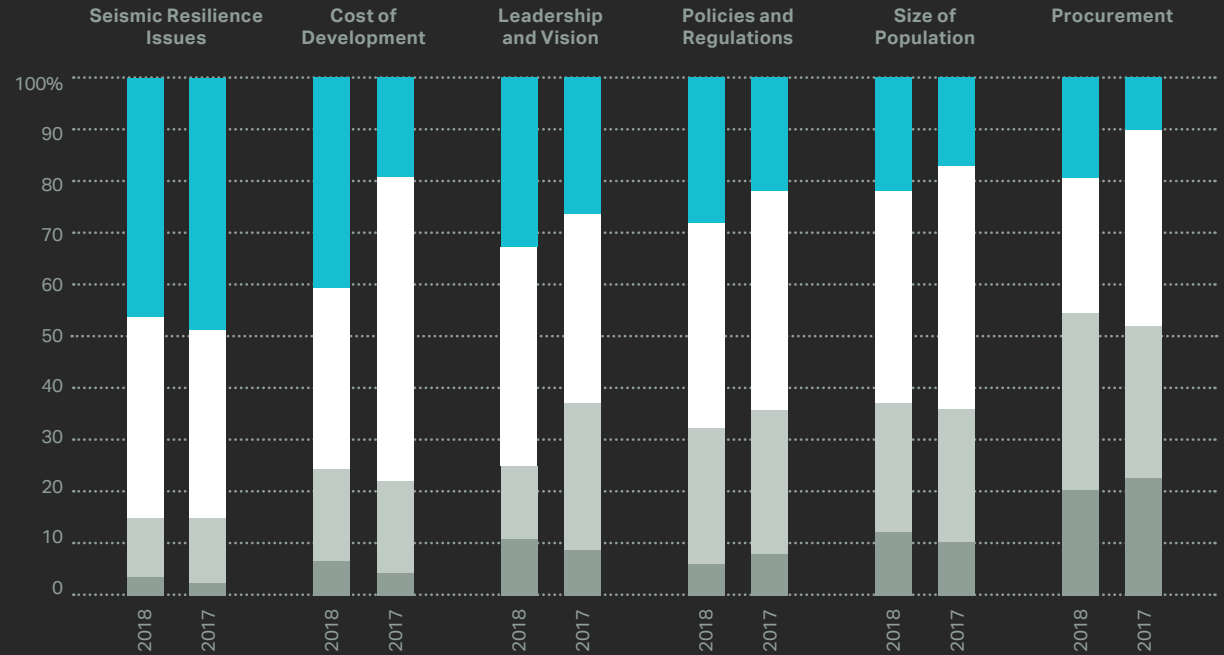
Tackling perceptions around the ability to withstand future seismic activity is going to provide an enormous challenge for the city and respondents agree that this will only be achievable if Wellington is able to demonstrate sound resilience in both the reparation of damaged buildings and the creation of new buildings. The challenges that emerge around funding such a large task are causing concern amongst respondents who believe this will greatly impact the economic growth and development of the city. Since our survey in 2017, there has been a significant increase in respondents recognising this as being a substantial barrier.

Despite some of the challenges the city is facing, 44 percent of respondents believe that investment is going to increase in the next three years. This is indicative of the guarded optimism that the city will find a solution to tackle cost, restore damage and prepare for the future.

The need for strong leadership and vision is going to be instrumental in paving the way for success in Wellington. There have been big ideas that have surfaced, but with many projects halting or slowing right down, there is a degree of unease and uncertainty that has emerged in conjunction with the obvious risks of seismic activity. Furthermore, the empty buildings in and around the central business district are a constant visual reminder of just how much needs to be done.

Barriers to Economic Growth and Development

SIGNIFICANT BARRIER MODERATE SLIGHT NOT A BARRIER



As our infrastructure ages, the importance of following established policies to sustainably fund the renewal of this infrastructure is abundantly clear. There should not be panic to address a perceived growing mountain of renewal.



Ian Martin
Area Manager — Wellington
AECOM

WLG

FOCUS ON CHRISTCHURCH

Optimism amongst those working in the infrastructure and buildings sector has plummeted for Christchurch and respondents are emphasising the need for strong Vision and Leadership to move forward. At the same time, respondents have indicated they feel the Regeneration Blueprint for the city is gradually becoming unpicked, slow progress is being made on major projects and there is an increasingly unclear outlook around what the future Christchurch is actually going to look like.

With the Christchurch population now above pre-quake levels for the first time since the disaster, the need to develop a functional plan is going to become increasingly important. Clear vision and strong leadership is going to be fundamental in creating a successful and functional city. For respondents, Vision and Leadership are the two main factors that are missing when it comes to turning the ambitious goal of creating an archetypal future city into a reality.

Christchurch represents a two-gear economy. First, there is the consulting / construction / property sector, which has been booming for the past few years but is due to slow down in the coming two years. And, second, there are those in the industry who are tied to big projects that have taken a long time to progress, such as the Lincoln Hub, Cathedral Square, Metro Sport, and of course, the Stadium. In 2017, it was emphasised that there was ‘a need to allocate infrastructure work over a period of time to avoid boom-bust cycles and minimise the effect on the city’. In 2018, the plans for future infrastructure are unclear, and with the current projects due for completion over the next two years, there is no clear pipeline, timeline, or high-level plans to reference and prepare for.

