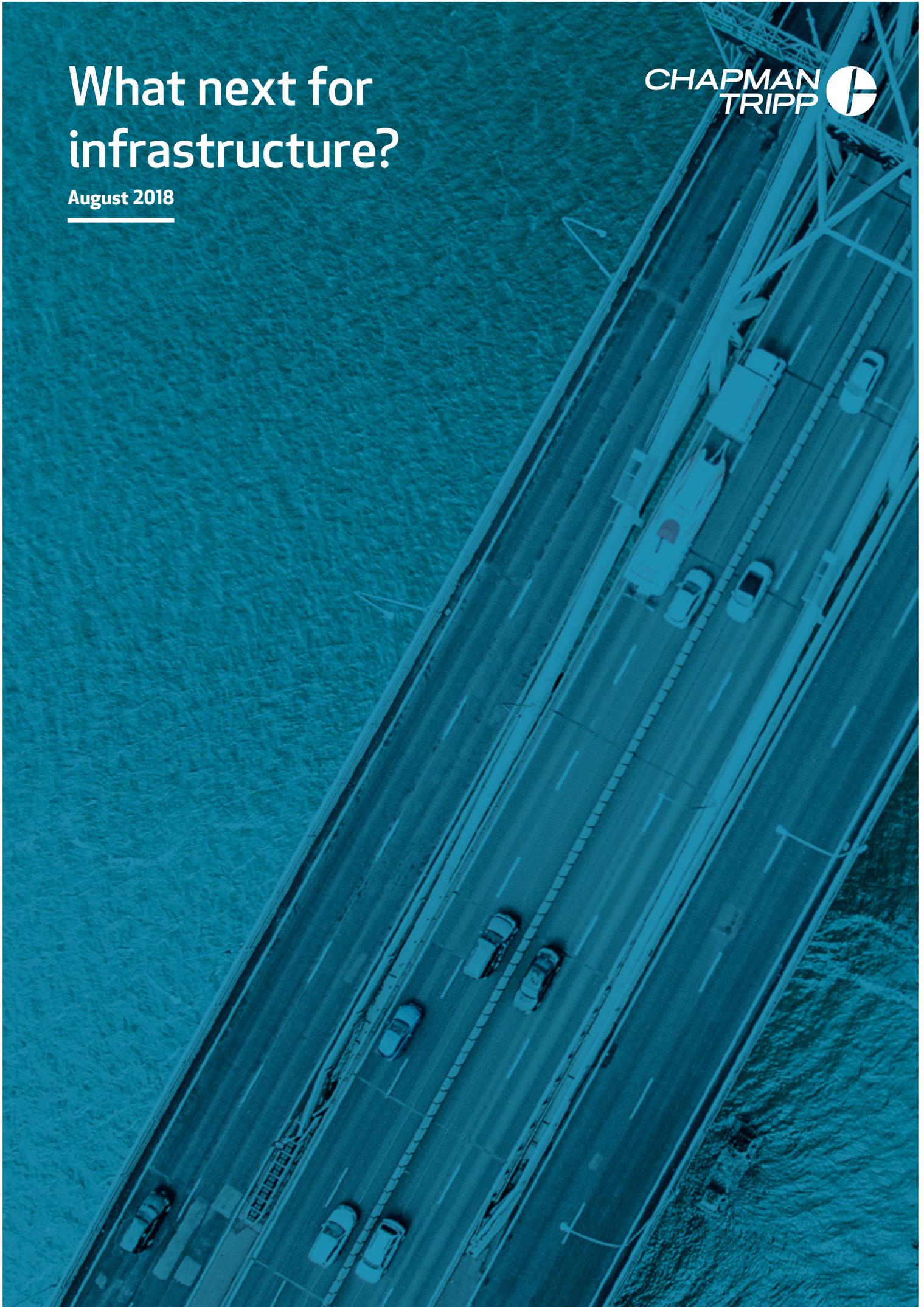


# What next for infrastructure?

August 2018

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CHAPMAN  
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## NZ Law Firm of the Year

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Chambers Asia-Pacific Awards 2018

## Most Innovative National Law Firm of the Year (New Zealand)

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## New Zealand Deal Team of the Year

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# The infrastructure dilemma

## How can we solve New Zealand’s significant infrastructure deficit?

Decades of under-investment by both central and local government, exacerbated in recent years by strong and increasingly uneven population growth, have exposed deficiencies in our infrastructure and in our tools for responding to growth.

New Zealand’s infrastructure capacity underpins our:

- workplace productivity (now well below the international median, resulting in a low-wage, low return economy)
- resilience to climate change and natural hazards (e.g. earthquakes, landslides)
- social objectives (affordable housing, manageable urban commutes), and
- quality of living and international brand (e.g. liveable cities, safe drinkable water, clean rivers).

So it is imperative we address the deficit swiftly, and draw upon international best-practice examples – and capital – to do so.

### A snapshot of New Zealand’s infrastructure – 2017

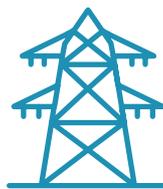


#### TRANSPORT

**10,886KM**  
STATE HIGHWAY NETWORK

**83,703KM**  
OF LOCAL ROADS

**4,000KM**  
OF RAIL CORRIDOR



#### UTILITIES

**12,000KM**  
OF NATIONAL  
TRANSMISSION GRID

**42,312 GWH**  
ELECTRICITY PRODUCED

**724,253**  
END USERS ABLE TO CONNECT  
TO ULTRA-FAST BROADBAND



#### WASTE AND WATER

**52**  
MUNICIPAL LANDFILLS

**\$45.2 BILLION**  
TOTAL REPLACEMENT  
VALUE OF THE THREE  
WATERS ASSETS

Source: Treasury

# Key trends and insights

**Bold action will need to be taken to address our infrastructure problems.**

## Investment & funding

- The key to resolving under-investment is to make the best use of the resources and endowments of central government, local government and the private sector.
- We need an informed debate on how new infrastructure is funded, which recognises the unacceptable costs attached to the status quo.
- Financing should not be a barrier – even given the Government’s net debt reduction target and the borrowing limits on local authorities.
- Private financing should be deployed to break the infrastructure funding deadlock.
- There is a wave of global capital looking for a home, with institutional investors worldwide now managing more than US\$100 trillion. Pension funds in particular are seeking safe asset classes that deliver stable long-term returns. Infrastructure investments fit neatly into this profile.
- New Zealand can draw on a huge body of international research and best-practice examples in developing transaction structures that enable enhanced coordination and rational risk allocation.
- Beneficiary-pays and value-capture tools are an important part of the funding mix for growth infrastructure. They align cost and benefit, can reshape incentives to alleviate housing supply and affordability issues, and – with a structure to enable leverage – can create intergenerational fairness.

## Co-ordinating the pipeline

- We need a coordinated approach that makes the best use of, and builds upon, our existing capabilities and encourages innovative solutions.
- A National Urban Development Authority with the ability to agglomerate land for residential developments of scale will fill a gap in the existing legislative toolkit and open opportunities for private sector investment.

