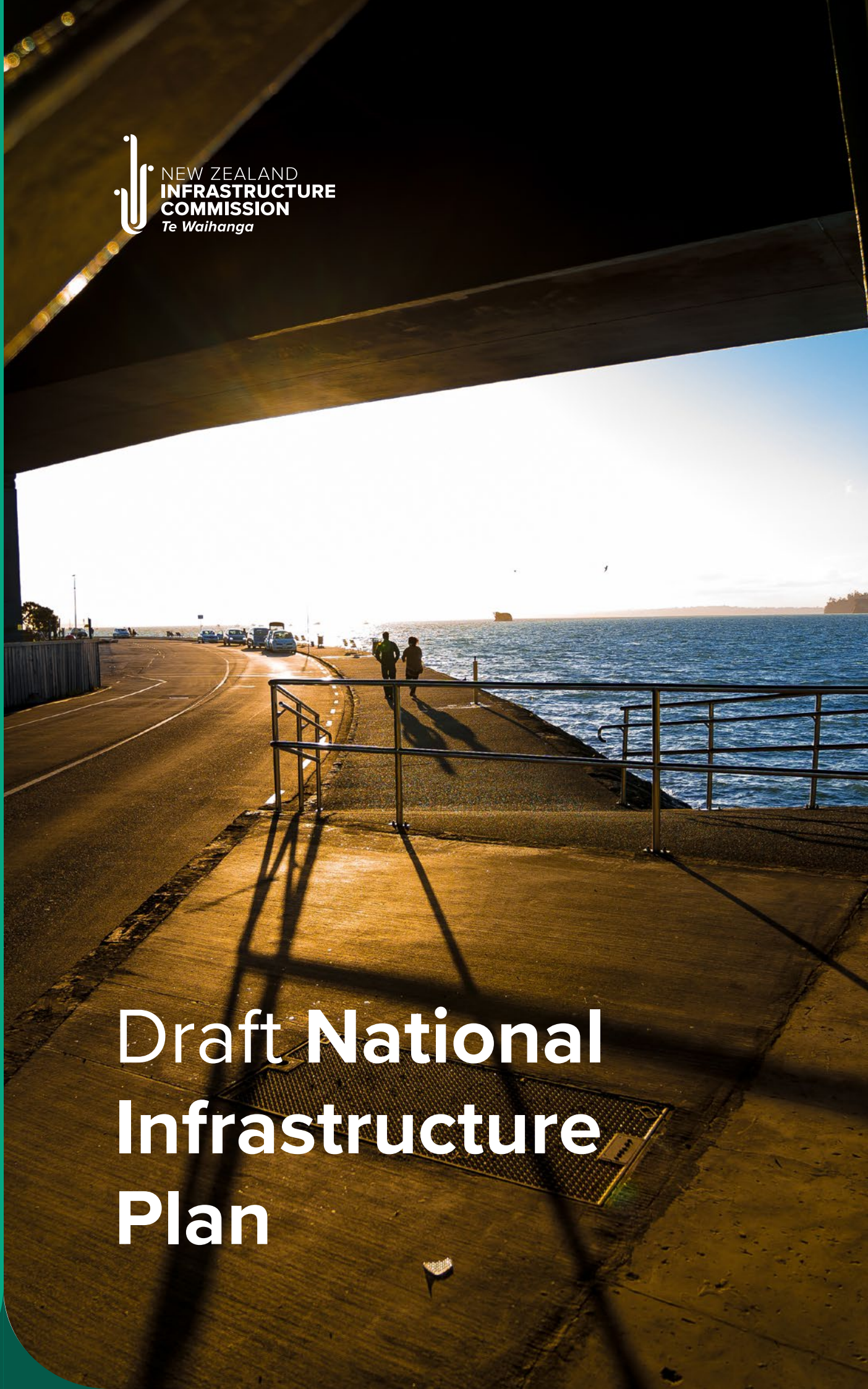

Draft **National Infrastructure Plan**

New Zealand Infrastructure Commission | Te Waihanga
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New Zealand Infrastructure Commission Te Waihanga

The NZ Infrastructure Commission - Te Waihanga seeks to transform infrastructure for all New Zealanders. By doing so our goal is to lift the economic performance of Aotearoa and improve the wellbeing of all New Zealanders.

We are an autonomous Crown entity, listed under the Crown Entities Act 2004, with an independent board. We were established by the New Zealand Infrastructure Commission/Te Waihanga Act 2019 on 25 September 2019.

Information on the Commission is available at www.tewaihanga.govt.nz/

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Contacts

E: info@tewaihanga.govt.nz

www.tewaihanga.govt.nz

LinkedIn: tewaihanga

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Executive summary
Whakarāpopoto Matua

New Zealand's future is intricately connected with its infrastructure

New Zealand has a formidable number of infrastructure needs.

Our cities need housing so that our children have a place to call home. Transport networks provide accessibility to jobs; and are essential to get goods to businesses and our doorsteps. Transmission and distribution lines carry the electrons that power our lights and heat our homes. A network of schools keeps our children learning, while hospitals take care of our sick. Other infrastructure is often less front of mind: court houses, police stations and correctional facilities are essential to the rule of law that makes commerce possible; and our defence estate and flood protection infrastructure stands by preparing for the worst.

Our infrastructure needs are intensifying.

We face rising costs to build and maintain infrastructure, along with rising expectations to provide better and more resilient services. Maintenance and renewal of what we've already got is our biggest investment driver, and it is amplified by natural hazards, like earthquakes and extreme weather, which damage infrastructure, and other risks, like cybersecurity, which make infrastructure harder to operate. At the same time, we need to keep building and improving infrastructure in response to a growing and ageing population, ongoing economic growth and international trade, technology changes, and the need to provide affordable and reliable electricity to decarbonise the economy.

We spend a lot but we're not getting value

We spend more than most on infrastructure.

Over the last 20 years, New Zealand spent an average of 5.8% of gross domestic product (GDP) on all types of infrastructure. That's around $4,500 a year for every person in the country, putting us in the top 10% of Organisation for Economic Co-operation and Development (OECD) countries for infrastructure investment over the last decade.

We don't get enough for our infrastructure dollar.

The quality of our infrastructure lags, relative to what we spend on it. High-level comparisons suggest that New Zealand is in the bottom 10% of OECD countries when it comes to the 'bang for buck' we get from our infrastructure spending.

It is difficult to build, maintain, and operate infrastructure.

Our small population and challenging landscape put us on the back foot to start with. We have a similar population to Greater Sydney but we're spread over an area 21 times larger. That can be a challenge to build infrastructure to the same standard as more densely populated countries, because we don't have as many people to use and pay for it. But we also put hurdles in our way. Our regulatory system is complex: we have 1,175 land-use zones across 68 territorial authorities. Japan has 13. We spend $1.3 billion every year just on consenting infrastructure. The cost of managing traffic during construction has surged in recent times.

The infrastructure sector struggles to navigate the swings and roundabouts.

Infrastructure planning is often short term and reactive, rather than long term and strategic. Projects are announced before it's certain that they're affordable and deliverable. Half of the large projects seeking funding through central government's annual Budget lack business cases to demonstrate that they're ready to fund. Maintenance funds, which should provide a steady, ongoing stream of work, may get diverted to new builds. Consequently, efforts to recruit, develop, and retain a skilled workforce are stretched.

We can lift our game

We can't build our way out of all our infrastructure challenges.

Household affordability is under strain while fiscal pressures are intensifying for government. New Zealand has been running structural deficits and with no changes, our net core Crown debt is forecast to reach approximately 115% of GDP in 2050 and continue to climb. Similarly, our fast-growing local authorities are nearing debt limits. These trends are driven, in part, from some big changes to New Zealand that will not relent. In 1960 we had seven workers for every retiree; by 2075 that ratio will be 2:1.

Investment must be affordable and deliver the right services in the right places at the right times.

We need to understand what we need, today and in the future. That means looking carefully at the infrastructure we've already got, how well we're maintaining it and how well we're using it. It means setting a high bar for new investment, ensuring that our ambition for improvement doesn't come at the cost of affordability or deliverability. And it means keeping a close eye on how we pay for investment.

It's time to get smarter about how we do infrastructure.

We cannot take it for granted that New Zealand will continue to have one of the highest infrastructure spends among OECD countries. To sustain high-quality infrastructure services, we need to lift our game. That could be by reducing costs or easing the regulatory environment. It might also mean taking a more commercial approach to infrastructure whereby we vastly lift the bar on project quality, finding new projects that households and businesses will be willing to pay more for.

Consensus is needed.

Infrastructure needs to adapt to changing demands. Growth won't always happen in the places we're expecting it. Earthquakes and extreme weather will damage infrastructure and force us to rebuild. The projects we're choosing will change over time. But the overall approach we're taking to infrastructure investment should be well-understood and broadly agreed. That means investment decisions that are durable and executed with greater stability.

Our focus is on the public sector

We look across central government, local government, and commercial sectors.

Many organisations are involved in providing New Zealand's infrastructure. The infrastructure sector includes a complex 'alphabet soup' of government agencies, local government entities, regulated utilities, state-owned enterprises, council-controlled organisations, and commercial businesses. Infrastructure providers have a variety of governance, decision-making processes and funding models.

To get it right, we need the public sector to step up.

Central government is New Zealand's largest owner and funder of infrastructure and it sets the 'rules of the game' for other sectors. It accounts for 40% of our total stock of infrastructure and almost half of all infrastructure investment each year. It sets up oversight and accountability mechanisms for local government and commercial entities, for instance by tasking the Commerce Commission with regulation of monopoly infrastructure providers.

Central government's approach to building and maintaining its infrastructure stands out.

Unlike local government and commercial entities, central government oversees its own performance through the Investment Management System, which is a part of the overall Public Finance System. But while it sets rules for itself, it doesn't always live by those rules. Central government decides on what to invest based on how much it can spare in its Budget, instead of needs and the quality of potential projects. Half of all proposals for investment in both the 2023 and 2024 Budgets did not have a business case. Over half of all capital-intensive agencies do not have robust, comprehensive asset registers in place or adequate plans for looking after existing infrastructure.

There's a role for everyone.

Central government needs to lift its game, but others need to be on the field as well. Local government and commercial entities are each responsible for around one-quarter of New Zealand's infrastructure investment. A largely private sector workforce of over 100,000 people is involved in designing and building new infrastructure and maintaining it once we've got it. Iwi and Māori entities are involved in infrastructure as investors, asset owners, and suppliers. Crown-Māori relationships also play a role. While there is ongoing discussion regarding what the Treaty of Waitangi / Te Tiriti requires there is generally agreement that Māori and government infrastructure providers are obliged to act respectfully, collaboratively, and that decisions are made only after genuinely listening to what others have to say.

In the National Infrastructure Plan we make 19 recommendations that fall into four areas:

- establish affordable and sustainable funding – 5 recommendations
- clear the way for infrastructure – 7 recommendations
- start with maintenance – 3 recommendations
- right-size new investment – 4 recommendations.

We've focused on these four areas because if we get them right many of our other infrastructure challenges will be addressed too. A brief overview of each of these areas follows.

Establish affordable and sustainable funding

The National Infrastructure Plan provides a fundable and coordinated view of our infrastructure spend.

It outlines what is needed to ensure that we're investing the right amount of money in infrastructure, relative to what we're willing to spend as a country, and balancing spending between different sectors and needs. This is termed 'forward guidance'.

Investment must increase to meet future demands.

Based on trends over the last 150 years, and future scenarios for demographic change, economic growth, and climate change, New Zealand can expect to spend between 5% and 7% of GDP on infrastructure every year. This means that as our population and economy grows, we must spend more to keep up.

The mix of spending will change as our economy and society changes.

Based on what infrastructure we've already got, around 60% of investment should be directed towards renewing and replacing existing infrastructure as it wears out. That leaves around 2% to 3% of GDP for new infrastructure, including around 1% of GDP spent by central government. In the future, renewals are likely to take up a larger share of the budget, especially in places that experience slowing population growth. Long-term trends will boost demand for some types of infrastructure and flatten it for others. For example, an ageing population will need more hospitals and fewer schools, relative to a younger population.

Pricing and funding approaches should ensure we get enough investment in all sectors.

We differentiate between infrastructure services that can pay for themselves and those that cannot. Network infrastructure, like transport, water, electricity, and telecommunications, is different from social infrastructure, like schools, hospitals, courts, prisons, public parks and open spaces, and the defence estate. Network infrastructure usually has opportunities to fund itself by charging people who use the infrastructure or directly benefit from it. But funding from general taxes or local government rates is usually needed to guarantee consistent and equitable access to social infrastructure.

When network infrastructure and 'nice to haves' are better at funding themselves, more money is available to invest in social infrastructure.

Central and local government have limited tax and rates revenue for investment, so when the cost to provide roads, water pipes, and stadiums spills over into general tax or rates revenues, less is available to invest in social infrastructure.

Long-term investment planning, backed up by funding decisions, is essential for government investment.

The existing approach means central government agencies' investment planning is divorced from what's affordable, while decisions about how much to invest over the longer-term are limited by top-down fiscal constraints rather than being guided by needs.

The National Infrastructure Plan presents five recommendations for ensuring that we are able to pay for our long-term infrastructure needs.

These recommendations identify how we can price and fund infrastructure across all sectors, ensuring that our means match our needs.

Clear the way for infrastructure

The National Infrastructure Plan outlines how we can clear away the hurdles facing infrastructure investment.

It calls for a persistent effort to improve the operating environment for infrastructure and build up the capacity and capability of our infrastructure workforce to build and maintain the infrastructure we need. It is often too expensive to deliver infrastructure in New Zealand, too difficult to make best use of the infrastructure we already have, and too difficult to coordinate organisations.

Consumer interests must be protected.

Sound oversight mechanisms are crucial for maintaining public confidence in infrastructure providers. Maintaining consensus on investment means being transparent about investment and asset performance and accountable for good performance. Where there's a need to work across infrastructure sectors, spatial planning can help to coordinate infrastructure and other land uses.

We need efficient legislation and regulations that better serve New Zealanders.

At present, our land-use rules often prohibit development in the very areas where infrastructure is most cost effective: Limitations on concerts mean stadia cannot generate the revenue to cover depreciation. Poor transport pricing means we build costly peak capacity that isn't used at other times. A key area for improvement is the resource management system, which has significant impacts on how we can build, maintain, and operate all types of infrastructure.

Infrastructure providers benefit from predictable processes for reviewing and changing policies.

When key policies, from resource management legislation to energy market and emissions reduction policies, are frequently 'chopped and changed', it disrupts investment. Infrastructure providers may hold off until policy settles down, leading to a backlog of investment and extra congestion on networks.

We need to invest in our people.