“The commercial equation doesn’t work. Creating feasible projects (given the risk) is exceedingly difficult and capital is readily transportable to other locations.”

The other challenge that Christchurch is facing is around workforce. This is in fact a nationwide concern, where the construction market has limited capability that extends across the entire supply chain. There is a growing unease around this particular challenge, further heightened by the recent demise of two of the country’s largest contractors. Contractors are approaching big projects with caution because the risk is too great, and the impacts of this are being particularly felt in the Garden City.

“Capacity and capability of the construction sector — there is a lack of drive around improving productivity, innovation and strategic engagement with their supply chains.”

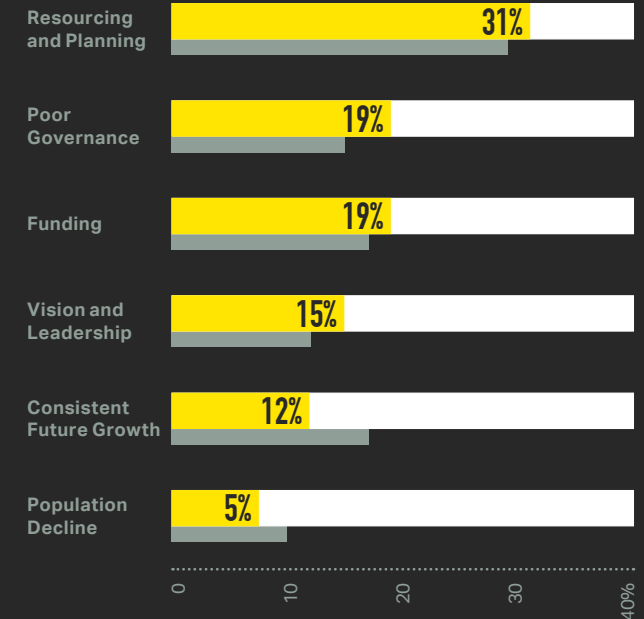
Over the course of seven years, the holistic regeneration plan for Christchurch has slowly unravelled and we are beginning to see a ‘city of many projects’ emerge as a result. There is an immediate need to reclaim the opportunity that came from such adversity, with strong leadership and a cohesive vision for the future. These factors are going to be fundamental in driving progress and the success of the city.



Chris Hemphill
Area Manager — South Island
AECOM

Challenges and Lessons for Regeneration

2018 2017



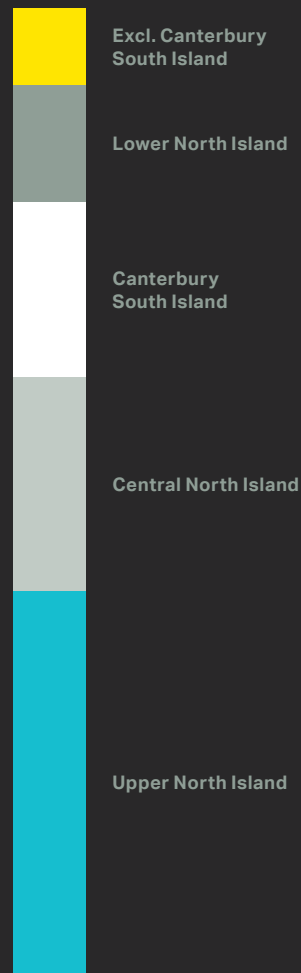
CHC

SURVEY SAMPLE — A BROAD VIEW

Survey respondents are invited to participate based on their role in the industry. Leading thinkers and decision-makers are selected from the buildings and infrastructure markets.

Profile of Respondents

Respondents by Location %



Respondents by Industry Role %



Public vs Private Respondents %

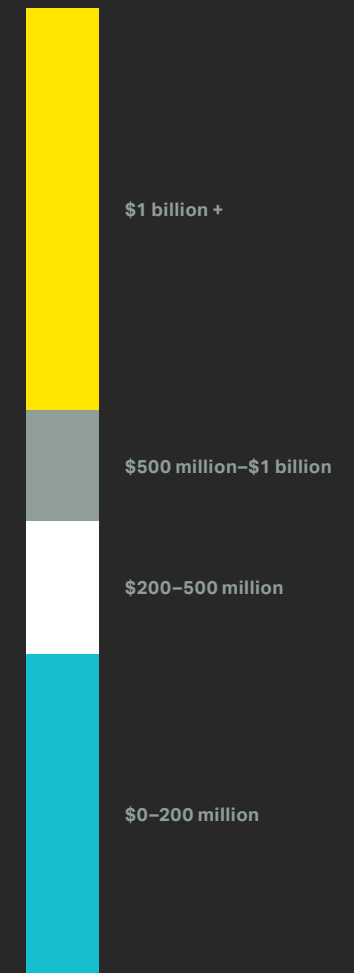


Market Values

Investment Market Respondents by Turnover %



Delivery Market Respondents by Turnover %



CONTACTS

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INFRASTRUCTURE AND BUILDINGS CONSTRUCTION SURVEY

NEW ZEALAND 2018

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