## Climate change

- Climate change is creating a huge need for new infrastructure – both because of the displacement effects of rising seas and more extreme weather events and because of the impending impact of carbon pricing on economic activity.
- Businesses should be escalating their climate change response capability now.

## Construction capacity

- Infrastructure projects take time and our construction sector has severe capacity constraints after a period of extraordinary carnage that took out most of our biggest players from the vertical construction market.
- This will provide a growth opportunity for second-tier firms. The development of a solid project pipeline, offering enough work to support a long-term presence in New Zealand, should attract overseas contractors and underpin local investment.

# The big picture

## Our take on the state of NZ's infrastructure at a glance



### The good

Private financing offers a large undeveloped resource

## New Zealand's infrastructure problem is well understood and closely measured.

Since 2009, infrastructure has had its own dedicated resource in the Treasury – the National Infrastructure Unit – which reports each year against a rolling 30-year New Zealand Infrastructure Plan.

So, rather than tramp laboriously across terrain that is already fully explored, we have provided a big-picture analysis of the New Zealand infrastructure landscape.

Some of the key factors include:

### Population and growth

- A few areas of hot population growth (the Auckland-Hamilton-Tauranga triangle and the Queenstown-Wanaka enclave in the South Island), while much of the rest of the country experiences flat or declining populations and incomes.
- A booming tourism industry that is putting pressure on infrastructure in isolated and sparsely-populated tourist destinations.

### Challenges

- A small construction industry facing multi-faceted capacity constraints and steeply rising input costs.
- Ageing assets, nearing the end of their useful life.
- Technological change requiring investment to enable new infrastructure.
- International pressure to meet climate change emissions-reduction targets.
- Exposure to earthquakes, volcanoes, rising sea levels and extreme weather events.

### Policy factors

- Strict borrowing restrictions on local government coupled with an ambitious net-debt reduction target at the central government level.
- An asymmetry between the high responsibility local authorities have for critical infrastructure and their limited financial autonomy.
- A fragmented regulatory regime characterised by multiple agencies.
- Poor planning alignment between the public and private sectors and between central and local government.

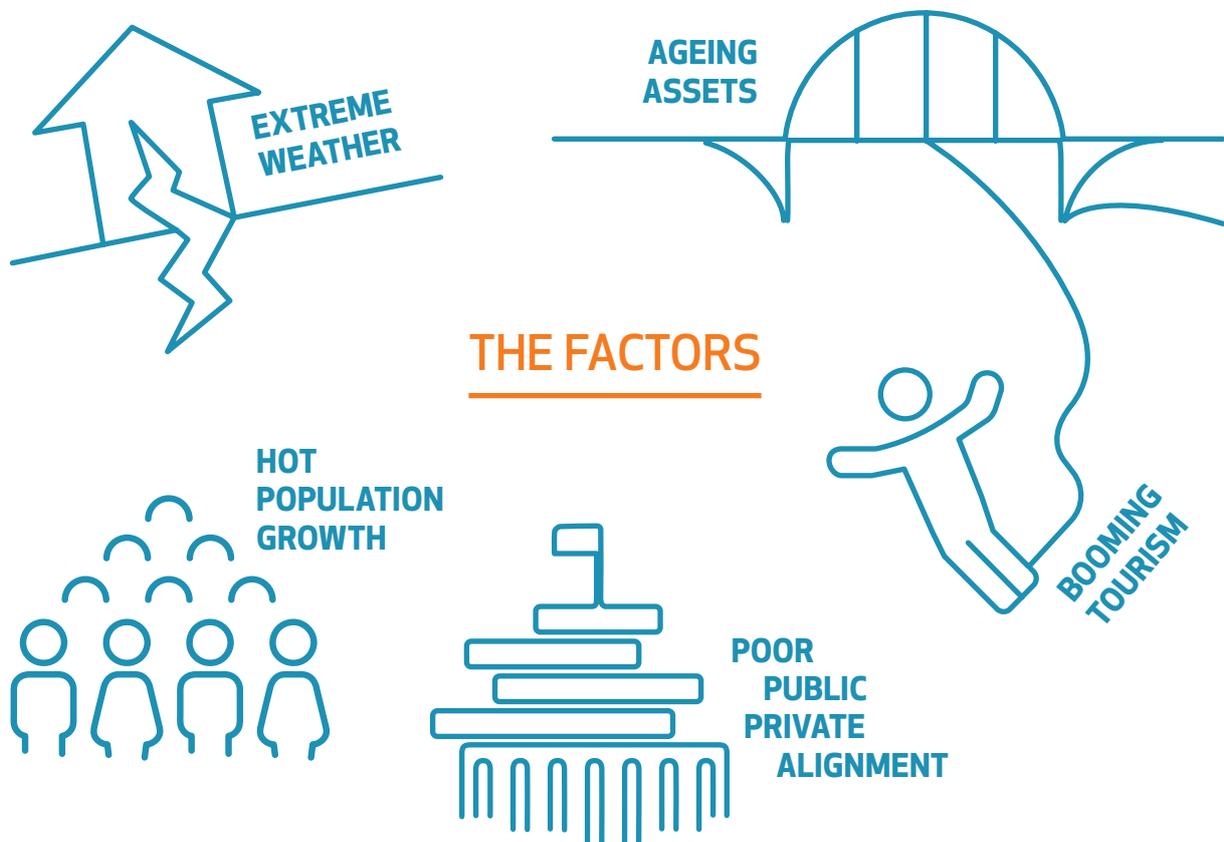
The big picture (continued)

 **The bad**

Our infrastructure deficit is significant and complex to unwind

 **The ugly**

Climate change is placing even bigger pressure on existing infrastructure



# Toward a more informed cost debate

The infrastructure deficit is already exacting a high toll, much of which is borne by low and middle income earners.

These costs can take many forms – hours spent in traffic gridlock, lost production, housing unaffordability, sewage spills onto beaches, power outages, gastro outbreaks and land slips, to name a few.

Therefore the real debate is not about whether we pay for infrastructure but how we pay for it, and whether the expenditure addresses the causes or merely the consequences of the infrastructure shortfall.

## The high costs of inaction

Our infrastructure and housing backlogs are creating ever-increasing economic, social and environmental risks and costs.



## Housing affordability

The failure of residential construction to keep up with demand has resulted in an estimated housing shortfall of 70,000 nationwide, of which 45,000 is in Auckland.

House price growth has outstripped income growth every year since 2003, producing among the worst house price-to-income ratios in the OECD: at 9.6 for Auckland and 7.1 for New Zealand. This has contributed to declining home ownership, which in the past two decades has fallen from 74% to 63% – and is now at just 17% for the under-35s.



## Cost of living

Wage growth has comfortably exceeded consumer price inflation in each of the last five years but these gains are being eroded by high housing costs. The housing crisis has a deeply regressive impact, exacerbating inequality and contributing to a wide range of costs and adverse social outcomes, including in health and education.