The infrastructure workforce must grow to meet our future needs, looking beyond the short-term project cycle. In the context of an ageing society, we need to establish broader pathways into the workforce that draw upon the talents of all New Zealanders. And government must act as a sophisticated client of infrastructure, building up its own capability for project leadership to enable it to engage with the market.

The National Infrastructure Plan presents seven recommendations for improving the operating environment for infrastructure investment.

These recommendations identify steps we can take to enable us to clear the way for delivery.

Start with maintenance

The National Infrastructure Plan identifies a need to fund maintenance and renewals first.

Nothing is more certain than maintenance and renewals. Some of our most important and essential assets are already around us. Keeping them going is among the most important tasks before us. This requires funding. Without it, access to services will be lost or levels of service will decline.

Deferred maintenance should not be allowed to turn into future infrastructure deficits.

We're already lagging in this area. The OECD ranks New Zealand fourth to last for asset management practices, relative to our peers. That looks like schools with leaking roofs, lessons taught in rotting buildings; sewage leaks in our hospitals; mouldy, poor quality defence accommodation; service outages of commuter rail and ferries; and police stations with black mould, leaks, and asbestos. We can do better. And if we do – the reward is more resources available for other needs and new services.

The cost of responding to natural hazards is rising.

New Zealand already faces some of the highest natural hazard costs in the OECD, and climate change will push up costs from extreme weather. Protecting infrastructure against risks is an asset management challenge. Asset owners need to respond to natural hazards that can damage infrastructure, as well as other risks, like cybersecurity threats. Although large, costly events may be relatively infrequent, the costs of responding to them or proactively building in resilience are part of the long-term cost to provide infrastructure assets. When a disaster happens, renewals that might otherwise have been required years or decades later will need to be brought forward.

We need to understand what we've got and what's needed.

The first rule of asset management is to understand your assets. This will enable central government agencies to outline their future investment needs and set aside enough money to ensure they can be met. Transparency and independent review can help to ensure that we're doing the work that needs to be done.

The National Infrastructure Plan presents three recommendations for lifting the bar on asset management for central government infrastructure.

These recommendations identify steps we can take to prioritise funding for the services we already rely on.

Right-size new investment

The National Infrastructure Plan lays out an approach to optimise central government's investment in new infrastructure.

In the context of our maintenance needs and fiscal constraints, we need to carefully prioritise what we're building. This means focusing on funding projects when they're aligned with our long-term needs, right sized, and ready to deliver.

Information on projects currently in planning is a key component.

Based on information submitted to the National Infrastructure Pipeline by over 110 contributing organisations across central government, local government, and commercial entities, we outline upcoming infrastructure investment choices across the infrastructure system. We reflect back what's already happening, rather than proposing new projects.

All the listed project options require evaluation.

The draft Plan presents information on approximately 140 projects valued at above $100 million that are currently in planning. But projects on this list are not always ready to fund. They must develop business cases in line with relevant requirements before decision-makers can formally approve funding and delivery. They must navigate existing governance arrangements, which differ for central government, local government, and commercial entities.

Large transport projects pose the biggest upcoming choices.

Most of the value of unfunded projects in the Pipeline comes from a small number of large projects, mostly in land transport. Only 33% of the value of large projects have a confirmed funding source (compared to 78% for small projects). Choices about funding these projects will therefore have a large impact on what else we can afford to do.

The Infrastructure Priorities Programme provides information on readiness for some large projects.

A select set of projects have been voluntarily submitted to the first round of a standardised and independent assurance process that gives a view on whether projects are ready for funding, or whether they need further investigation. The first round of assessments closed in December 2024. We received 48 submissions from central and local government, the private sector, and other entities. The Commission endorsed 17 proposals across a range of sectors, including transport, water and wastewater, telecommunications, prisons, and the defence estate.

Improved prioritisation across the full portfolio is possible.

The continued application of the Infrastructure Priorities Programme will, over time, give central government decision-makers the information needed to robustly prioritise large projects. Enhancements to the National Infrastructure Pipeline will improve visibility and transparency for both small and large projects, enabling coordination across different public infrastructure sectors.

The National Infrastructure Plan presents four recommendations for lifting the bar on new projects undertaken by central government.

These recommendations identify steps we can take to lift the quality and transparency of project planning.

We can have better infrastructure

The National Infrastructure Plan is ambitious about the future of New Zealand's infrastructure.

The challenges we face may seem daunting. But for every problem, there is a solution. Our needs sometimes seem like they will outstrip the money that's available. But to paraphrase the New Zealand physicist Ernest Rutherford, when we don't have money, we have to think.

Ambition looks different for New Zealand.

Quality infrastructure looks different in a small, spread-out country than it looks in a large or densely populated country. And an ageing population and climate change mean future success will look different to the past. Ambition looks like funding our hospitals properly to catch up on the maintenance backlog and catering for the growing needs of an ageing population. It means a transport system like Finland or Sweden, who spend less but get better, safer roads and better public transport in return. Ambition looks like a massive increase in renewable electricity generation to power our economy and slash our carbon emissions – and it means making that affordable for New Zealanders. Ambition means setting high standards for ourselves so we get the projects right and protect funding for maintaining and renewing what we've already got.

It's time to get on with it.

It's time to start fixing up our essential infrastructure assets, rather than seeing them breaking under our feet because we didn't set aside money for maintenance. It's time to invest in infrastructure that will lift our productivity and cut our carbon emissions. It's time to do new projects right, rather than dreaming big and seeing them constantly delayed, rescoped, and cancelled because they're too big for us to afford. It's time to set out a path that will keep our skilled workers employed here in New Zealand. And it's time to move forward together, so we can all have better infrastructure.

We want your feedback

The National Infrastructure Plan is a collective effort.

The draft National Infrastructure Plan reflects our thinking on how the final Plan will look. It reflects the work that we've done to date and the feedback we've received over the past year, including through our 'Testing our thinking' discussion document.

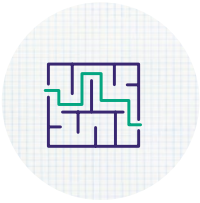
The draft Plan, however, is very much a working draft.

In finalising the Plan our focus will now turn to setting out implementation pathways for recommendations. We are keen to get your feedback – what have we got right or are there issues you think we've missed? You can have your say by completing our online feedback form: **https://tewaihanga.govt.nz/national-infrastructure-plan/feedback-on-draft-national-infrastructure-plan**

Our recommendations for change

Establish affordable and sustainable funding

- **Funding pathways:** Funding tools are matched to asset type—user-pays for network infrastructure, commercial self-funding for economic-development assets, and tax funding for social infrastructure—to keep the overall capital envelope affordable. User-pricing principles are applied across all network sectors so user charges fully fund investment, guide efficient use of networks, and distribute the benefits of network provision.
- **Transport system reform:** The land-transport funding gap is closed by requiring user charges to fully fund planned investment.
- **Needs based government investment:** Fiscal strategy is informed by infrastructure investment and asset management planning and the New Zealand Infrastructure Commission's independent view of long-term needs.
- **Stable central government funding:** Multi-year Budget funding is available for central government agencies with strong planning, delivery, and asset management practices.
- **Sustainable investment:** Forward guidance is refreshed through quarterly updates to the National Infrastructure Pipeline and ongoing updates to the Infrastructure Priorities Programme and the Infrastructure Needs Analysis.



Clear the way for infrastructure

- **Consumer protection:** All infrastructure providers, regardless of sector have clear and well-understood transparency and accountability mechanisms that ensure that consumer interests are protected.
- **Spatial planning:** Under the new resource management system, spatial planning informs and is informed by infrastructure investment and asset management planning and the New Zealand Infrastructure Commission's independent view of long-term needs.
- **Maximising use:** Land-use policies enable new and existing infrastructure to be used by as many people as possible.
- **An enabling environment:** The resource management system enables infrastructure with national and regional benefits, while managing interactions with surrounding land uses and negative impacts on the natural environment.
- **Policy stability:** Energy investors have predictable policy and consenting settings that support affordability, security of supply, and the decarbonisation of our economy.
- **Workforce development:** Workforce development planning and policy is informed by infrastructure investment and asset management plans and the New Zealand Infrastructure Commission's independent view of long-term needs.
- **Public sector capability:** Public sector project leadership is strengthened by standardising role expectations and improving career pathways.

Start with maintenance

- **Asset management and investment planning:** Central government agencies are legislatively required to prepare and publish long-term asset management and investment plans.
- **Performance reporting:** Central government agencies are legislatively required to report on performance against their asset management and investment plans.
- **Asset management assurance:** Central government agencies' asset management and investment plans are independently assessed.

Right-size new investment

- **Investment readiness assessment:** All Crown-funded infrastructure proposals pass through a transparent, independent readiness assessment before funding.
- **Project transparency:** All business cases, Budget submissions, and advice on central government infrastructure investments are published.
- **Risk management:** Project assurance for central government agencies ensures that risks are well managed.
- **Learning from projects:** Post-completion information on actual project costs, delivery dates and benefits are provided and published in a standard format, enabling comparisons to what was expected when funded.

1 We can find common ground

Ka kitea e tāua he ōritetanga

Infrastructure issues that are less in need of debate

Ngā take tūāhanga kāore i te tino tohea

Summary

- Infrastructure enables vital services that support our wellbeing, drive a productive and sustainable economy, and help achieve broader social and environmental goals. But these benefits come with significant and lasting costs. Investment decisions are often irreversible, span generations, and need to be future-focused.
- A range of public and private organisations are involved in providing New Zealand's infrastructure.
- A significant distinction between public and private infrastructure ownership is that the public sector tends to balance multiple outcomes (such as health, education, and mobility), whereas private and corporate owners focus on achieving commercial returns through maintaining asset value and performance.
- Maintenance and renewal are New Zealand's greatest investment challenges, accounting for most of forecast spend.
- These challenges are amplified by natural hazards, like earthquakes and extreme weather, which damage infrastructure, and other risks, like cybersecurity, that make infrastructure harder to operate.
- New capital investment will also be necessary. New Zealand will need to keep building and improving infrastructure in response to changing needs.
- New Zealanders pay for infrastructure in three main ways: user charges, local government rates and central government taxation.
- Despite high levels of spending among the highest per capita in the Organisation for Economic Co-operation and Development (OECD) New Zealand often struggles to get value for money from its infrastructure investment. Underlying drivers of poor value include fragmented planning, regulatory inefficiencies, complex approval processes and suboptimal use of existing assets.
- We've identified key factors that are critical to sustaining agreement on infrastructure investment: affordability, balance, deliverability, and transparency and accountability. The draft Plan presents our initial advice on New Zealand's future infrastructure needs and how to meet them.
- We're seeking feedback on the draft Plan, which will be used to help inform the final Plan that will be delivered to the Government in late 2025.

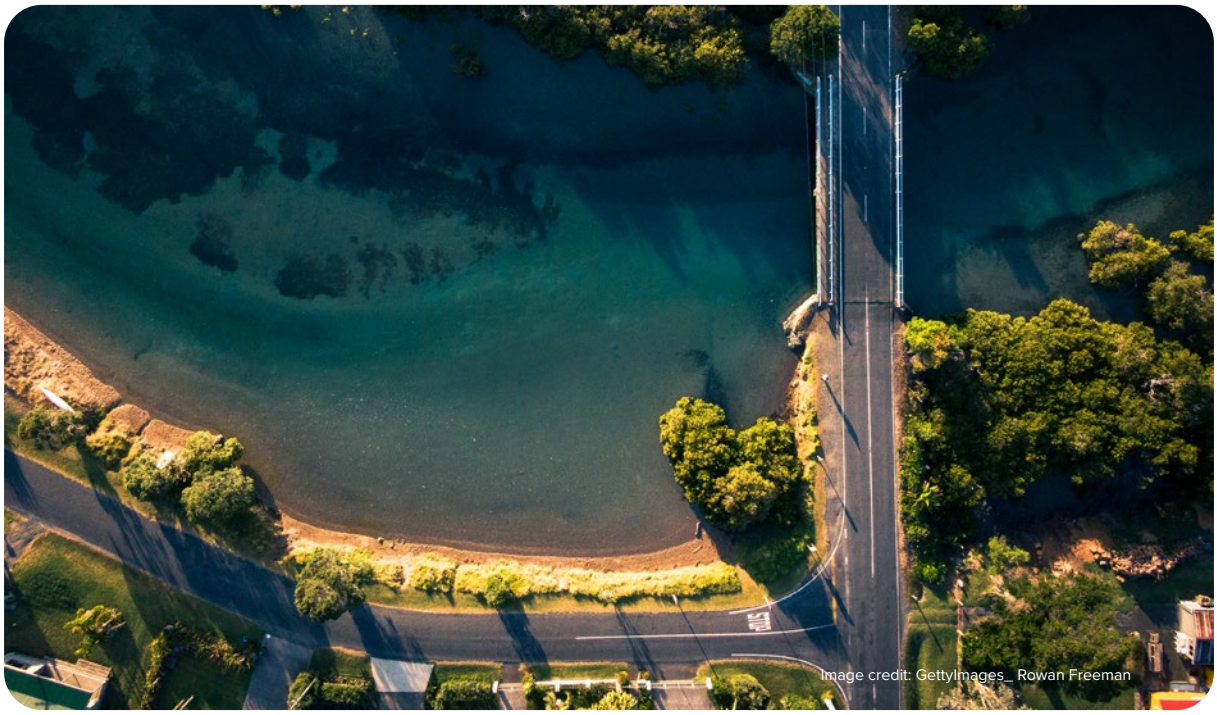


Image credit: GettyImages_ Rowan Freeman

1.1. Infrastructure is about services

Ko ngā ratonga te pūtake o ngā tūāhanga

1.1.1. Infrastructure lays the foundation for a productive and sustainable economy

Infrastructure is a means to an end.

We build water pipes not for the jobs created, but to move water to people who need it, keeping us healthy and energised. We build recycling facilities to protect the environment, and swales and wetlands to protect our property from flooding. We build networks to service new subdivisions that enable warm, safe housing. We value infrastructure because it helps us get more of the other things that we value.

Our economy depends on interdependent infrastructure services. (Box 1)

We commute on transport networks constructed and maintained by generations of New Zealanders. These same networks carry the goods that fill our supermarket shelves. These supermarkets are powered by electricity produced by power stations that may have been built decades ago. This electricity also charges phones that connect to a network of cell towers, which bring us closer to the world and to each other.

Infrastructure also supports wider social and environmental goals.

The New Zealand Infrastructure Strategy outlines an approach where our infrastructure drives higher living standards, contributes to a strong economy, enables our culture and society to thrive, and protects our environment.

Box 1

Infrastructure and economic growth

Well-designed and maintained infrastructure is important for long-term economic growth and development, and for raising living standards.