Low-income families are the hardest hit, with housing costs now averaging 54% of income for the bottom 20% of households, up from less than 30% in 1990. But middle income-earners are also being squeezed as shown by the recent strike action by nurses and teachers and others in the public sector.

**Toward a more informed cost debate** *(continued)*



**Risk and resilience**

Household debt in New Zealand, much of it mortgage debt, has surged to a new peak of 168% of disposable income. Almost all this is held on bank balance sheets, creating a financial

system risk and contributing to macroeconomic vulnerability to external shocks which is viewed by both credit rating agencies and international bodies as New Zealand’s most significant risk.<sup>1</sup>



**Quality of life impacts**

Infrastructure under-investment has also compromised quality of life. Traffic congestion is an obvious example, particularly in Auckland, but also in other major cities. And it will get worse before it gets better.

An officials’ report has projected that, at the current level of investment, gridlock will spread through all of Auckland from the Bombay Hills to Dairy Flat by 2046.<sup>2</sup> Then there are the effects of environmental degradation – polluted beaches, unswimmable rivers, land erosion and more.



**The productivity benefits of infrastructure**

Infrastructure investment has been widely demonstrated to improve productivity with positive economy-wide spill-overs. This is especially

important in New Zealand, which suffers the paradox of having one of the lowest productivity growth rates in the OECD while ranking among the most favourable for regulatory settings and ease of doing business.

The IMF estimates that infrastructure investment under-serves need in New Zealand by around 0.3% of GDP a year on average and that closing this gap by 2040 would generate a long-term real GDP gain of 0.65 to 0.8%.<sup>3</sup>

Were the new infrastructure to achieve the same quality as the Singapore benchmark, the gain would increase to 1% of GDP (or around \$2.8 billion a year in today’s dollars).

**“The current infrastructure deficit is already exacting a high toll – hours spent in traffic gridlock, lost production, housing unaffordability, sewage spills onto beaches, power outages, gastro outbreaks and land slips.”**

<sup>1</sup> Refer for example S&P Global Ratings New Zealand Report (30 January 2018): affirming New Zealand’s AA foreign currency rating but noting the macroeconomic and financial stability risks caused by high levels of private sector and external debt from house prices that have risen faster in the past 5 years “than in any other economy we cover” and OECD Economic Survey: New Zealand (2017) which notes: “The major vulnerability facing the economy is high levels of household debt associated with rapid house price increases, particularly in Auckland.”

<sup>2</sup> Phase one Report: The Congestion Question (March 2018).

<sup>3</sup> IMF Country Report New Zealand: Selected Issues (Country Report No. 18/203), July 2018. The GDP gap over that period is assessed to be approximately \$28 billion on a cumulative basis, or 0.3% of GDP (around \$1 billion) per annum.

# Sector hot spots

There is increased demand on all forms of infrastructure – from electricity to water and social infrastructure such as schools and hospitals.



## Electricity

The leading theme over at least the next several decades, and probably beyond, will be how to manage rapidly increasing demand – where to build, what energy sources to use and how to phase the investment.

New Zealand currently generates a little over 42,000 GWh per year. Modelling for the Productivity Commission suggests this volume will need to increase at least 50% by 2050, and possibly more than double, in response to population growth, rising incomes and the move away from fossil fuels in transport and industrial production.

This will require a significant expansion in wind, geothermal and solar generation.

Pressure will come from the Government’s ambition to have 100% renewable energy by 2035 – a goal which both the Productivity Commission and Transpower, the manager of the national grid, consider is not feasible until New Zealand has all-weather security of supply.

Other themes that will complicate the picture in unpredictable ways are:

- increased outage risk from the higher incidence of climate change induced extreme weather events, and
- the impact on consumer behaviours from the uptake of smart technologies.



## Three waters – drinking, sewage and stormwater

The leading theme should be lifting efficiency and resilience. This is a large and diverse sector which, with the exception of Watercare in Auckland and

Wellington Water, is managed by local authorities under a loose set of legislative obligations.

The dual challenges are maintaining standards in areas of declining population and keeping up with demand in areas of high population growth. According to the National Infrastructure Unit, expenditure of more than \$15 billion is planned between 2015 and 2025, excluding projects under \$1 million. Whether that will be sufficient to meet demand and quality requirements is, at the very least, debatable given the impacts we are already starting to see from climate change.

Public confidence has been shaken by poor investment decisions (Kaipara), health hazards (the Havelock North drinking water contamination) and delivery failures such as the wastewater spills in the April Auckland storm.

The Government is exploring a recommendation from the Havelock North Inquiry to shift to a system of aggregated, dedicated water providers. This would lift scale and capability and should deliver a stronger funding base by providing for an element of subsidisation from larger urban populations to small towns and rural areas.

Sector hot spots (continued)



**Social infrastructure – social housing, hospitals, schools, prisons, defence**

Social infrastructure has played Cinderella to debt reduction for decades now because of the three ugly sisters – the

borrowing binge of the Muldoon Government, the fiscal shocks created by the GFC in 2007 and the Canterbury earthquakes in 2010 and 2011.

As a result, much of the existing estate was built before or well before the early 1980s so is now degraded and needs earthquake strengthening. In addition, many of the assets have been stranded by shifts in population distribution and societal changes – in particular, the drift north and the trend to smaller family sizes.

The impact of these effects has been strongest in the education and social housing sectors where we see empty classrooms in some areas/crowded classrooms in others, and vacant three-bedroom state houses alongside growing state house waiting lists.

The ‘rebuild’ of core public services was a major theme of this year’s budget which allocated \$3.8 billion to build 6,400 state houses; \$390 million for new schools and classrooms, and \$750 million for urgent hospital maintenance projects.

But the ‘mega-prison’ in South Waikato is off the table, reflecting the latest Government’s focus on community engagement and rehabilitation.

**Central and local government currently own over \$200 billion in infrastructure assets. The forecast infrastructure spend to 2025 is over \$110 billion.**

Sector hot spots (continued)

**Transport**

Transport has the benefit of coordinated mode-neutral planning at the central level by the NZ Transport Agency, giving effect to the Government Policy Statement on Land Transport (GPS). Major themes for the next 10 years will be the implementation of the new GPS and the Auckland Transport Alignment Plan.

Both contemplate a shift at the margins away from cars and toward public transport, rail options, cycling and walking. In the new GPS, the funding shift from spending on roads to other transport modes is significant, particularly the shift of emphasis to the Auckland RTN.

Other trends relate to finance, in particular:

- the pursuit of innovative new funding mechanisms, and
- a greater reliance on user pays – the Auckland regional fuel tax and proposed congestion pricing.

The recent appetite shown by the NZ Super Fund to play a central commercial and delivery role in the Auckland Light Rail Project reveals the attraction of such projects as a source of stable, long-term cash flows.

Median house sale



**Housing**

A leading cause behind the affordable housing crisis is the high cost of land. This reflects a combination of factors, in particular: restrictive land use regulation (height limits, urban rural boundaries, and heritage restrictions); geographic features (the Auckland isthmus, Wellington’s hills), and rapid population growth (Auckland, Wanaka/Queenstown, Tauranga).

These effects have been exacerbated by inadequate funding tools for housing-related infrastructure and the failure of the existing framework to incentivise development, enabling windfall gains from land-banking.

The Government’s big solution to the supply issue is the ambitious KiwiBuild project, aimed at building 100,000 homes within ten years. Housing Minister Phil Twyford is still holding this out as a realistic prospect but few share his confidence because of the severe capacity constraints facing the building industry and the infrastructure deadlock.

Housing shortfall



House price to income ratio



# Private financing – ideal for infrastructure investment

## The search for solutions to New Zealand’s infrastructure problems is now urgent.

Our infrastructure problem means the search for new funding solutions is now urgent.

The Government, in its first Budget Policy Statement, committed to working with local authorities and the private sector to design and deploy innovative funding mechanisms. It has also asked the Productivity Commission to examine the adequacy and efficiency of existing local government funding and financing frameworks.

This work is taking place within an auspicious set of circumstances:

- there is a large pool of accessible money, with the World Bank calculating the resources of global capital now under institutional management at more than US\$100 trillion
- a huge amount of international research shows that infrastructure assets are well-suited to supporting long-term financing at a low cost of capital, and
- best practice examples are available of projects where private financing has been able to overcome bottlenecks in delivering transformational infrastructure.

These techniques are already being deployed through Crown Infrastructure Partners (CIP), which was developed out of Crown Fibre Holdings by the previous government and is tasked with setting up special purpose companies to fund the trunk infrastructure needed for new housing developments.

But CIP’s ability to discharge its remit is constrained by currently available tools.

### Best practice examples

A huge amount of research into funding options for public infrastructure has been developed post the Global Financial Crisis by the OECD, IMF, World Bank, G20 and other multi-lateral agencies.

This has led to an emerging consensus that what is required is a robust and replicable transaction structure to match the vast resources of pension and sovereign wealth funds to the demand for infrastructure projects (estimated by McKinsey at US\$21 trillion worldwide). In the meantime, an accumulating body of innovative transactions is being developed.

- **Thames Tideway** – a £4 billion extension to London’s sewer system to intercept untreated sewage before it spills into the Thames. This is 100% privately financed, including through very long-term infrastructure bonds that will be repaid from fixed charges on water users’ bills. The project features a carefully constructed and transparent risk allocation, with a specific government support package to cover contingencies it was not efficient to transfer to the financiers or the construction consortium.
- **London Crossrail** – a major new east-west rail link in London being part-funded by value capture tools, including a Business Rate Supplement levied by a statutory authority representing the multiple central and local government stakeholders.
- **Montréal Metro Rail** – a \$CAD6 billion public transport development for the Greater Montréal area (similar population to Auckland), linking the airport and the main islands that make up Montréal. This is being undertaken by La Caisse de Québec (CDPQ), a public pension fund manager, for a targeted return deriving from the project’s long-term revenues. CDPQ was the NZ Super Fund’s joint venture partner in its unsolicited bid for the Auckland light rail project.

## Private financing – ideal for infrastructure investment *(continued)*

### Possible application to New Zealand

Common to each of these transactions is that they are enabled by private financing on the basis of dedicated cashflows derived from the new infrastructure. A mechanism to enable such asset-backed financing can break the deadlock arising from deficiencies in existing tools and delivery options, while freeing up government resources to focus on investment where private financing is not feasible.

Such a tool would be particularly attractive in the New Zealand context at both central and local government levels. Central Government has much more capacity to borrow than local government but both major parties – Labour and National – are committed to reducing core crown debt. A large part of the reason for this fiscal conservatism is to provide a counterweight to the indebtedness of the household sector, now sitting at 168% of disposable income.

The constraints on local government are more severe and the other options are more difficult to access, as demonstrated in the table opposite.

The issue here is structural. Local authorities are largely responsible for the provision of growth infrastructure but their funding tools are not well suited to discharging that responsibility, particularly where acceleration is required. Asset-backed financing offers a tool that works within existing delivery and accountability frameworks, meaning – importantly – that it offers a good prospect of delivery within a reasonable timeframe.

Infrastructure assets are attractive to long-term investors because of their capacity to generate long-run, high-quality cash flows that can be hypothecated to fund the asset's construction and operation. The same features enable assets to be financed on a standalone basis where balance sheet capacity is constrained. This can allow critical projects to be accelerated while creating intergenerational equity.

Beneficiary-pays and value-capture tools are an important part of the funding mix for growth infrastructure, because they align cost and benefit, and can help to shape incentives – for example to increase capacity/reduce costs through demand management, or to alleviate housing supply and affordability issues by incentivising development.

### Adding the missing pieces

The ideal solution to the infrastructure deadlock would address the structural constraints as well as incentives.

#### Start with finance.

We need a tool to enable growth to fund growth far more flexibly and efficiently. Key features would be:

- capable of being used by different delivery agents in both the central and local government sphere
- enabling access to long-term cashflows that can be generated by infrastructure assets, and
- a robust and replicable transaction structure.

Funding options such as beneficiary pays or value capture should be assessed as part of the solution, both for efficiency and for their ability to shape incentives.

#### Next, coordination and know-how.

New Zealand has long had centralised agencies (generally as part of the Treasury) that act as PPP preparation units or put together long-term infrastructure pipeline documents.

Increasing complexity, new risks and constraints (such as climate change and construction capacity), and new financing opportunities call for enhanced capabilities and more coordination and engagement on best practice. Ideally, institutional arrangements would also build on the central and local government partnering that is evident in, for instance, the Auckland Transport Alignment Project (ATAP) and City Rail Link (CRL).