Infrastructure benefits long-term economic activity in three main ways:

1. It **provides services to consumers** that support activities, such as visiting or calling family and friends; travelling to school or work; heating a home, powering a TV; streaming movies; cooking meals and doing laundry.
2. It **supports economic production**. Water, power, transport and communication infrastructure provide the raw materials and services to businesses. A well-trained and healthy workforce depends on education and access to healthcare.
3. It **increases productivity** and the effectiveness of our workforce and businesses, by allowing specialisation within and across firms and countries. It also raises productivity by expanding and deepening labour markets and increasing flows of information and competition. Infrastructure can also enable us to respond to technology change.

Achieving these benefits requires us to invest the right amount in the right type of infrastructure, at the right time. More investment is not always better. When we spend too little on infrastructure to start with, then increased investment may deliver strong economic returns.

But if we are already spending enough to meet our needs, then additional investment may not boost economic activity enough to outweigh the costs. Increased taxes, rates or user charges may make living unaffordable for some.

High-income countries like New Zealand already have extensive, well-established infrastructure networks. This means the economic returns from new infrastructure are smaller, and the quality of spend tends to be more important than quantity. [1]

Infrastructure investment can have short-term economic benefits through jobs created by new projects. However, major infrastructure projects are seldom an effective fiscal stimulus for governments in economic downturns because it takes time to plan, design and procure them. [2] Maintaining existing asset spending is likely to be more cost effective and timely for fiscal stimulus. [3]

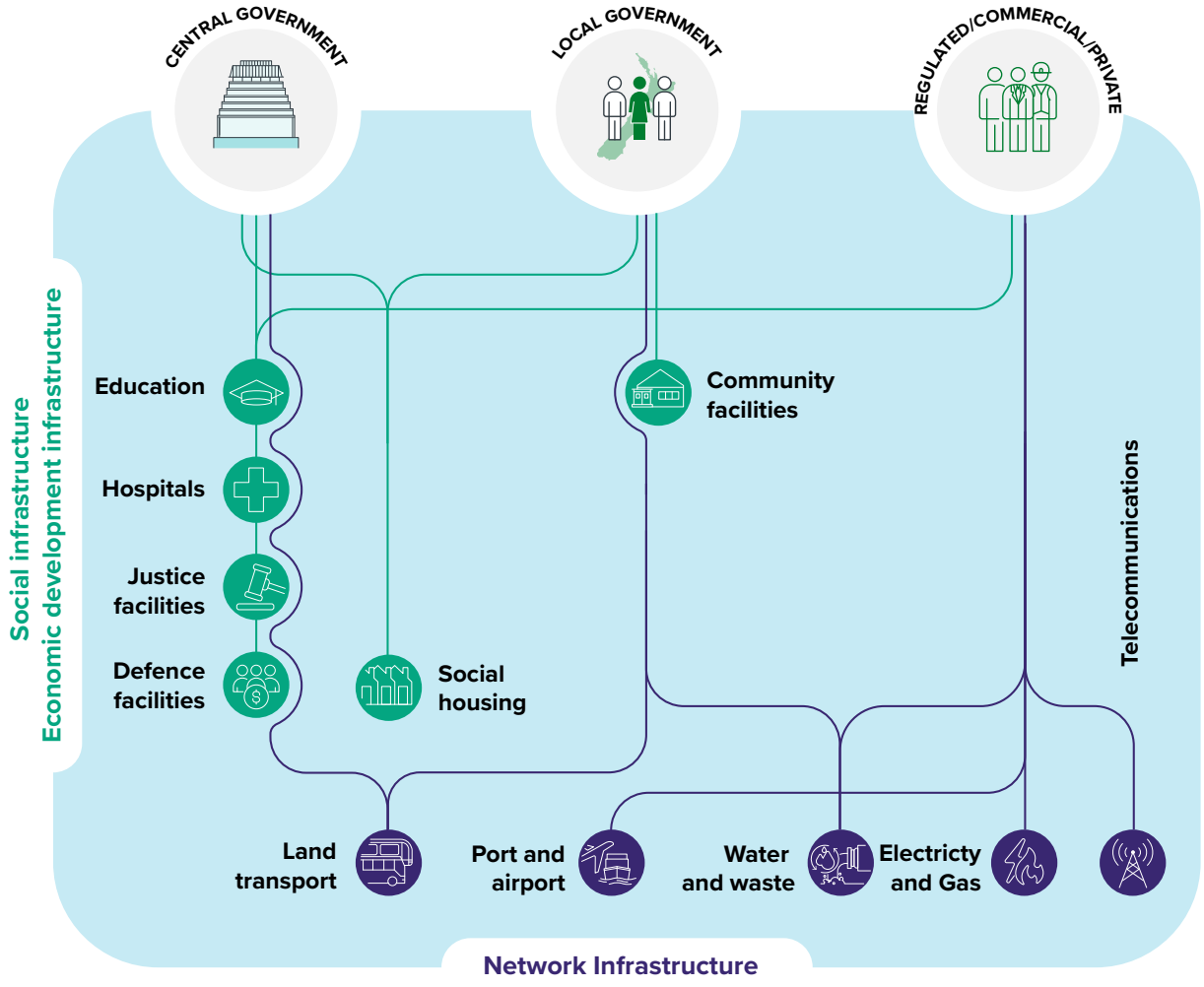
1.1.2. We rely on many types of infrastructure

Many types of infrastructure exist (Figure 1).

The term ‘infrastructure’ includes the networks that provide our water and wastewater, internet, electricity and roads. It also includes social infrastructure, like our hospitals, schools, courthouses, and much more. Infrastructure can also include things like public parks and green spaces (which help with urban stormwater management), household solar panels and batteries (which are an alternative to grid-connected electricity supply) and community facilities, such as marae (which help to connect communities and provide social services). It can also include economic development infrastructure, like convention centres or business incubators, that is intended to jump-start new economic activity.

Infrastructure includes many layers of connected assets and networks

Figure 1: Mapping different types of infrastructure



Source: New Zealand Infrastructure Commission. (2025).

Many organisations are involved in providing New Zealand's infrastructure.

Government agencies, local government, regulated utilities, state-owned enterprises, Schedule 4A companies, [4] council-controlled organisations, [5] and commercial businesses. Within any one sector, there can be public and private funding, planning, construction and provision of services.

Ownership structures are varied and constantly changing.

For example, central and local government are currently co-investing in the City Rail Link through a Schedule 4A company, with assets that will likely transition to a state-owned enterprise and local government, with a council-controlled organisation contracting services to a private operating consortium and collecting passenger revenue.

We categorise infrastructure according to the types of services that it provides and according to who owns and/or funds it.

For instance, we distinguish between land transport infrastructure and energy infrastructure, or between energy infrastructure and education infrastructure. We also distinguish between infrastructure owned and/or funded by central government, local government and commercial entities (including self-funding state-owned enterprises and council-owned companies).

1.1.3. New Zealand's infrastructure faces many needs and pressures

New Zealand is contending with a range of needs and pressures on infrastructure.

Infrastructure providers are facing rising costs to build and maintain infrastructure, along with rising expectations to provide better and more resilient services (Figure 2).

Maintenance and renewal is our greatest investment challenge.

This challenge is amplified by natural hazards, like earthquakes and extreme weather, which damage infrastructure, and other risks, like cybersecurity, which make infrastructure harder to operate. Climate change will increase the cost of some natural hazards, like flooding and extreme weather. Consequently, a significant and growing share of our infrastructure spend will need to be on renewing and replacing infrastructure that is wearing out and reaching end of life (Box 2). This already accounts for some 52% of all infrastructure investment by local government. The costs to insure infrastructure against natural hazards and other risks will add more.

Box 2

What we heard – asset management

Inefficiency of public infrastructure asset management was a recurring theme in feedback on 'Testing our thinking'. Many respondents stated that existing assets are not being used to their full potential. There was concern that infrastructure is often left to degrade due to short-term budget constraints, leading to costly reactive maintenance and reduced asset lifespans.

Respondents emphasised the need for a shift towards a proactive, whole-of-life asset management approach that prioritises maintenance and optimisation, before considering new builds. The use of digital tools, predictive analytics and advanced asset management technologies was also seen as essential to improving infrastructure efficiency and performance.

New capital investment will also be necessary.

New Zealand will need to keep building and improving infrastructure in response to its growing and ageing population, ongoing economic growth and international trade, technology changes, and the need to provide affordable and reliable electricity to decarbonise the economy. But these trends will have varying impacts for different types of infrastructure.

For instance, as our population ages we are likely to need relatively more hospitals and healthcare services, and relatively fewer new classrooms in schools (Box 3).

Box 3

What we heard – strategic infrastructure planning

A consistent theme to feedback received on 'Testing our thinking' was the need to ensure long-term, strategic and effective infrastructure planning.

Respondents strongly advocated for cross-party agreement and commitments to ensure infrastructure decisions are guided by long-term national priorities rather than short-term political agendas. Many emphasised the importance of adopting a 30- to 50-year planning horizon that aligns with population growth, climate resilience and economic development.

But the future is uncertain.

Some things are hard to predict, like new technologies that fundamentally change how people use infrastructure, and unforeseen events, like earthquakes and pandemics, also affect what it costs to build infrastructure and how we use it. Population and productivity could be faster or slower than predicted, affecting both how much new infrastructure we need and how easy it will be to pay for investment. Often, these uncertainties add to infrastructure costs, although we can take actions to mitigate some of these costs.

> A flaw in the human character is that everybody wants to build and nobody wants to do maintenance.
>
> **Kurt Vonnegut**

Infrastructure is under pressure to respond

Figure 2: Long-term drivers of infrastructure investment

Investing in existing assets

Maintenance and renewal of existing infrastructure

For every $10 we invested in new/improved infrastructure in recent decades, $6 of existing infrastructure wore out. [6]

Resilience to natural hazards

NZ is in the top 3 OECD countries for reported natural hazard damage. [7]

Central government spent at least $33 billion on natural hazards between 2010 and 2025, and many public assets are uninsured. [8]

Investing in new or improved assets

Population growth and demographic change

NZ's population is forecast to grow from 5.2 million to between 5.6 million and 7.9 million by mid-century. [9]

The ratio of working-age adults to retirement age people has declined from 7:1 in the early 1960s to 4:1 today, and it is projected to decline to 2:1 within 50 years. [10]

Economic development and changing standards

NZ's economy is projected to grow by over 70% by the 2050s. Real GDP per person is expected to rise by over 40%. [11]

Decarbonising our economy

To reach net zero by 2050 we need to increase electricity consumption by over 60%. [12]

Technology change

We rolled out Ultra-Fast Broadband to 1.8 million homes and businesses in a decade. [13]

Other cost drivers

Construction price inflation

Infrastructure construction prices rose by over twice the rate of inflation over the last 25 years. [14]

Temporary traffic management costs for electricity lines work tripled between 2019 and 2024. [15]

Shortage of existing infrastructure

During the early 1990s, the value of our water networks *declined* as networks wore out faster than we invested in them. [16]

1.2. New Zealand spends a lot but doesn't always get value

He nui ngā whakapaunga a Aotearoa engari kāore e tino kitea te wāriu

1.2.1. We're willing to pay for infrastructure

Infrastructure is not free – someone has to pay.

Providing infrastructure means paying upfront costs to build assets. It also means paying ongoing costs to maintain, renew, replace and occasionally decommission infrastructure assets. We can fund infrastructure through user charges, local government rates, or central government taxes. We can also borrow to pay for upfront costs and repay the loans over time. But one way or another, the cost of providing infrastructure is borne by New Zealanders.

New Zealand spends more than most on infrastructure.

Over the last 20 years New Zealand's average spend on infrastructure is 5.8% of gross domestic product (GDP). [17] Crown investment as a share of GDP accounts for about 40% of this, or 2.5% of GDP. More recently, between 2010 and 2019, New Zealand spent more per capita than any other OECD country on infrastructure (Figure 3). As a country, New Zealand has demonstrated a willingness to spend on infrastructure.

1.2.2. 'Bang for buck' is a significant challenge for New Zealand

We don't get enough for our infrastructure dollar.

The quality of our infrastructure lags, relative to what we spend on it. High-level comparisons suggest that New Zealand has among the lowest infrastructure spending 'bang for buck' in the OECD (Figure 3).

New Zealand has difficult terrain and a small population spread over a large land area.

New Zealand has a similar population to Greater Sydney, New South Wales. But our 5.2 million people are spread over 21 times as much area as Sydney's 5.3 million. [18] We can't always afford to build infrastructure to the same standard as more densely populated countries, because we don't have as many people to use and pay for it.

But we also make things difficult for ourselves.

It is costly to build complex public infrastructure projects in New Zealand, relative to other high-income countries. [19] We sometimes make hasty decisions about projects, leading to cost overruns. We also make it difficult to make best use of existing assets. For instance, the lack of congestion charging means we frequently build urban transport networks for the peak; rigid land-use planning rules prohibit making better use of rapid transit lines; and the absence of water metering often means we cannot proactively target maintenance programmes at leaking pipes (Box 4).