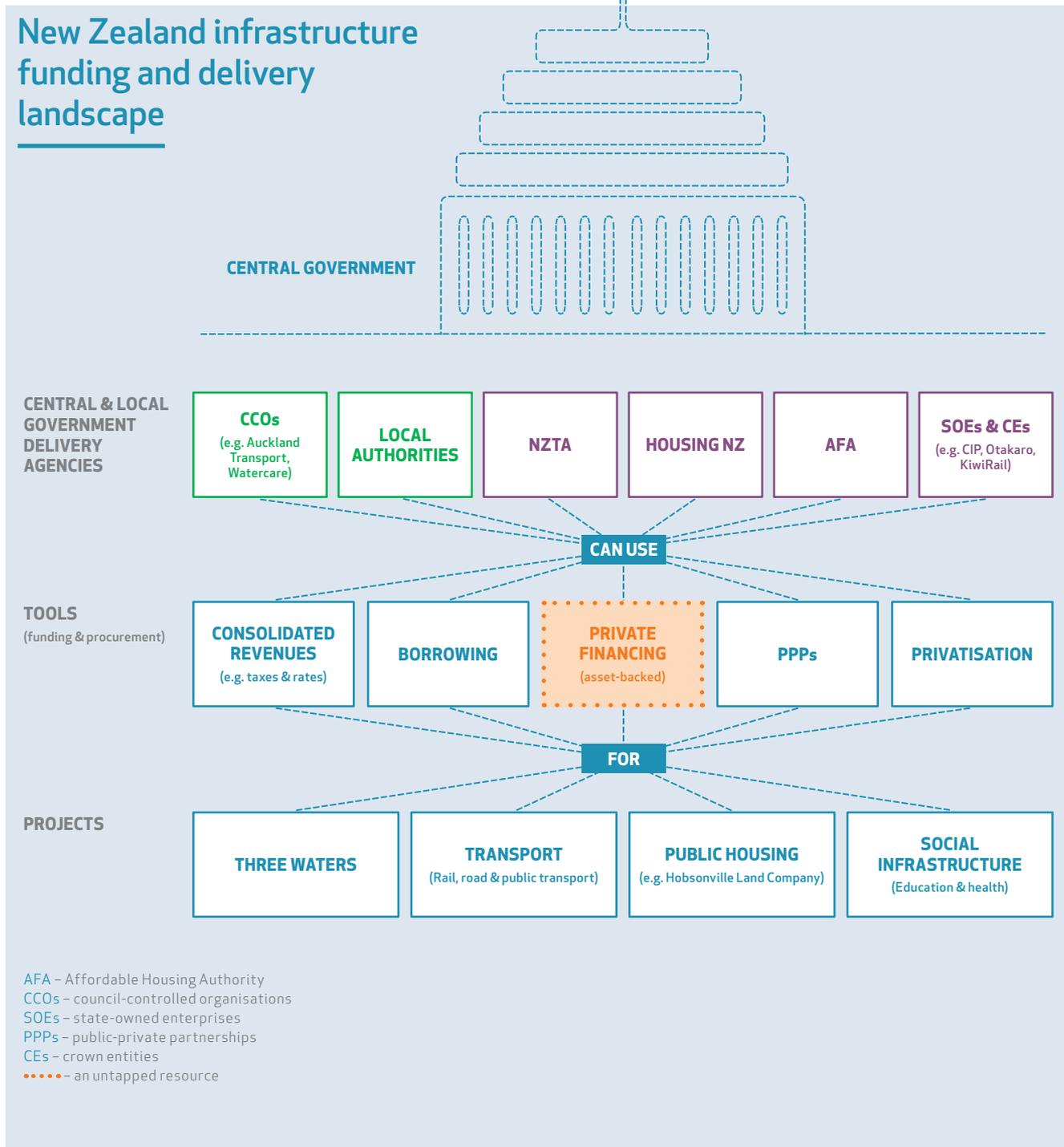
Private financing – ideal for infrastructure investment (continued)

## Infrastructure financing – options and constraints

There are a variety of options for financing infrastructure.

Option	Analysis
<b>Raise general rates</b>	Not a fair or efficient tool for funding long-life assets as they sheet all the costs to current ratepayers when the benefits will be shared by future generations. Not always feasible, e.g. in Queenstown where a small rating base (around 16,000 households) has to support a large tourism industry.
<b>Development contributions and targeted rates</b>	Tools such as development contributions help in allocating cost of infrastructure to its beneficiaries, but provide little certainty about the timing of revenues, can discourage or defer development, and fail to spread costs of long-life assets through time. Targeted rates address the last issue but can only be leveraged to fund capital expenditure if the council has balance sheet headroom.
<b>Borrow on balance sheet</b>	This passes the efficiency test but (at least for high growth area councils) not the feasibility one, because the ability to borrow is tightly circumscribed by financial ratios built into council trust deeds, arrangements with the Local Government Funding Agency, and credit ratings.
<b>Central government delivery or borrowing</b>	The feasibility of this as a ‘quick-start’ solution for housing-enabling infrastructure is doubtful as it would require substantial change to current delivery and accountability structures. On-lending by central government to local authorities is subject to the same constraints as apply to other borrowing. An Urban Development Authority could help deal with some of these issues but will take time to get off the ground.
<b>Privatisation</b>	Politically charged.
<b>Allocation of GST</b>	Local Government New Zealand has been pushing this for some while but has been rebuffed by Central Government.
<b>Regional Taxes</b>	Require consent from Central Government, which is rarely given because of the potential for political blow-back.

Private financing – ideal for infrastructure investment (continued)



# A regulatory response to the infrastructure challenge

## The focus of the Government’s regulatory response to infrastructure delivery is very much urban, in particular, housing.

Policies it has committed to are establishing a National Urban Development Authority (UDA), removing the Auckland rural-urban boundary and freeing up density controls.

### UDA

Environment Minister David Parker has promised to have a Bill in the House before the end of this year to establish a UDA, but the detail remains sketchy.

His most comprehensive statement to date on the subject is that it will have “special powers in relation to large projects to ensure that the right infrastructure networks and amenities are in place to promote thriving communities”.

UDAs have proven effective in other jurisdictions, including Australia, Canada, Britain and states within the USA. They can be used to equal effect for greenfield developments and for urban renewal and intensification.

A key value they offer is the ability to agglomerate land for developments of scale, generally involving a right to compulsory purchase. This would fill a gap in the existing legislative toolkit and provide a powerful instrument to deal with land-banking.

The compulsory acquisition powers under the Public Works Act 1981 can be invoked for essential network infrastructure such as roads and generation facilities, and may be available through Housing New Zealand for social housing. However, they have never been used to release land for mixed residential subdivisions.

The Productivity Commission advocated UDAs in both its 2015 *Using land for housing* and its 2016 *Better urban planning* reports. The previous National Government took up the idea, issuing a discussion document on the design options in February 2017. It attracted 112 submissions, most of which were generally positive.

It is unclear whether Labour’s proposal will be based on the Productivity Commission’s work. The Minister has indicated a general intention to reinstate appeal rights to provide for public participation in Resource Management Act (RMA) matters, but that might slow down the ability to respond to the housing crisis.

### UDAs have proven effective in:



AUSTRALIA



CANADA



BRITAIN



USA

## A regulatory response to the infrastructure challenge (continued)

### Capacity to move ahead of the UDA

Housing Minister Phil Twyford has indicated that the Government may direct local councils – in particular, Auckland – to advance an urban growth agenda.

The RMA allows central government to direct local government through the use of a National Policy Statement (NPS). The Government could either issue a new NPS or amend the existing NPS on Urban Development Capacity.

Instructions might include making more land available for residential development outside current rural-urban boundaries or relaxing height, parking or density requirements to allow more new housing within existing urban areas.

### The RMA

The RMA has never been settled law, probably reflecting the nature of its role as a mediator between two public goods – economic development and environmental integrity. Since its passage in 1991, it has been amended at least once in each term of government.