Box 4

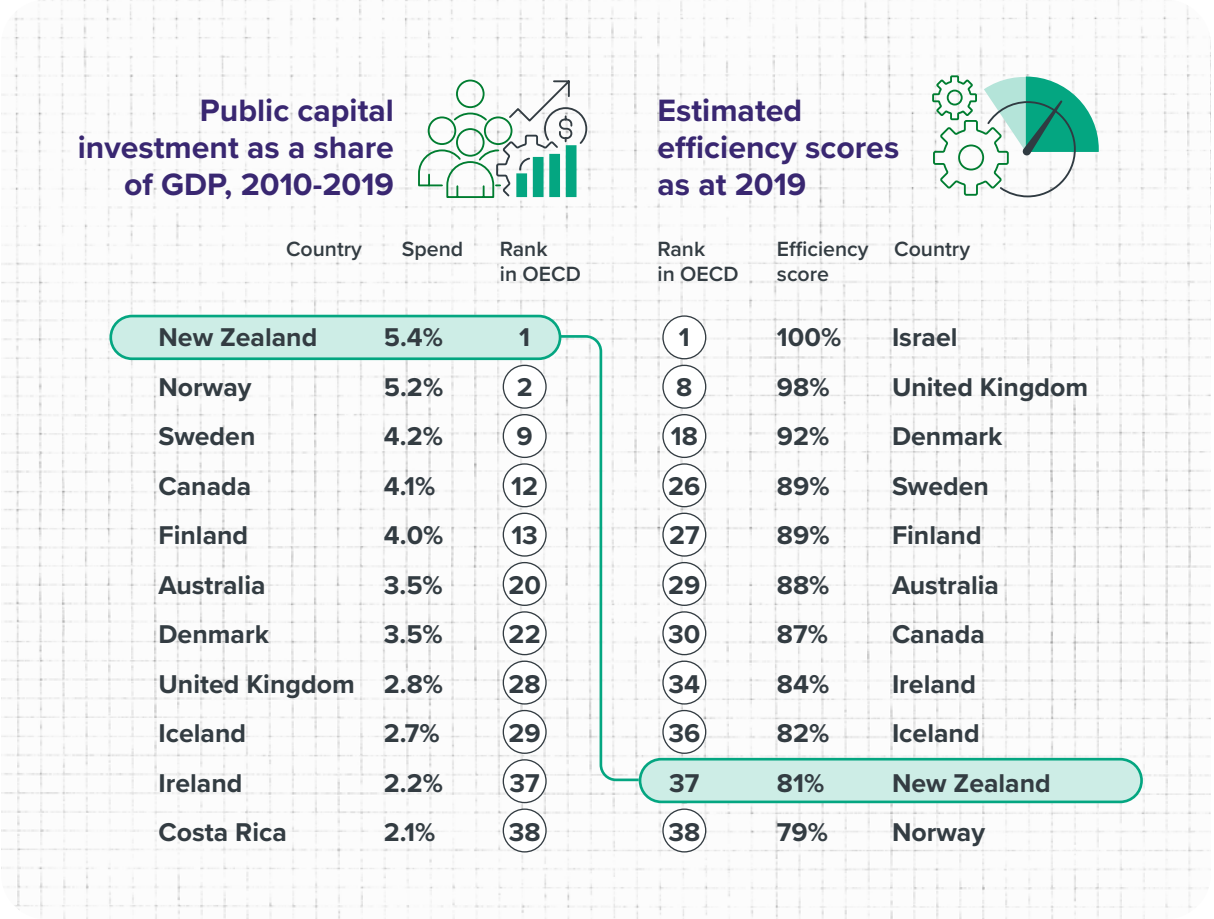
What we heard – regulatory and institutional frameworks

Regulatory inefficiencies, complex approval processes, and inconsistent frameworks were highlighted as the main factors delaying infrastructure projects and driving up costs by many respondents in feedback on 'Testing our thinking'.

Many advocated for a more strategic, coordinated approach to infrastructure planning across government agencies, local councils and industry stakeholders to reduce duplication and ensure better alignment between policy, funding, and project delivery.

New Zealand spent more on public infrastructure than any other OECD country in the 2010s, but the quality of our infrastructure doesn't measure up to what we spend

Figure 3: Public capital investment and investment efficiency scores for selected OECD countries



Source: Adapted from 'Investment gap or efficiency gap? Benchmarking New Zealand's investment in infrastructure'. New Zealand Infrastructure Commission. (2021). Note: "Public capital investment" refers to investment by central government and subnational governments, including some non-infrastructure investment, but excludes investment by private infrastructure providers.

1.2.3. We need to lift our game to meet our needs

New Zealand needs an infrastructure investment approach that is affordable and that delivers the right services in the right places when they are needed.

We need to fund projects with long-term value to users, including the maintenance and renewal of existing assets. Getting these things right means investment will contribute to maximising overall economic, social and environmental prosperity. However, there are significant challenges to achieving this that are unique to infrastructure.

Many things need to go right to ensure we get the best value from what we are spending.

We need to understand users' needs and understand our existing infrastructure and what's needed to keep it working. [20] We need to plan ahead, accounting for the needs of current and future generations. [21] We need project leaders who can successfully plan and design projects. We need to be able to protect land for future infrastructure projects [22] and consent infrastructure projects through resource management legislation. [23] We need a capable and right-sized infrastructure workforce, [24] and clients and construction firms that can work together to drive productivity. [25] We need pricing that optimises how we build and use infrastructure. [26]

A consistent approach to investment is important, even if the projects change over time.

Infrastructure policy and investment have experienced notable change in recent electoral cycles. A 'stop-start' approach can be costly for ongoing investment programmes and large projects with long planning and delivery timeframes. We need an approach to investment that provides more certainty that projects are solving the right problems, that they're affordable and can be delivered.

Infrastructure lasts for generations.

We need to make choices that will stand the test of time. Getting it right means leaving a positive legacy for future generations, infrastructure that people want to keep using and maintaining for their children and grandchildren. Getting it wrong can mean leaving behind projects that were built in the wrong place or at the wrong time and the burden of paying off debt for infrastructure that's not being used.

1.2.4. An ageing population and poor productivity mean money's getting tighter

Economic and demographic changes will make it harder to pay for investment in the future.

At the same time as we're facing rising costs to build and maintain infrastructure, economic growth is predicted to slow down.

New Zealand has an ageing population.

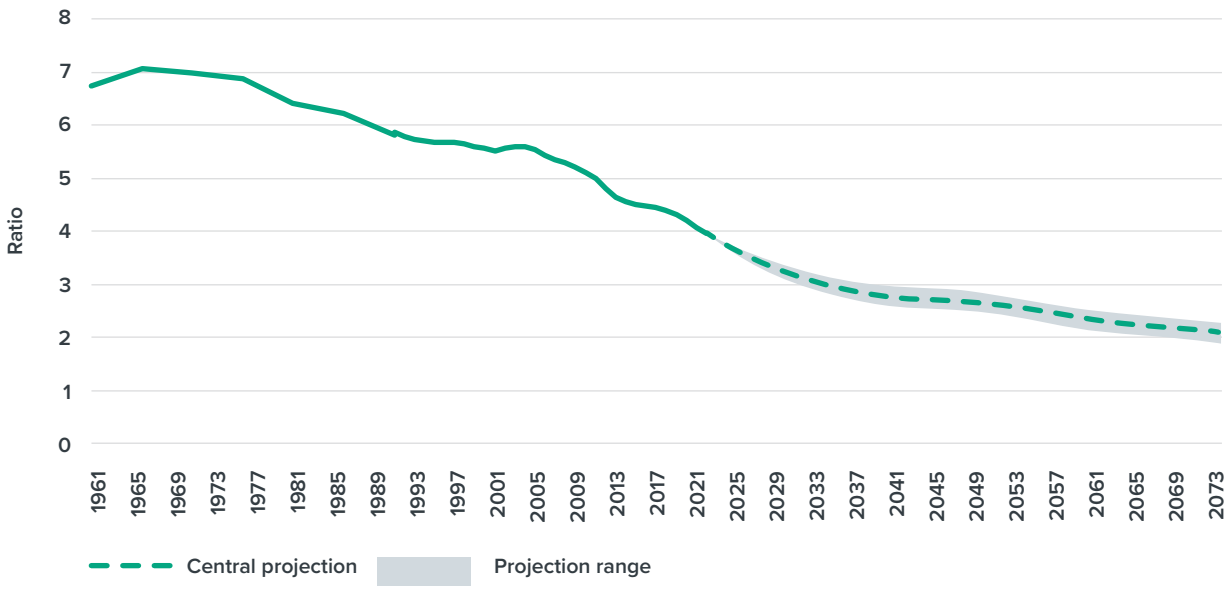
In 1960, New Zealand had seven working-age people for every one person over the age of 65. Today, this ratio is around four to one. By the 2070s the ratio will have fallen to two working-age people for every one over the age of 65 (Figure 4). The age group that is the largest recipient of government benefits is the fastest-growing group, while the working - age population will shrink without immigration from the early 2030s. And as a share of the total population, the working - age population will start shrinking now.[27]

Productivity growth is slowing.

Productivity growth means that the amount of goods and services produced per worker increases over time. This has slowed in recent decades [28] and is forecast to slow further. [29] This means that, in the long term, income growth will also slow, making it harder for households to afford to pay the taxes, rates and user charges that fund infrastructure investment.

New Zealand's population is ageing

Figure 4: Ratio of working-age people to people over the age of 65, 1961–2073



Source: Adapted from 'Paying it forward: Understanding our long-term infrastructure needs'. New Zealand Infrastructure Commission. (2024).

1.2.5. Central and local government are feeling the squeeze

Central and local government face fiscal pressures.

This will make it challenging to sustain current per capita investment, let alone spend more. Central government has been running structural budget deficits. 'Structural' means that it is being driven by things other than short-term economic shocks. The structural deficit is forecast to be around 2.4% of GDP. Under a baseline scenario, this means that net core Crown debt will reach 115% of GDP in 2050 and continue to climb (Figure 5).

In the short term this has been driven by several shocks.

This includes the impacts of the Global Financial Crisis, Canterbury earthquakes and COVID-19 pandemic on Crown debt ratios. New Zealand's Crown debt to GDP ratio is currently above the current Government's fiscal sustainability targets, although it has generally remained lower than many other OECD countries with larger populations and less exposure to natural hazards. In the long term, the fiscal trend is driven by hard-to-reverse changes like an ageing population and slowing productivity growth.

Local authorities also face fiscal constraints.

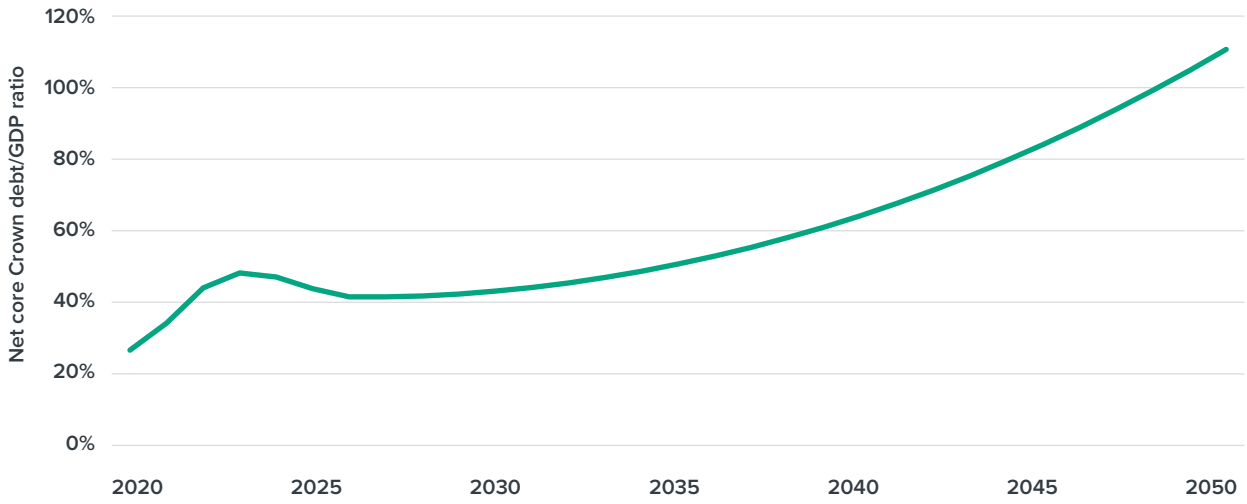
This is due to the need to contain their own rising debt-to-revenue ratios (Figure 6). International credit rating agencies have downgraded bond ratings for many local government bodies, suggesting that rising debt may make it more difficult to continue investing in the future. [30]

Infrastructure funding will likely come under increasing pressure.

We cannot take it for granted that New Zealand will continue to have one of the highest infrastructure spends among OECD countries. To sustain high-quality infrastructure services, we need to get smarter. That could be by reducing costs, easing the regulatory environment or taking a more commercial approach to infrastructure whereby we vastly lift the bar on project quality, finding new projects that households and businesses will be willing to pay more for.

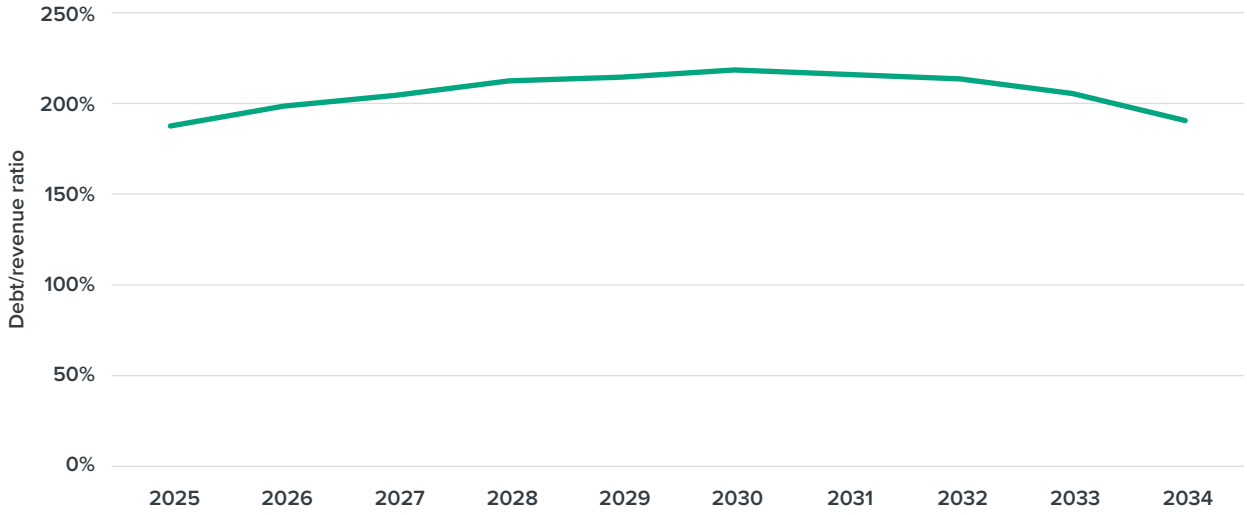
Both central and local government face fiscal constraints

Figure 5: New Zealand net core Crown debt projections as a share of GDP



Source: Adapted from 'Longevity and the public purse: Fiscal and economic impacts of increasing longevity'. Speech prepared for Dominick Stephens, Chief Economic Advisor. The Treasury. (2024).

Figure 6: Local government debt as a percentage of total revenue, 2024 long-term plans



Source: Adapted from 'Observations from our audits of councils' 2024-34 long-term plans'. Office of the Auditor-General. (2025).

1.2.6. Households also face affordability constraints

New Zealanders have mixed views about paying higher taxes or user charges to increase infrastructure spending.

While we are not always happy with the infrastructure that already exists, survey data suggests that less than half of New Zealanders would be willing to pay higher charges or taxes to increase infrastructure spending (Figure 7). [31]

Household affordability constraints will bite harder as our population ages.

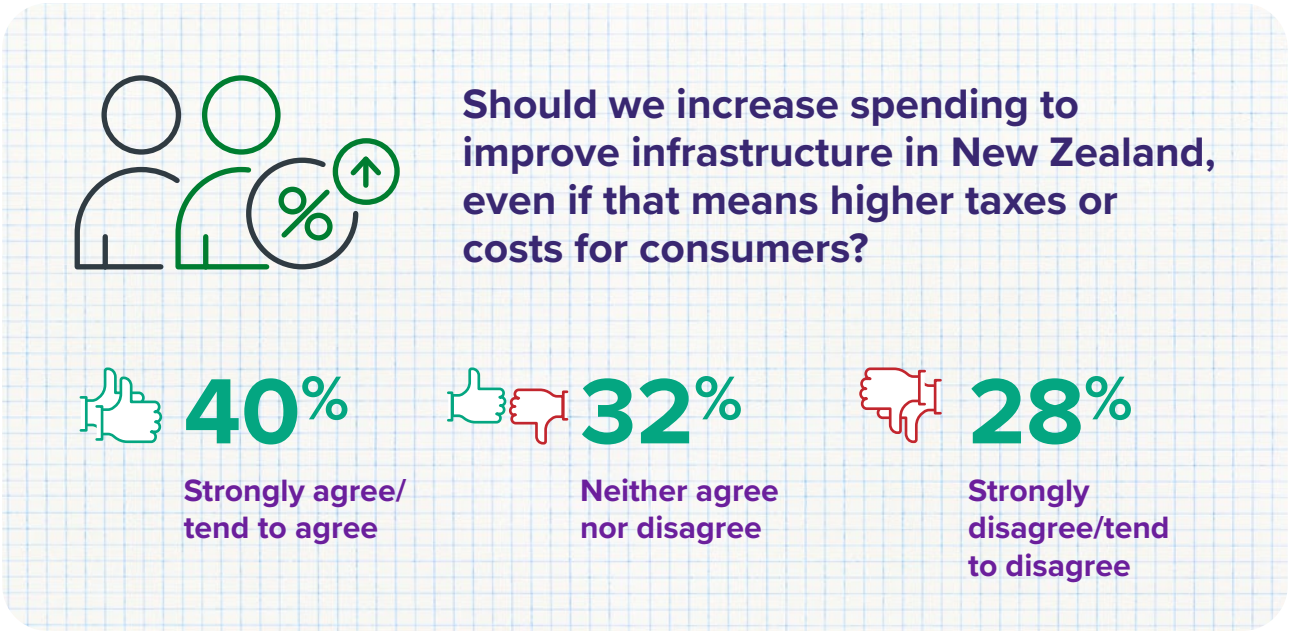
More people will be on fixed incomes, and fewer people will be able to afford to pay more of their incomes to pay for more investment. Increasing user charges in one area, like electricity or water, will make it harder to afford higher charges in another area, like transport.

New Zealanders expect better infrastructure spending, not necessarily more.

People are likely to be willing to pay a bit more for some things, such as healthcare or specific new projects that offer them large benefits, but across-the-board increases are more contested. People seem to prefer that growing or changing needs are met by rebalancing existing spending towards areas of unmet needs and getting more efficient at how they use public money.

New Zealanders have mixed views about paying higher taxes or charges to lift spending

Figure 7: Public preferences for paying more for infrastructure



Note: Findings are based on the Global Infrastructure Index (Ipsos & GIIA, 2024), which defined infrastructure as 'things we rely on like road, rail and air networks, utilities such as energy and water, and broadband and other communications', excluding social infrastructure. Source: 'Getting what we need: Public agreement and community expectations around infrastructure'. New Zealand Infrastructure Commission. (2025).

1.3. How the National Infrastructure Plan helps

Te āwhina a te Mahere Haumitanga ā-Motu

1.3.1. Getting past the swings and roundabouts

The National Infrastructure Plan lays out an approach for investment that can meet New Zealand's long-term needs.

It considers community needs and expectations and what the infrastructure sector requires to set it up for success. It is the Commission's independent advice to Government about the steps they can take to get us there. For instance, the Plan makes recommendations on how central government should maintain its infrastructure assets; how it selects, funds and delivers projects; and how it sets the 'rules of the game' for other infrastructure providers.

Infrastructure must serve different types of needs in different places.

Because New Zealand can't afford everything, we need to choose carefully and make trade-offs. Addressing one need or priority may make it difficult to address another, either today or in the future. A sustainable long-term investment approach needs to recognise current and future affordability constraints, while balancing investment between different needs and different places.

Areas of common ground exist.

Agreement is widespread on the need to keep maintaining and renewing the infrastructure we already have. Building greater resilience into our infrastructure to address natural hazards and other risks to infrastructure appears uncontroversial, as is building back from shocks and natural disasters. Taken together, we should be able to agree on most things, while agreeing to be flexible to allow other priorities to change.

It is not essential to agree on everything.

Political contestability about major new infrastructure projects often reflects disagreements between New Zealanders about what path we should take. It is not always straightforward to choose. However, progress is possible if we prioritise project deliverability, planning and building infrastructure projects in a timely and efficient way, and transparency, ensuring New Zealanders have good information on how public money is being spent and what outcomes are achieved from that spending.

1.3.2. What's in the draft Plan

The draft Plan presents our initial advice on New Zealand's future infrastructure needs and how to meet them.

It reveals critical trade-offs facing New Zealand, identifies areas where we can get better at providing services, charts a course for how central government can improve, and shows some of the project options in front of us. It includes nine sections (Table 1).

Overview of our advice

Table 1: Outline of the draft National Infrastructure Plan

Section	Description	Pages
1	**We can find common ground** The current and future challenges facing all infrastructure sectors, which is the background for the National Infrastructure Plan.	13
2	**From Strategy to Plan** How the National Infrastructure Plan builds on our previous advice in the New Zealand Infrastructure Strategy.	29
3	**Establish sustainable investment: Our forward guidance** The level and mix of investment that New Zealand is likely to need over the next 30 years to meet current and future demands in an affordable way.	34
4	**Set up infrastructure for success: The operating environment** Recommendations for improving the operating environment for investment across central government, local government and commercial infrastructure.	55
5	**Drive excellence from the core: Government investment** Recommendations for improving central government's capability to plan, fund and deliver investment and asset management.	84
7	**Raise the bar on choices: The investment menu** An overview of upcoming projects that are in the planning stages, including our assessment of their readiness for investment (where available).	109
8	**Embed good practices: The sectoral view** Sector-level analysis outlining current issues, the investment outlook, and key opportunities for system improvements based on Plan recommendations.	127
9	**We want to hear from you** Overview of how people can provide feedback to the draft Plan and how it will help inform the final Plan.	159

1.3.3. Our process for developing the Plan

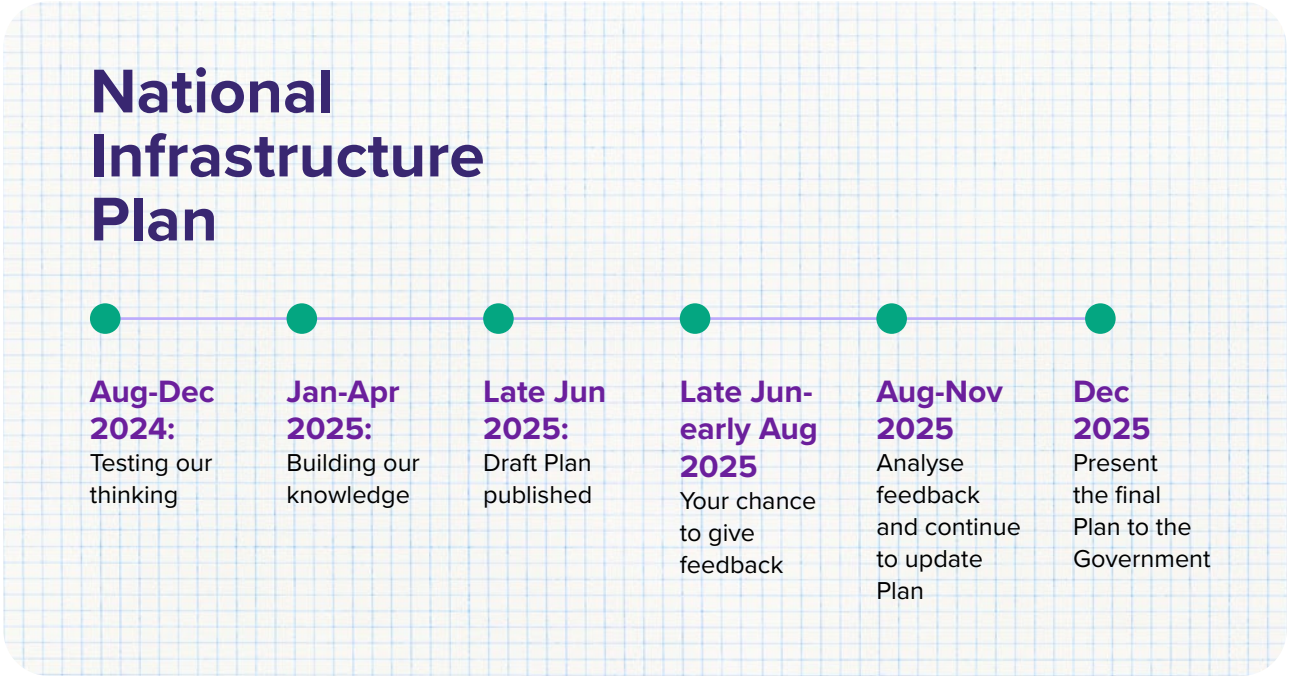
We are currently seeking feedback on the draft Plan.

Our initial advice has been developed based on feedback and data collected from the infrastructure sector and information developed by the Commission. We are now seeking feedback on the draft Plan, which will help inform the final Plan (Figure 8).

We will deliver the final Plan to the Minister for Infrastructure in late 2025.

Following delivery of the final National Infrastructure Plan, the Government is required to respond to the National Infrastructure Plan within 180 days, providing it to the House of Representatives.

Figure 8: Timeline for developing the National Infrastructure Plan



The National Infrastructure Plan is a snapshot.

It includes the best information available at a point in time and should be treated as a starting point. As such, parts of the National Infrastructure Plan will be updated regularly. We expect these updates to include:

- **National Infrastructure Pipeline:** Quarterly updates to project future investment intentions and workforce requirements, as well as to understand which of these intentions have committed funding.
- **Infrastructure Priorities Programme:** Annual updates to improve transparency over upcoming nationally important infrastructure proposals and their readiness for investment.
- **Infrastructure Needs Analysis:** Periodic updates to provide ongoing 'forward guidance' on what level of investment is affordable and what mix of investment will best meet our long-term demands for infrastructure.
- **Research and reviews:** Additional insights on how to improve the infrastructure operating environment that are obtained from our ongoing programme of research, reviews, monitoring and engagement with the wider infrastructure sector.
- **Te Ao Māori (the Māori worldview):** Better incorporating Te Ao Māori perspectives into the final Plan and the wider work programme as we deepen relationships with Māori and iwi entities, to better understand the range of infrastructure needs, perspectives, priorities and aspirations of Māori.

2 From Strategy to Plan

Mai i te Rautaki ki te Mahere

Moving to tactics and projects

Te neke ki ngā rautaki me ngā kaupapa

Summary

- The National Infrastructure Plan builds on the 2022 New Zealand Infrastructure Strategy, shifting from a broad vision to a focused plan for future infrastructure investment.
- New or improved tools, like the National Infrastructure Pipeline and Infrastructure Priorities Programme, have strengthened our ability to understand, prioritise and assure infrastructure investment, providing better visibility, independent assurance and a stronger evidence base.
- Community expectations and sector insights have shaped the Plan, ensuring it reflects the needs and priorities of New Zealanders.

> New Zealand's infrastructure faces a historic period of deep and intergenerational change. Historic, because many of the challenges we face are new and uncertain; deep, because it impacts all parts of our society; and intergenerational, because the effort must be sustained, not over months and years, but over decades.
>
> **New Zealand Infrastructure Strategy, 2022**

The National Infrastructure Plan is the second strategy report required under the Commission's legislation. It builds on the first of those reports, the New Zealand Infrastructure Strategy, and other work since the Commission's establishment.

2.1. Infrastructure for a thriving New Zealand

Ngā tūāhanga mō tētahi Aotearoa tōnui

The New Zealand Infrastructure Strategy, Rautaki Hanganga o Aotearoa, was published in 2022.

It took a 30-year holistic view of infrastructure to set the vision that infrastructure lays a foundation for the people, places, and businesses of Aotearoa New Zealand to thrive.

The Strategy was a broad document.

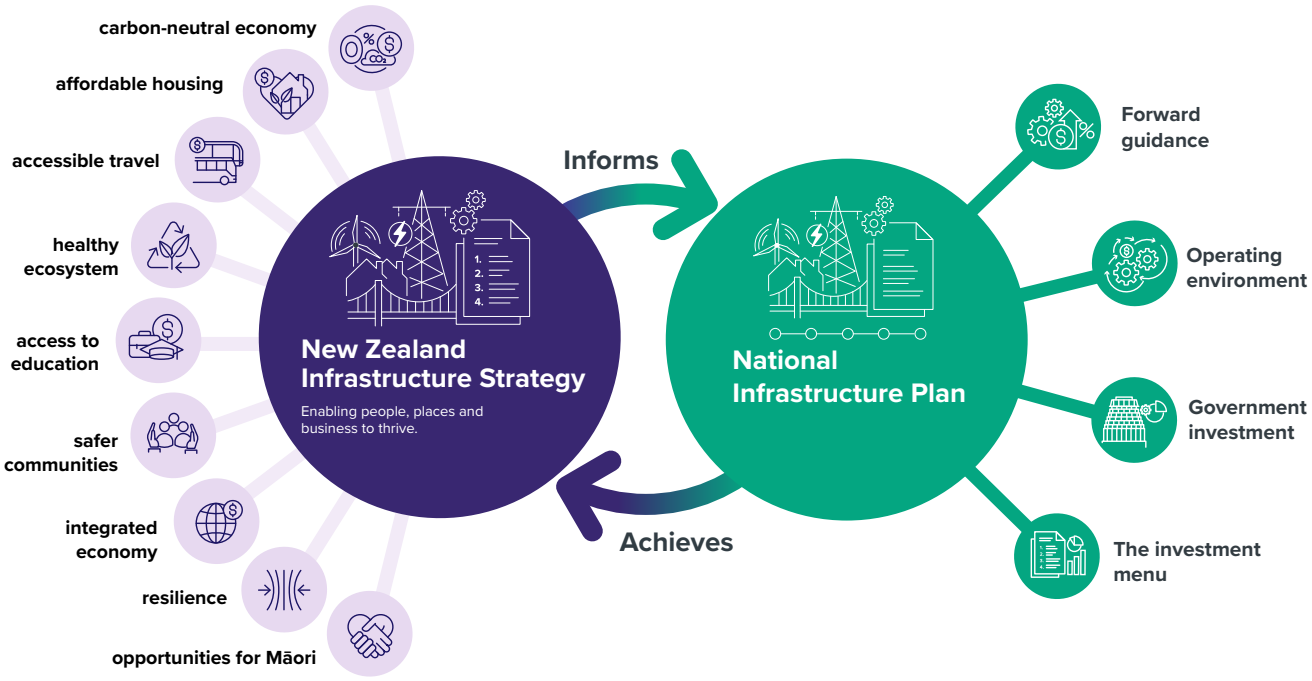
It identified significant long-term challenges facing New Zealand's infrastructure networks and outlined a set of national objectives to pursue. It provided 68 recommendations for policy and practice changes to achieve better infrastructure outcomes. It also highlighted areas where more information is needed about our infrastructure system. Many of these recommendations remain critically important.