Those amendments have pursued two broad themes:

- to allow for more direction from central government, and
- to speed up consenting and processing times.

Parker thinks National went too far, particularly in the 2017 RMA Amendment Act, and is committed to rolling back the “worst” of those changes in a Bill this year. He also regards the Purpose and Principles in Part 2 of the RMA as sacrosanct and wants to ensure that opportunities remain for “meaningful public participation”.

He is set to maintain the reform momentum followed by previous governments and is on record that the RMA and the broader planning system could still use “improved national direction and substantially improved processes”.

Thus far, the Minister has announced the creation of an RMA Oversight Unit, designed to improve the consistency of practice across councils and has released draft National Planning Standards for public input.

The first set of National Planning Standards are relatively innocuous with little substantive content – addressing the structure and form of planning documents and greater use of ePlans. Probably of greatest interest to business are the list of District Plan zones and compulsory definitions.

The RMA does provide for further sets of Standards to be produced and there is enthusiasm for a more consistent approach across the country. But whether that translates into more Standards remains to be seen, given the difficulties of getting broad agreement on such issues.

**“The RMA has never been settled law, probably reflecting the nature of its role as a mediator between two public goods – economic development and environmental integrity.”**

# Strong investment response key to emissions reduction

Where there is risk, there is also opportunity, so Climate Change Minister James Shaw is right to talk up the opportunities attached to emission reduction, particularly in the area of technological innovation.

And there is a growing willingness to engage in the business community, as evidenced in the formation of the CEO-level Climate Leaders Coalition and in the results of a recent Westpac-commissioned survey showing 70% support among leading business people for action on reducing emissions.

But this will require businesses to make some very large decisions, often on the basis of uncertain information and in circumstances where they could be upended by unforeseen and, at this stage, scarcely-imagined new technologies.

So, as the policy activity around climate change shifts toward top gear, infrastructure investors and providers need to understand what is on the horizon and to build it into their business and risk management strategies.

This applies in equal measure to the custodianship of existing assets and to identifying new investment prospects. The obvious place to start is the Productivity Commission's inquiry into the transition to a low-emissions economy.

## The Productivity Commission prescription

The Commission considers that we can achieve net carbon neutrality by 2050 through the deployment of:

- a significantly-increased carbon price to galvanise behavioural change
- mass electrification of the transport and industrial process sectors, which could more than double demand for electricity by 2050
- changes to the technology and methods of agricultural production, and
- large-scale afforestation (another 1.3 million to 2.8 million hectares).

Clearly, each of these shifts will require massive infrastructure investment. And they do not take into account the destabilising and destructive effects of climate change, which will create their own set of infrastructure and other costs.

## Size of challenge almost impossible to overstate

Policy and climate change academics Jonathan Boston and Judy Lawrence talked about some of these in a working paper, released last year<sup>4</sup>. Some quotes:

- "Humanity faces a slow-motion disaster which will grow in scope and scale progressively, yet sometimes abruptly. The impacts will include ongoing rising sea levels, more severe droughts, storms and rainfall events, biosecurity risks, loss of biodiversity and changing disease vectors."
- "The value of assets in coastal areas exposed to sea level rise is estimated to be in the billions of dollars. Equally, the annual cost of repairing land transport networks damaged by weather-related events has more than quadrupled over the past decade, while the economic impact of major floods and droughts is also increasing", and
- "Tens of thousands of people – and perhaps more – will eventually need to be relocated and resettled, and large investments will be required to redesign, reposition and future-proof public infrastructure, especially transport networks and water services."

<sup>4</sup> The Case for New Climate Change Adaptation Funding Instruments, August 2017.

**Strong investment response key to emissions reduction** *(continued)*

**Government contribution**

The primary contribution the government can make is to maintain a political consensus on the policy response and the transition path. Encouragingly, there are early signs that this message may have got through.

The National Party has indicated a willingness to support the Climate Change Commission and the Zero Carbon Bill which, if forthcoming, could lift climate change policy above the vagaries of the electoral cycle.

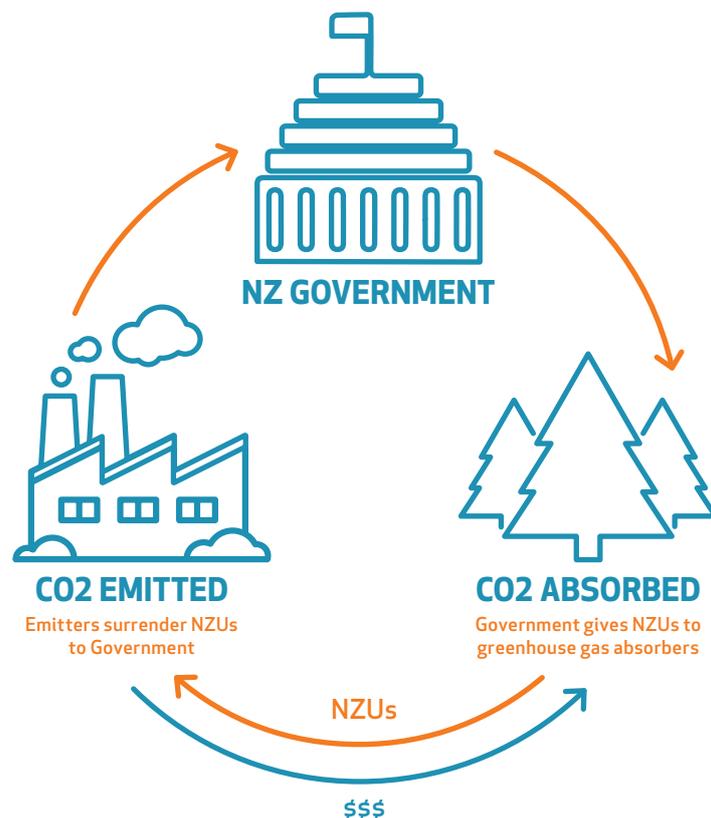
Other factors which will be important to provide planning stability are:

- funding arrangements that are perceived to be fair across and within generations and across sectors, and
- transparency and consultation in policy formulation.

The Government’s present performance across all three of these elements is reasonably good but there is work to be done on ensuring that the country has an adequate adaptation plan to cope with the effects of climate change, including to the infrastructure network.

This may be provided for at the national level in the Zero Carbon Bill. There may be value in requiring adaptation plans also at the local authority level.

**NZ emission unit trading (NZUs)**



Source: Ministry for the Environment

## Strong investment response key to emissions reduction (continued)

### Engage, engage, engage

There is a lot going on in the policy area right now.

The big initiative is the Zero Carbon Bill, which is expected to set the reductions target, create a system of rolling five-year carbon budgets out to 15 years, and establish the parameters for the Climate Change Commission's relationship with the government of the day, including whether it should have an advisory-only role or be able to make decisions.

There is also the Emissions Trading Scheme (ETS) review, aimed at giving the ETS sharper teeth.