The Strategy did not speak to specific investment decisions.

Instead, it identified the settings, incentives and approaches that would lead to good investment decisions (Figure 9).

The Plan builds on the foundation of the Strategy by providing forward guidance on how to meet New Zealand's infrastructure needs

Figure 9: From Strategy to Plan



2.2. What we've done since developing the Strategy

Ā mātau mahi kua tutuki, mai i te whanaketanga o te Rautaki

The Commission's work programme has sought to deepen the understanding of infrastructure investment, community expectations and needs. We now know more about how much we spend on infrastructure, what outcomes we achieve from investment and who pays for this spending. We have a greater awareness of what infrastructure assets New Zealand has, our approach to asset management and the ways we can improve. Critical components of this work which help form the National Infrastructure Plan include:

- **Developing the National Infrastructure Pipeline.** The Pipeline captures data on a growing share of all infrastructure projects in delivery and planning stages. Established in 2020 with around 500 active projects from 21 infrastructure providers, the Pipeline now features over 8,100 active projects from more than 110 providers, representing $207 billion in value. Across its evolution, we've tracked roughly 22,000 projects through their lifecycle from early scoping to completion or closure. With this evidence base, we know more about infrastructure projects now than we did when developing the Strategy.
- **Establishing New Zealand's first national Infrastructure Priorities Programme.** Built on principles of transparency and independence the programme is a structured assurance programme for infrastructure projects, or initiatives that avoid the need for infrastructure. We have now accepted applications for two rounds of the Infrastructure Priorities Programme and will provide a 'menu' of proposals and projects that will meet New Zealand's strategic objectives, represent good value for money and can be delivered.
- **Developing and providing independent advice to government.** As the Government's independent advisor on infrastructure, we play a role in the Treasury's Investment Management System, which helps to review and advise on central government infrastructure investment decisions as part of the Budget.
- **Advising on a diverse set of projects.** We have engaged with project teams across the country, from the Northern Expressway to Transmission Gully to Dunedin Hospital. Doing so has deepened our connections within the infrastructure sector, including public and private entities involved in infrastructure. We have also published what we have learned in several reports, which are aimed at public sector organisations that manage, plan, deliver, and maintain infrastructure, particularly those in roles responsible for or involved with procurement decisions or supply chain management.
- **Establishing the Infrastructure Leaders Network.** This is a peer network designed specifically for senior public sector infrastructure leaders. The network provides a trusted forum for leaders to connect, share insights and learn from one another. It has played a valuable role in testing and providing feedback on our early thinking during the development of the Plan. Its input has deepened our understanding of the challenges and opportunities faced by public sector infrastructure providers.
- **Undertaking research.** Our work has included New Zealand's first comprehensive baseline analysis of the infrastructure workforce and asset management maturity. This is a baseline study demonstrating what assets we have across sectors, how investment levels have changed over 150 years and the costs to maintain it all; and providing a deeper understanding of community expectations through our 'What's fair?' research programme.
- **Monitoring progress against the New Zealand Infrastructure Strategy.** The Commission published its first monitoring report of the Strategy in 2024. [32] The aim of our monitoring work is to track progress against the Strategy, as well as to identify areas where more effort is needed. The first monitoring report identified many areas of progress, as well as areas where more must be done if we are to get the most out of our infrastructure investment.

- **Deepening our understanding of Māori engagement in infrastructure.** There is more to be done, but we undertook research to explore how government infrastructure providers and Māori engage, and work, with each other on the planning and development of infrastructure. The need for this research was identified in the Infrastructure Strategy. In developing the Plan we have sought advice from experts in Te Ao Māori and infrastructure to advise us as we identify ways to incorporate Te Ao Māori into the final Plan and the Commission's wider work programme.
- **Testing our thinking.** In 2024, the Commission sought feedback on our emerging thinking on developing a National Infrastructure Plan.

This work is the backbone of the draft National Infrastructure Plan.

While the Strategy canvassed the broader issues facing infrastructure, we are now concentrating on infrastructure investment and what is needed to achieve our goals over the next generation.

2.3. Working with the sector to develop this Plan

Te mahi tahi me te rāngai ki te whakawhanake i tēnei Mahere

The draft National Infrastructure Plan has been developed collaboratively.

It draws together the Commission's evidence base, including information we have gathered from infrastructure providers. Our findings have been socialised and tested extensively within the infrastructure sector (Figure 10).

Figure 10: Engaging on the draft National Infrastructure Plan

National Infrastructure Pipeline

$111.6bn

with funding source confirmed **($206.9 bn total)**

8,100

infrastructure initiatives underway and in planning

22,000

pipeline initiatives **tracked since 2020**

114

contributing organisations

39%

increase in contributors March 2024 – March 2025

Infrastructure hub:

1,600

registered users

950

organisation profiles

3 project reviews published

(including a health infrastructure review)

23 technical reports published

(including work on infrastructure pricing, asset management, transparency, Māori engagement, and a baseline report on workforce)

120+ proposals

received through the first 2 rounds of the Infrastructure Priorities Programme

150

leaders and **experts** brought together for discussions on infrastructure issues at our **2024 symposium**

3,600

downloads of our **'Infrastructure for a better future'** podcasts

1,200

Te Waihanga mentions in the media and over **10,000 Linkedin followers**

14

public webinars with **over 1,500** in total attendance

Monthly newsletters sent to over

4,000

people

116,000

visitors to our website, with over **500,000 page views**

Infrastructure Leaders Network

established and over **18 events** held

3 Establish sustainable investment: Our forward guidance

He whakarite i ngā haumitanga toitū: He aratohu anga whamua

A fundable path for infrastructure investment

He huarahi whiwhi pūtea mō ngā haumitanga tūāhanga

Summary

- New Zealanders benefit from investments made by past generations.
- While our infrastructure compares well to peer countries in some areas, we still face quality and usage issues, such as high water consumption, frequent power outages and poor road safety.
- We need to continue investing to ensure our infrastructure is fit for the future, but we can't afford everything, so trade-offs are necessary.
- To guide these trade-offs, the Commission has developed 'forward guidance' to set out a sustainable level and mix of infrastructure investment.
- This forward guidance lays out a system-wide view that supports a strategic approach to investment across sectors.
- We forecast future demand for infrastructure by considering the need to renew and replace existing infrastructure assets and respond to demographic changes, economic growth and climate change.
- Our analysis suggests demand for capital investment will increase from around $20 billion today to slightly more than $30 billion by the 2050s (in 2023 NZD terms).
- Renewal and resilience investment will become relatively more important as existing assets age, growth slows and climate pressures intensify, requiring a shift in how and where we invest.
- We have choices about how we fund and finance this investment. But regardless, New Zealanders will have to pay. Some costs will be met directly by households, through taxes, rates or user charges. Others will be met by businesses and passed on to local or international customers.
- More infrastructure investment will require more workers. Changes are needed to ensure that we develop an infrastructure workforce that has the right capacity and capability to deliver on future investment demands.
- Central and local government need to build their capability to lead and deliver complex infrastructure projects successfully.
- Asset owners need to use sophisticated project planning to manage uncertain futures. For instance, project planning can build in ways to keep options open rather than making large, irreversible commitments that may not pay off.

3.1. Context: We're building on what we've already got

Horopaki: Kei te whakapiki mātau i runga ake o ngā huarawa o te wā nei

New Zealanders benefit from investments made by past generations.

Many of the dams and bridges built years ago are with us today and still have a role in shaping the way we live. A large proportion of our electricity generation is renewable thanks to our hydroelectric power stations and transmission grid. We can travel and move goods to even the most remote parts of the country, often across challenging geography. We have water networks, schools, hospitals and much more.

Our existing infrastructure measures up reasonably well against other high-income countries with similarly challenging terrain and small and dispersed populations (Table 2).

We have about as much road network, electricity generation and water and wastewater pipes per person as our peer countries. [33] In some cases, like fixed-line broadband networks and school infrastructure, we have more or better-maintained infrastructure than our peers.

We see problems related to the quality of our infrastructure and how we use it.

When we compare ourselves with our peers, we see that too many people die on our roads. We have more power outages than many other countries. We use more water and, in some places, have issues with the quality of our drinking water. We have been fast to roll out fibre broadband, but our mobile broadband networks are comparatively underdeveloped. And, while it is hard to compare how well maintained our infrastructure is, we know that we will face costs due to a long history of deferred maintenance, especially for water pipes and hospitals.

Some of our infrastructure networks compare better than others

Table 2: Comparing New Zealand's infrastructure networks against our peer countries

	NZ difference from comparator country average (based upon simple unweighted average of multiple measures)					
Network	**Investment levels**	**Quantity of infrastructure**	**Usage**	**Quality**	**Comparator countries**	**Notes**
Road	+34%	-13%	-33%	-13%	CZE, CAN, FIN, SWE, ISL, NOR	High investment levels, low usage, high amount of fatalities on the network
Rail	-64%	-43%	-23%	-90%	CHL, GRC, JPN, ESP, FIN, SWE, ISL, NOR	Low investment levels, low usage (both passenger and freight), high emissions
Electricity	-3%	+29%	-46%	-12%	COL, CRI, CHL, CAN, FIN, SWE, NOR, ISL	Large transmission network, relatively high frequency and length of outages
Health	-25%	-10%	-2%	-13%	UK, AUS, SWE, DEN, ISL, NOR	Low amounts of some medical equipment, some higher wait times, and older hospitals
Education	+1%	-10%	+6%	+4%	CHL, FIN, AUS, ISL, NOR, USA, IRL	No clear deficits or shortages
Telco	+28%	-12%	+3%	-4%	COL, CRI, CHI, CAN, FIN, SWE, ISL, NOR	High investment levels, developed fixed broadband but underdeveloped mobile broadband
Water	+70%	-3%	+99%	+9%	CHL, GRC, ESP, CZE, CAN, FIN, SWE, ISL, NOR	High levels of investment, very high usage, average levels of leakage

Notes: Comparator countries were chosen based upon different characteristics for each network, but often included measures of population, population density, land area, terrain ruggedness, and per-capita incomes. Differences from the comparator country average are composed of a simple average of various available metrics without weights. For instance, road network quality measures include metrics on congestion, road smoothness, travel speeds and safety, which are normalised and averaged to make a single measure. Source: Draft Infrastructure Needs Analysis, Infrastructure Commission (2025).

We need to continue investing to ensure our infrastructure is fit for the future.

We must continue adapting and growing networks in the face of increasing and changing needs. As outlined in Section 1, our population is growing and ageing. Our service level expectations are rising due to economic growth and development and infrastructure technologies are changing. Along with this, climate change is creating the need to lift the resilience of our infrastructure and transform it to reduce carbon emissions Perhaps more importantly, we must continue maintaining and renewing the infrastructure we already have and ensuring that it's resilient against natural hazards.

As a country, we need to be mindful of affordability constraints.

In Section 1, we outlined the fiscal constraints facing local and central government and the affordability constraints facing households. Given the long-term financial constraints arising from an ageing population and slowing productivity growth, we need an investment approach that is affordable for New Zealanders while balancing competing demands between different types of infrastructure, different places and different outcomes.

This section presents the Commission's 'forward guidance' on a sustainable level and mix of infrastructure investment.

It represents what we believe to be an affordable path for New Zealand given future economic, demographic and climate scenarios and informed by what we have been prepared to spend on infrastructure in the past.

This analysis is not prescriptive and does not recommend (or reject) specific projects.

Rather, we lay out a system-wide view that supports a strategic approach to investment across portfolios. This view can be used to inform things like fiscal strategy, asset management and investment planning, spatial planning, and workforce development policy.

3.2. Investment must increase to meet future demands

Me piki te haumitanga e tutuki ai ngā popono anamata

3.2.1. Context

We forecast long-term demand for infrastructure investment for all infrastructure sectors and across all regions. [34]

Our analysis focuses on capital investment in infrastructure, excluding operating expenditure related to infrastructure. It takes a long-term, national-level perspective, based on New Zealand's and other country's demonstrated willingness to pay for more or improved infrastructure, as opposed to bottom-up assessments of investment need based upon a defined set of outcomes. Our forward guidance on investment is designed to be affordable and sustainable over the long-term for many generations of New Zealanders. However, in some cases they may differ from bottom-up investment demand projections from infrastructure providers.

Our analysis considers the underlying drivers of investment demand.

It accounts for the need to renew and replace existing infrastructure assets as they wear out and to address natural hazards that can damage infrastructure. It looks at the need to lift the capacity and quality of infrastructure in response to demographic changes, economic growth, and climate change. It also considers cases where less infrastructure may be needed in the future due to declining demand. To do so, we draw upon population and economic scenarios published by Stats NZ, the Treasury, and the Climate Change Commission.

We provide forward guidance on a sustainable path for future infrastructure investment.

This represents what we believe to be an affordable path for New Zealand given what we have been prepared to spend on infrastructure in the past.

3.2.2. Strategic direction

Total infrastructure investment increases with population and economic growth

We expect demand for infrastructure investment to increase over the next three decades (Figure 11).

To meet demand, annual capital investment would increase from around $20 billion today to slightly more than $30 billion by the 2050s (in 2023 NZD terms). This includes all types of infrastructure investment, regardless of ownership arrangements. We provide a sectoral breakdown below.

The balance of investment will shift.

Rising investment demand reflects the need to renew, replace and build resilience into our existing infrastructure, as well as building new or improved infrastructure in response to demographic change, economic growth and decarbonisation needs. Renewal investment is expected to become relatively more important in the future, as the infrastructure we built in the past wears out and population growth slows.

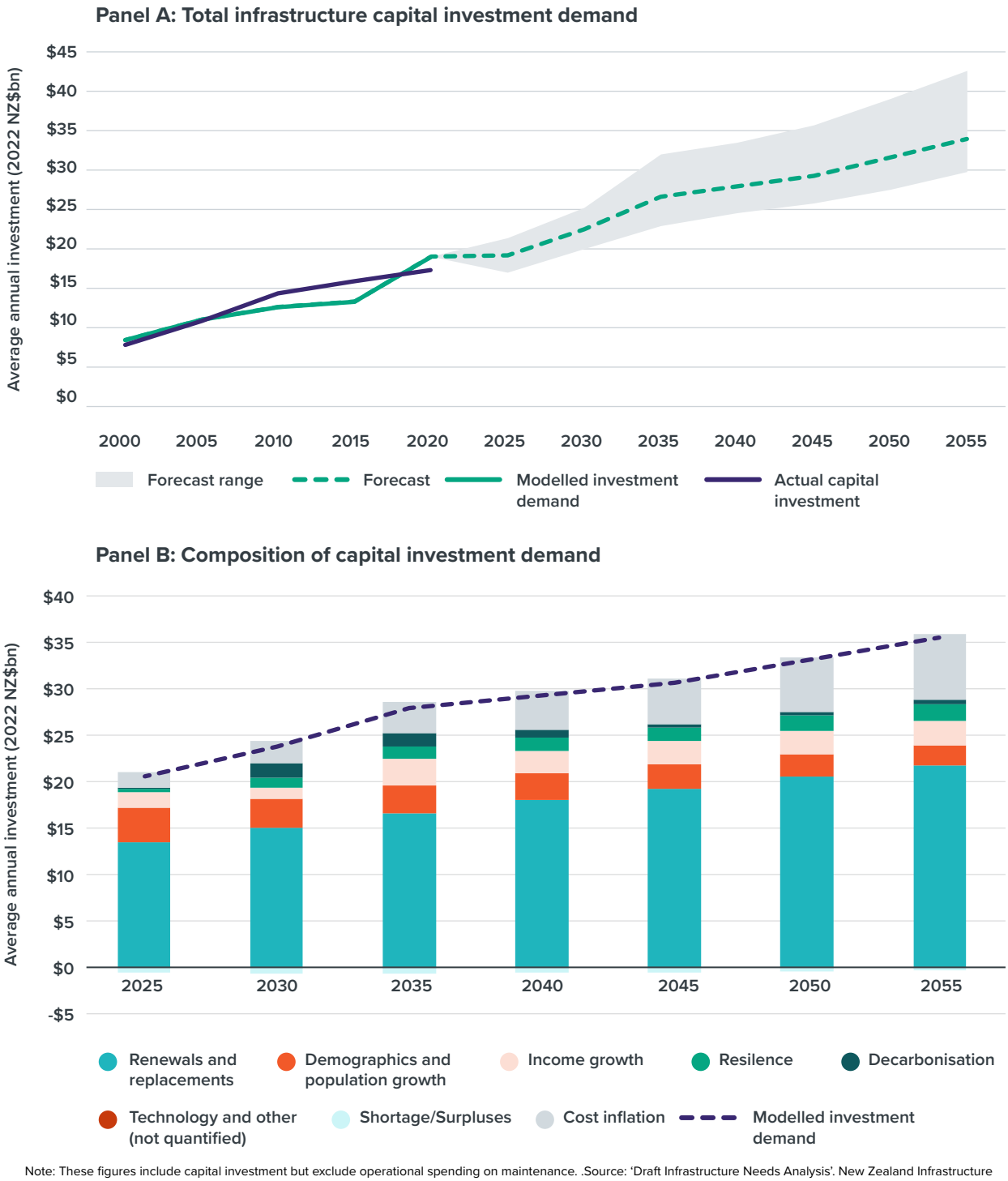
Spending could be higher if New Zealand's population and economy grow more rapidly.

Spending could also be higher if we find investment opportunities that significantly increase the size of the economy or generate large increases in revenues that could fund more investment.

This could happen if we experience significant technological changes or economic shifts that create the opportunity to build entirely new types of infrastructure, like the roll out of Ultra-Fast Broadband.

Infrastructure investment is expected to rise over the next 30 years

Figure 11: Historical and forecast demand for infrastructure investment, in 2023 NZD



Note: These figures include capital investment but exclude operational spending on maintenance. .Source: 'Draft Infrastructure Needs Analysis'. New Zealand Infrastructure Commission. (2025).

A similar share of national income is allocated to infrastructure investment

While the total spend on infrastructure will increase, the 'share of our wallet' spent on investment is expected to remain constant.

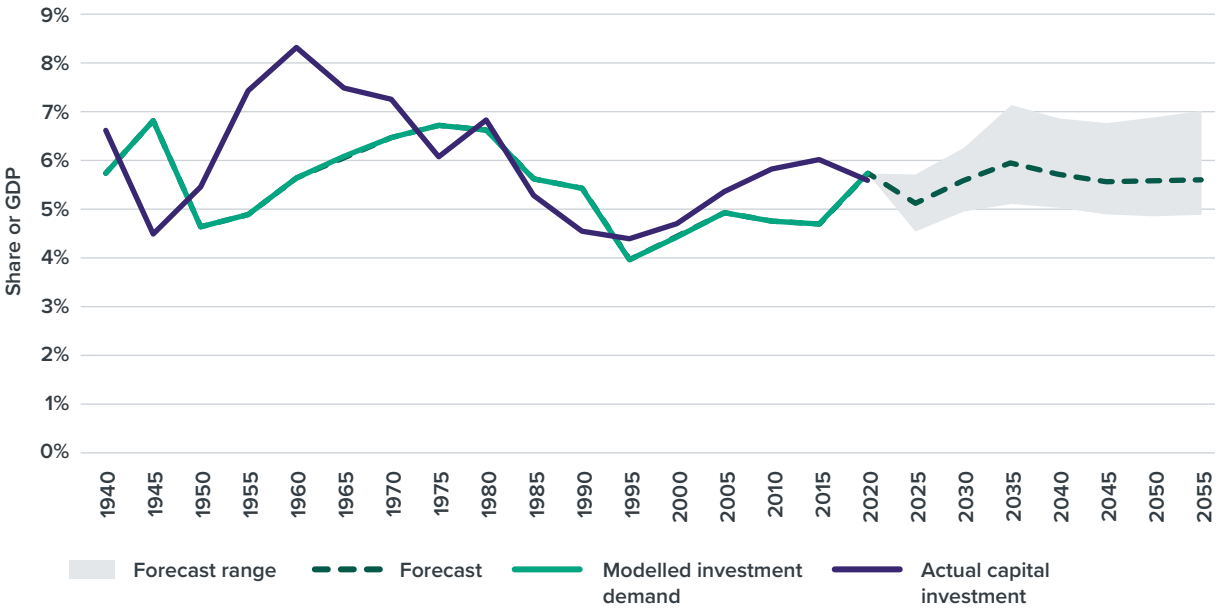
Our analysis indicates infrastructure investment will average around 5.8% of GDP over the next 30 years. This level of investment is similar to the share of GDP that we have spent in recent decades. Spending could be slightly higher or lower, depending upon what scenario happens. The Commission expects this to reasonably occur within the range of 5% to 7% of GDP (Figure 12).

These levels of investment have been financially sustainable for past generations.

Over the past 150 years, infrastructure investment in this country has averaged between 5% and 6% of GDP. We've had periods where we haven't gotten the mix or level of investment right, where we've under- or over-invested relative to demand. However, we consider that this long-term trend represents a funding path that has been sustainable and affordable for New Zealanders in the past. As noted above, however, maintaining these levels of investment will pose a challenge given long-term fiscal and demographic trends.

Infrastructure spending is expected to be between 5% to 7% of GDP

Figure 12: Historical and forecast demand for infrastructure investment, as a share of GDP



Source: 'Draft Infrastructure Needs Analysis'. New Zealand Infrastructure Commission. (2025).

Investment increases with high-quality projects and the right funding tools

High-quality projects can unlock additional revenue streams to help pay for investment.

This is because users are more likely to pay when new infrastructure offers them large benefits and when it can be delivered cost effectively. [35] Users' appetite to pay more for better infrastructure can be tested through use of funding mechanisms like tolls for new roads and development levies for local government growth infrastructure.

When infrastructure offers transformational benefits people may be willing to pay much more.

This is most likely to happen when major technological innovations come along. Examples include the development of electricity networks in the early 1900s (Box 5) and the rapid build-out of Ultra-Fast Broadband and mobile phone networks in recent decades.

Households and businesses also face limits on how much more they can pay through new charges.

When new infrastructure offers incremental benefits relative to what's already there, such as a second road link that slightly reduces travel times between two towns, households and businesses will not be able to afford to pay a lot more. However, looking for new revenue streams can still help us reduce fiscal pressures and help maintain investment levels over time.

Box 5

Electrifying New Zealand in the 1920s

People are willing to pay more for new infrastructure that delivers significant economic or quality-of-life benefits. In the early 1900s, electricity providers were supplying power in some New Zealand cities, but other cities, rural areas and regional centres did not yet have electricity.

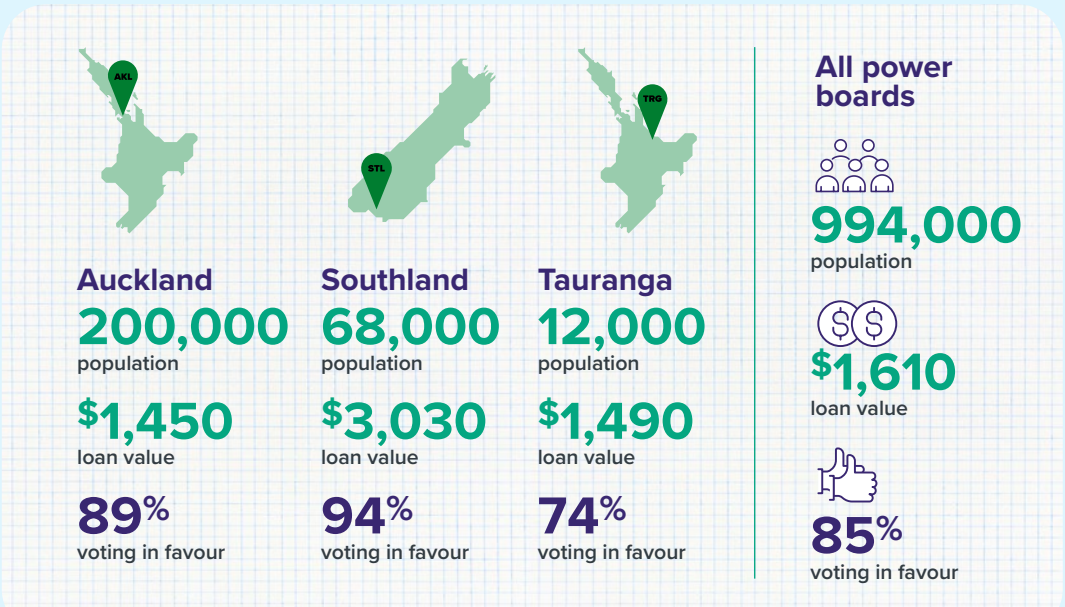
The benefits of electricity were large and clear. At home, it meant shifting from candles, coal stoves and iceboxes to electric lights, electric ranges and refrigerators. For businesses, it meant more efficient and powerful machines to produce goods, lifting productivity and outputs.

The Electric Power Boards Act 1918 enabled local communities to band together to establish electricity power boards that could build power stations and electricity lines.

To finance the build-out of these distribution networks, local power boards issued loans that were then paid back by electricity users. By 1931, £12,821,666 worth of loans were issued, equal to $1.6 billion in 2024 dollars, or approximately $1,600 per resident.

Each of these loans needed to receive voter approval through a referendum. Although the cost of electrification was high for the average household, all power board referendums passed, with an average of over 85% support (Figure 13). This would be the equivalent of current Auckland residents voting overwhelmingly for a $4.5 billion piece of infrastructure, paid for solely by residents.

Figure 13: Results of electricity power board referenda in selected areas, 1918 through 1931



Source: Adapted from the New Zealand Official Yearbook. (1931).

3.2.3. Recommendations

Changes are needed to ensure that we can sustainably fund infrastructure investment to meet future demand.

Later in the Plan, we make several recommendations that are intended to address this. The first recommendation, in Section 4, addresses how we price and fund infrastructure to ensure we can afford to invest across all infrastructure sectors. The second set of recommendations, in Section 5, focuses on ensuring that central government understands its future investment requirements and uses this to inform fiscal strategy.

These recommendations are important for ensuring that infrastructure investment is sustainable over time and meets the country's long-term needs.

3.3. The investment mix will change

Ka rerekē te āhua o te kanorau haumitanga

3.3.1. Context

Social, economic, and environmental trends have varying impacts on different infrastructure sectors and regions.

New Zealand's overall population will grow, requiring new infrastructure. However, some parts of New Zealand will experience declining populations. In areas with a declining population it will be harder to pay for and maintain existing infrastructure.

Our population will grow older, which will increase the relative demand for healthcare services and hospital infrastructure but reduce the relative demand for new schools and university buildings.

Our analysis translates national-level trends into estimates of investment demand for different infrastructure sectors.

It can also be used to explore regional investment demands, although we have not completed this work for the draft Plan.

We provide 'forward guidance' on the future mix of infrastructure investment.

This represents what is likely to be needed to meet demands at a sectoral level, relative to other investment needs and to what is likely to be affordable across all sectors.

3.3.2. Strategic direction

The investment mix adapts with changing needs

The mix of investment will change in the future.

The long-term trends facing us will boost demand for some types of infrastructure and reduce it for others (Table 3). For example, an ageing population will reduce relative demand for education services, and the supporting school and university infrastructure, but increase the relative demand for healthcare services and supporting hospital infrastructure.

The 'overs' and 'unders' are likely to balance out.

Some sectors will experience rising investment demand, as a share of GDP, while others will require a smaller share of GDP to be devoted to investment. This means that infrastructure investment as a whole will remain affordable, relative to the size of our economy, as long as we adjust to both increasing and declining investment demand.

The mix of investment between and within sectors will change

Table 3: Sector-level capital investment demand and key drivers

Sector	Main providers	How to fund investment	Recent investment trends, % of GDP (2010–2022)	Forecast future investment demand, % of GDP (2024–2054)		Key drivers of future investment
Network infrastructure						
Land transport – road, public transport, rail	Central and local government	User charges and rates	1.2%	0.8%	↓	Decarbonisation, slowing income and population growth
Electricity and gas	Commercial sector	User charges	0.8%	1.4%	↑	Decarbonisation, renewals
Water and waste	Local government	User charges and rates	0.6%	0.4%	↓	Renewals and natural hazards
Telecommunications	Commercial sector	User charges	0.7%	0.8%		Renewals, stable outlook
Social infrastructure						
Education – primary/secondary	Central government	Taxes	0.4%	0.2%	↓	Demographic change
Education – tertiary	Central government	Taxes and fees	0.6%	0.5%	↓	Demographic change
Hospitals	Central government	Taxes	0.2%	0.4%	↑	Demographic change, renewals
Public administration and safety – government buildings, prisons, defence, justice	Central and local government	Taxes	0.9%	0.8%		Renewals, stable outlook
Social housing	Central and local government	Taxes and rents	0.1%	0.3%	↑	Population growth, catchup investment
Other public capital	Central and local government	Various	0.2%	0.2%		Stable outlook

Note: The infrastructure networks highlighted in our analysis are based upon those categories and definitions of infrastructure from our 2024 Research Insights paper, 'Build or Maintain: New Zealand's infrastructure asset value, investment, and depreciation, 1990–2022'. Those definitions are drawn from Stats NZ data from New Zealand's national accounts. In some cases these categories do not neatly correspond to other, more detailed infrastructure sector classifications. Source: 'Draft Infrastructure Needs Analysis'. New Zealand Infrastructure Commission. (2025).