Both will change the legislative and regulatory landscape in which business operates so it is important that the business voice is heard in the design stages.

### WHAT THIS ALL MEANS FOR BUSINESS

To manage the multiple challenges of climate change successfully, businesses will need to exercise boldness and nerve. They will also need to be well-informed about what is happening in the worlds of science and innovation to cope in what will be a highly volatile environment.

To allow these qualities to flourish will require a significant and sustained effort, supported by appropriate resourcing at the right levels in the organisation.

The following are some questions that might be helpful to consider now.

- What does climate change capability look like for your business – is it adaptation, avoidance, better resilience or event-based contingency planning?
- Are you up to the task or should you move now to escalate your effort?
- How informed is your leadership team?
- Do you have a clear understanding, based on the best available information, of the potential impacts on your business of climate change as a meteorological phenomenon and of carbon pricing and other policy levers the government may deploy to encourage emissions reduction?
- How integrated are these issues into your business plan and long-term strategy?
- How should you manage your stakeholder communications, given the likelihood that the government will pick up the Productivity Commission's recommendation that climate change reporting become mandatory for major corporates?

# Construction sector – feeling the heat

## New Zealand’s longest-running construction boom may have just got longer.

The Ministry of Business, Innovation and Employment (MBIE) has pushed out its peak activity forecast to 2023 – from 2020.

MBIE expects the workload to remain at “current elevated levels” until the end of 2020 then to increase over the next two years, reaching \$41 billion by project value in 2023.

Such a large pipeline of work has the potential to put the construction industry in a position to escape the traditional boom-bust cycle and enter a more mature and sustainable mode.

Instead, there are signs that it is buckling under the heat-serious delays and losses on projects, a labour and skills shortage, reports that contractors are earning poor margins, difficulties obtaining bonds.

Stress factors, in addition to the wall of work, include:

- major capacity constraints
- sharply escalating input costs, and
- tough contractual risk allocation.

A challenge for contractors is to avoid a ‘race-to-the-bottom’ mentality – to stick to their guns and bid a reasonable margin and programme rather than succumbing to the ‘must win project’ mindset, which is fraught with risk.

### Capacity issues

The construction sector has been hit by a number of high-profile failures in recent years:

- Mainzeal went into liquidation in 2013
- Fletchers pulled out of the vertical construction market following significant losses, and, most recently
- Ebert Construction Limited collapsed.

This, together with continuing high demand, has led to the entry of international players into the New Zealand market such as CPB, China Machinery Engineering Corporation and China Construction.

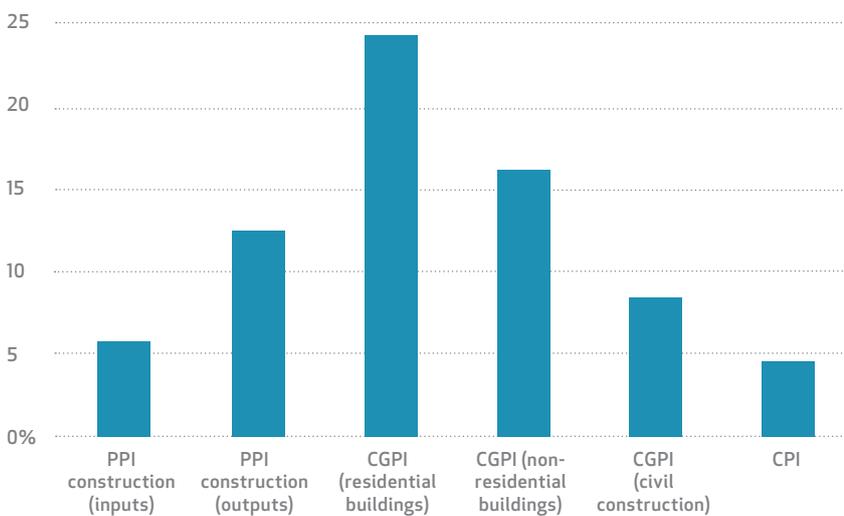
It has also created opportunities for mid-sized contractors such as Fulton Hogan, Naylor Love, Dominion and Leighs – to name a few. And Hawkins has received a capital injection via its acquisition by Downer Group which should bolster its ability to compete at the top of the market.

The net effect, however, is a massive building industry shortfall which cannot be fixed overnight. It will be a major – no, a critical – challenge to build the material capacity to meet New Zealand’s development aspirations.

Construction sector – feeling the heat *(continued)*

Cost escalation

Percentage change (over last five years)



Producers price index (PPI) – construction input index measures changes in prices paid by producers in this industry for inputs such as raw materials

Capital goods price index (CGPI) – measures changes in prices of new physical assets such as residential and non-residential buildings

Consumers price index (CPI) – purchase of new housing index measures the change in price of buying a newly built house, excluding the land the house is built on

Source: Statistics NZ

The above highlights that construction cost related inflation has outpaced the Consumer Price Index by a considerable distance, particularly in the residential sector.

This is perhaps unsurprising given the current demand-supply relationship for construction services. But it is a major headache to owners and developers and has led to a number of developments – including residential – being shelved.

Tough contracts

Contractors are calling forcefully for changes in contractual risk allocation.

Some contracting techniques – such as novated design construction contracts, where the contractor takes over the owner’s design consultant team, completes the design with that team and takes responsibility for all design – have been heavily criticised.

The juncture we are at now – a large volume of work and a new government with new ideas – provides an excellent opportunity to consider how risks can be allocated to best serve the project. Can a more balanced approach be entertained?

It is important that New Zealand is seen internationally as a good place to execute projects – an employer of choice, if you like. This should go some way to alleviate the capacity pressures.

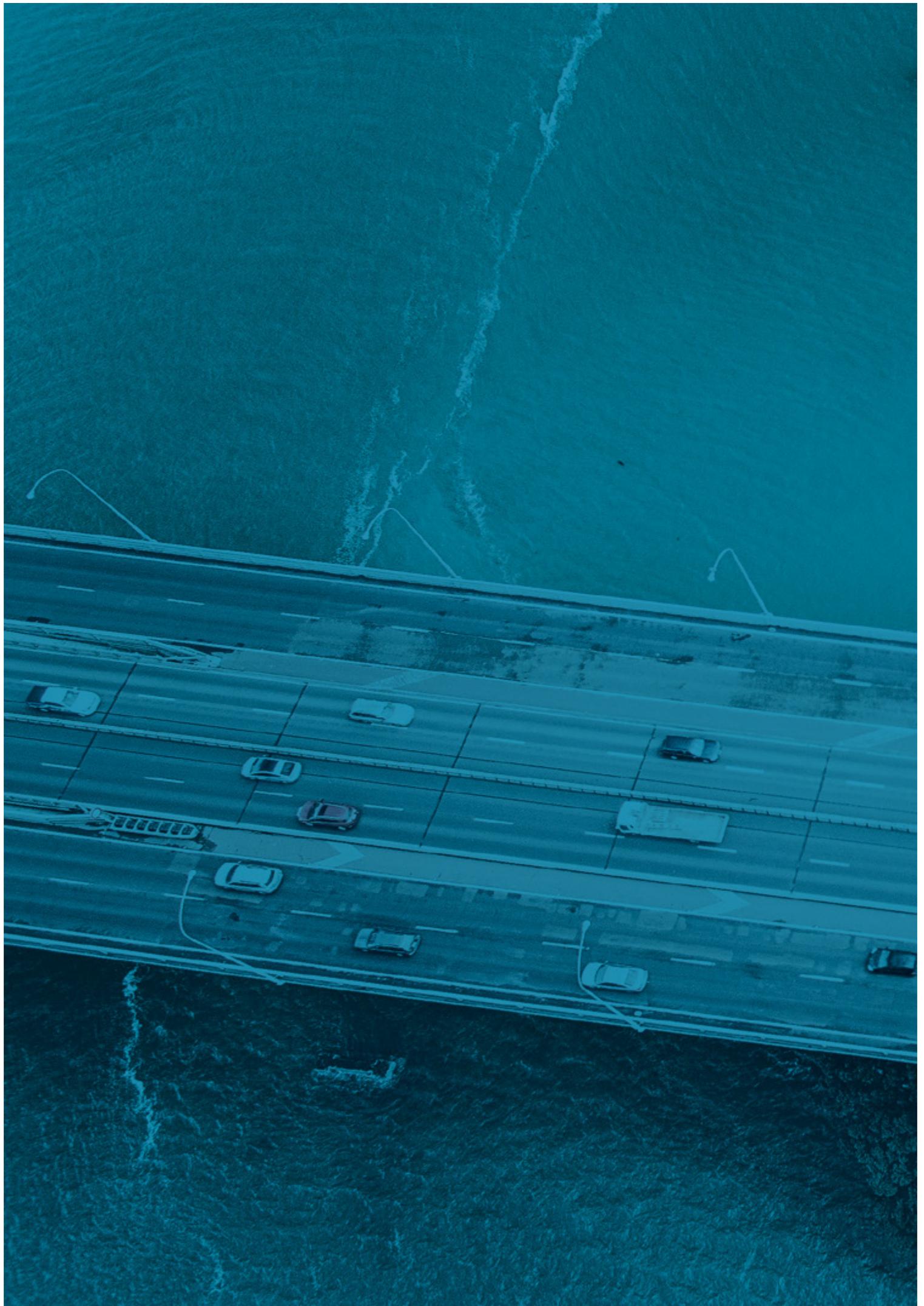
# Chapman Tripp's Infrastructure team

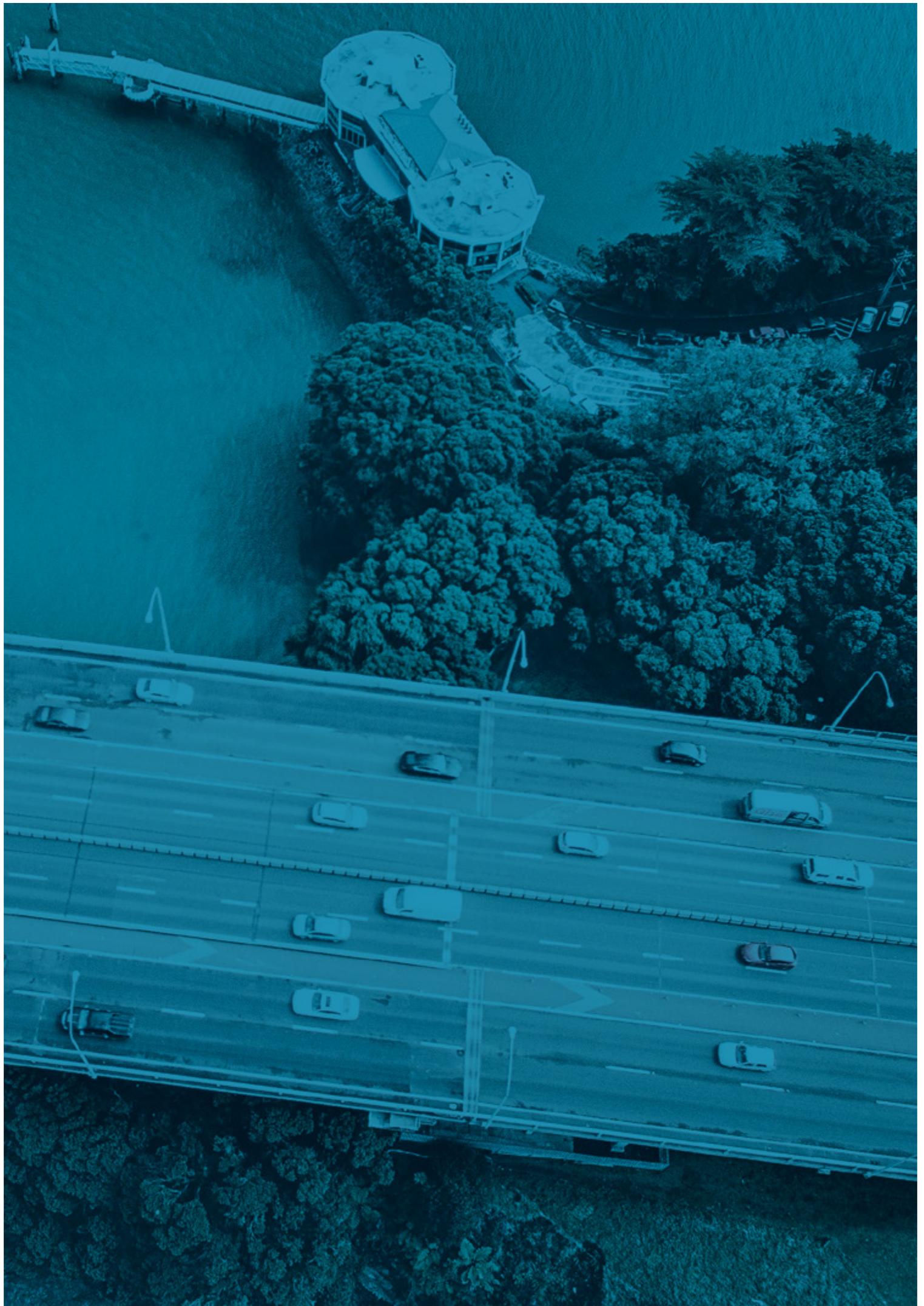
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**Chapman Tripp's infrastructure team helps to successfully deliver New Zealand's most complex and innovative infrastructure projects**

Our full service team brings together project financing, construction, resource management and other specialists as needed. We can take your project from conception to completion.

We are experienced in the utilities, transport, social infrastructure, mining, oil and gas, sectors and have worked extensively with both public and private organisations, within New Zealand and across the Pacific.





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