Investment rises in electricity and health infrastructure

We identify two sectors with a rising share of infrastructure investment.

- **Electricity:** We expect electricity infrastructure investment demand to increase due to technological changes and the need to decarbonise our economy. While this investment can be funded commercially from user charges, government policy will affect how much investment is demanded and how rapidly it can be supplied.
- **Hospitals:** We expect investment demand for hospital infrastructure to increase due to the need to renew and replace ageing hospitals and expand hospital services to serve the growing needs of an ageing population. While there are options about how to deliver additional hospital services, central government is expected to fund these through taxes. Hospitals are also seen as crucial in addressing health inequities between Māori and non-Māori, with Māori facing higher rates of chronic disease, injury and lower life expectancy. [36]

Investment eases in water, land transport and education

This will need to be balanced out by declining relative spend in three other sectors.

Reducing the share of GDP we invest in these areas will help address the fiscal and affordability pressures facing an ageing population.

- **Land transport:** Investment in land transport (road, public transport, and rail) has been elevated over the past 20 years. This level of investment could moderate due to expected slowing of population and income growth, which play an important role in these sectors. Decarbonising our economy has implications for investment within land transport, reducing the need to invest in more roads while increasing it for public transport and active modes. This level of investment would mean we can continue to meet our needs with user charges, rather than requiring top-ups out of general tax revenue as has happened in recent years.
- **Education:** Overall, we expect investment demand for education infrastructure to moderate as the population ages. We note, however, that the Māori population is comparatively young, with an average age of 27.2 years, compared with the national average of 38.1 years, according to the 2023 Census. This means we may need to provide a different mix of services in the future.
- **Water and waste:** We expect water and waste investment requirements to moderate, following 25 years of 'catch-up' investment for assets that are ageing or in poor condition. Achieving this will require a focus on renewals.

Investment needs are monitored in sectors that are hard to forecast

Demand for justice and defence infrastructure is hard to predict.

Due to policy and geopolitical factors, the demand for justice and defence infrastructure is difficult to analyse and forecast. For example, expected growth in the prison population, which influences the cost to build and maintain prison capacity, is affected by choices about justice and sentencing policies. Similarly, perceived defence infrastructure needs are influenced by broader geopolitical trends. Modelling investment demand is further complicated by the fact that historical capital investment data groups justice and defence infrastructure together, making it difficult to analyse past trends.

We are less certain about our forward guidance in these areas.

This is an important area for future modelling improvements.

Investment responds to changing place-specific demands

Our forecasts focus on overall investment demands in each sector and the mix of factors that will drive investment.

The spending ranges of our projections are sufficient to meet different demands over time, if projects and programmes are prioritised and delivered efficiently. However, the long-term trends will have different impacts on investment demands in different places, and for different communities.

Our initial results shed light on the types of impacts that we can expect.

For example, population growth is faster in some regions than others. This is, resulting in more demand to build new infrastructure to service growth in faster-growing places, and a greater focus on maintaining and renewing existing infrastructure in slower-growing places. We expect that the modelling presented in the draft Plan could be improved to develop a deeper understanding of infrastructure investment demands at a regional level.

The infrastructure needs of Māori communities are different (Box 6).

For instance, many marae are in hazard-prone locations, which can affect access to them. Our existing analysis can be used to start considering impacts, but further work is needed.

Box 6

Drivers of demand we identify for future investment needs may affect Māori differently

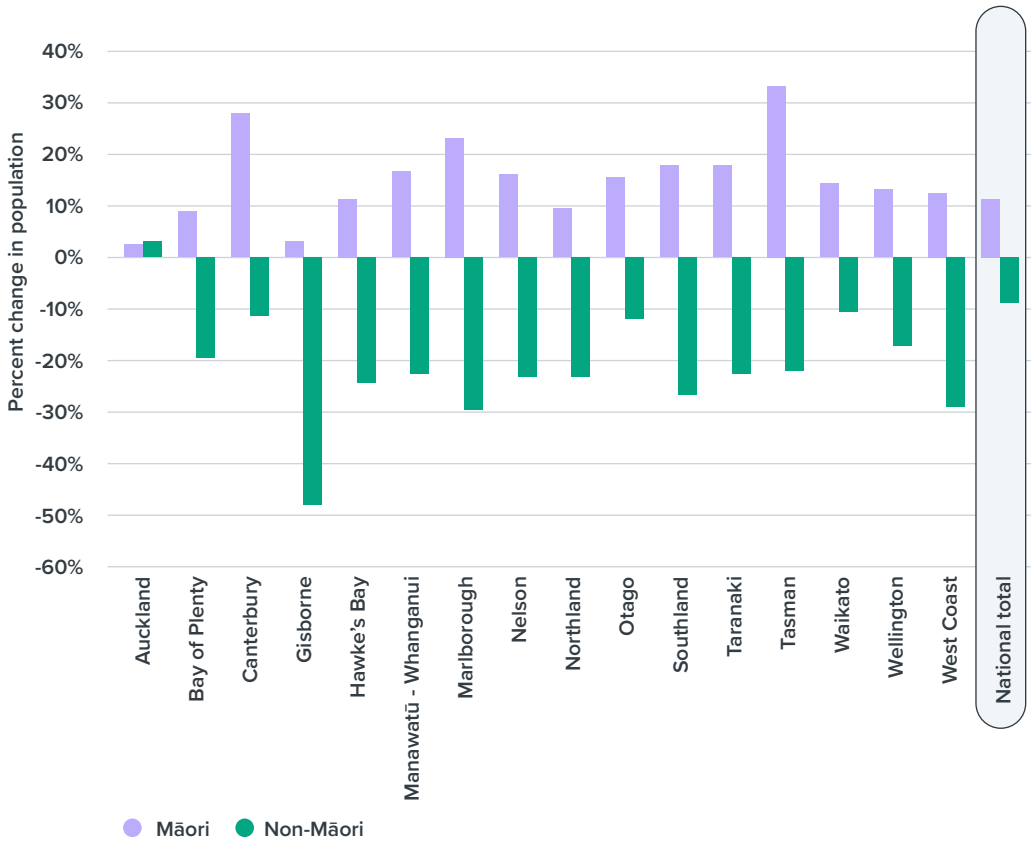
Certain infrastructure decisions may prevent the ability of Māori to exercise kaitiakitanga (guardianship) over te taiao (the natural world), or disrupt connections to their whenua (land), which are central to maintaining and enhancing Māori wellbeing.

While our forecasts present the overall picture of investment needs across sectors, we recognise that the story could be quite different for Māori populations.

A good example of this is the need for new or improved schools. Overall, the growth in the student-age population in New Zealand is expected to fall, which is reflected in our analysis as a subdued demand for future increases in investment beyond renewing existing schools.

This demographic dynamic is the opposite for Māori, which are expected to have significant growth in school-age populations (Figure 14). In addition to increased investment to meet expanding student rolls, this dynamic may also increase the availability of schools with Māori immersion settings.

Figure 14: Projected population growth between 2013 and 2023, 5 to 19 years of age



Note: Projected growth is from Stats NZ 2018–2043 population projections. Source: Analysing the Impact of Long-term Investment Drivers on Māori, Nicholson Consulting. Commissioned by the New Zealand Infrastructure Commission. (March 2025).

Investment choices are sympathetic to household affordability

We have choices about how we fund and finance this investment.

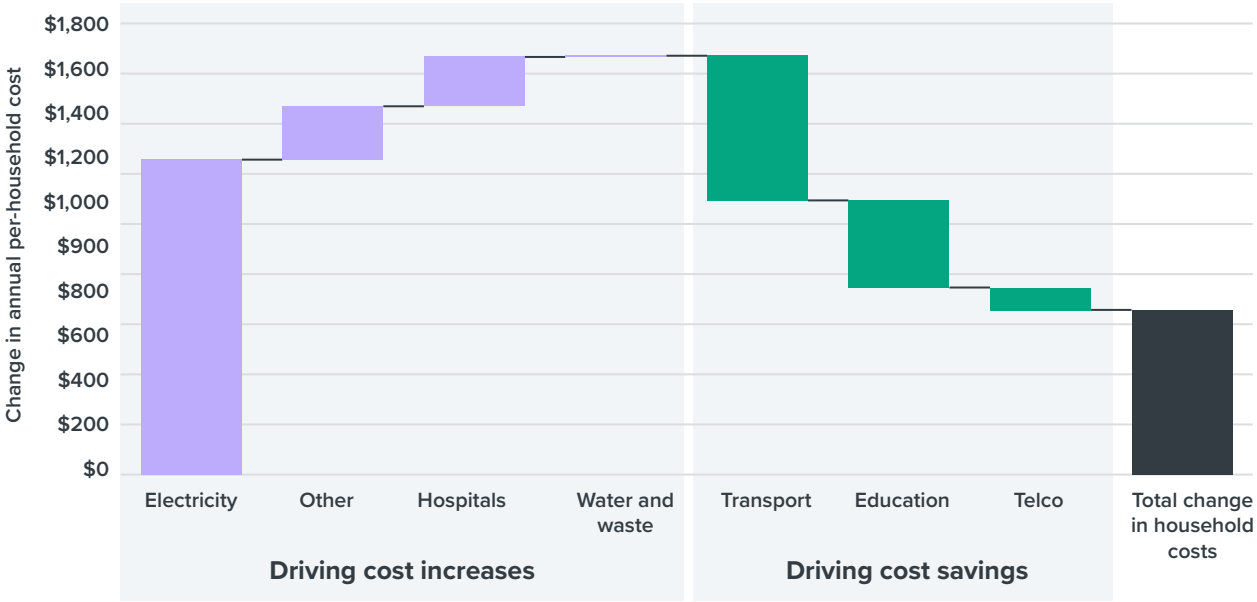
But regardless, New Zealanders will have to pay. Some costs will be met directly by households, through taxes, rates, or user charges. Others will be met by businesses and passed on to local or international customers. To understand whether our forward guidance is likely to be affordable for New Zealanders, the Commission has modelled household budget impacts based on scenarios for the mix of user charges and taxes typically used to pay for investment (Figure 15). This builds on our earlier research on household expenditure on infrastructure services. [37]

If implemented, our forward guidance would require households to pay more in charges or taxes in the near term (from now to 2035) but less in the long run.

This arises from higher electricity charges to fund required investment for decarbonisation in the next 10 to 15 years. After this, lower investment requirements in education and land transport infrastructure mean overall spending on infrastructure will reduce the impact on household budgets. We also expect that rising charges to fund this investment will be offset by lower household expenses on goods such as petrol, which we do not model. [38]

Infrastructure investment has an impact on household budgets

Figure 15: What our forward guidance would mean for the average household budget, 2035–2040



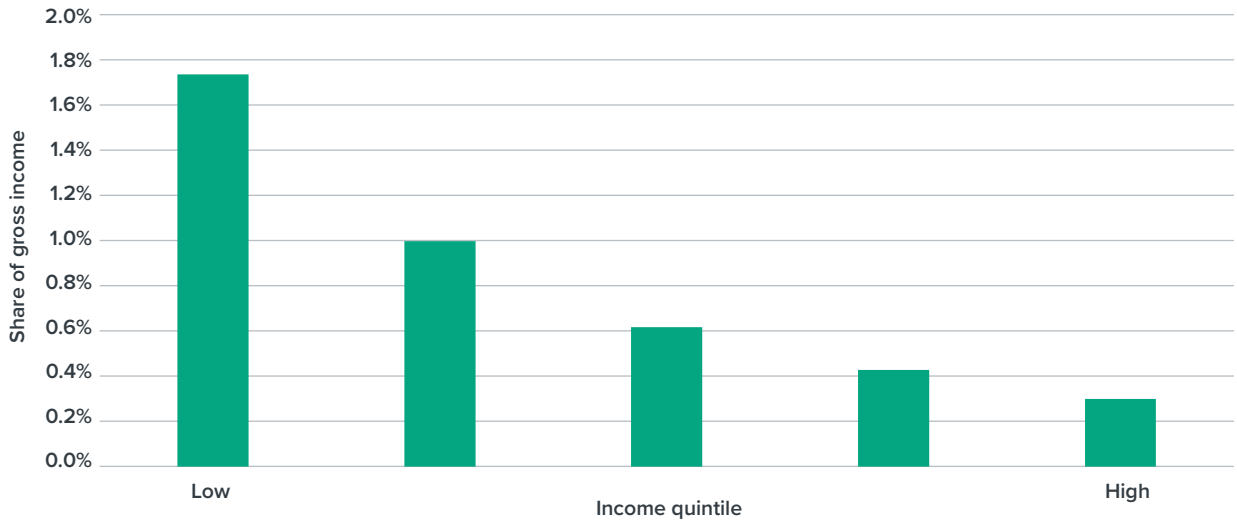
Note: Changes in cost are relative to expenditure on infrastructure services in 2019. Source: New Zealand Infrastructure Commission analysis and modelling.

The Commission expects the impacts to vary for different types of households over time (Figure 16).

In general, higher income households use more electricity, spend more on transportation, and pay higher income taxes that fund social infrastructure, so in dollar terms, they will pay more towards future investment needs. However, as a share of household income, lower income households will pay modestly more, which is also the case for current expenditure on infrastructure services across household income groups.

Similar to today, lower income households will contribute a higher share of their income to meeting future infrastructure needs

Figure 16: Impacts on the average New Zealand household budget of the Commission's forward guidance, by household quintile group, 2035–2040



Note: We have used Stats NZ data for this figure. The income quintiles are formed by dividing the total population into five groups. The bottom quintile (quintile 1) is the lowest 20. Source: New Zealand Infrastructure Commission analysis and modelling % of the population in terms of income, while the top quintile (quintile 5) is the highest 20% of the population.

3.3.3. Recommendations

Changes are needed to ensure that we can meet sectoral and regional investment needs.

Later in the Plan, we make several recommendations that are intended to address this. The first recommendation, in Section 4, addresses how we price and fund infrastructure to ensure we can afford to invest across all infrastructure sectors. The second set of recommendations, in Section 5, focuses on ensuring that central government understands its future investment requirements and uses this to inform fiscal strategy and agency long-term planning.

These recommendations are important for ensuring that we can achieve a balanced mix of investment that meets needs in all sectors and regions.

3.4. Infrastructure workforce must grow

Me tipu te rāngai mahi tūāhanga

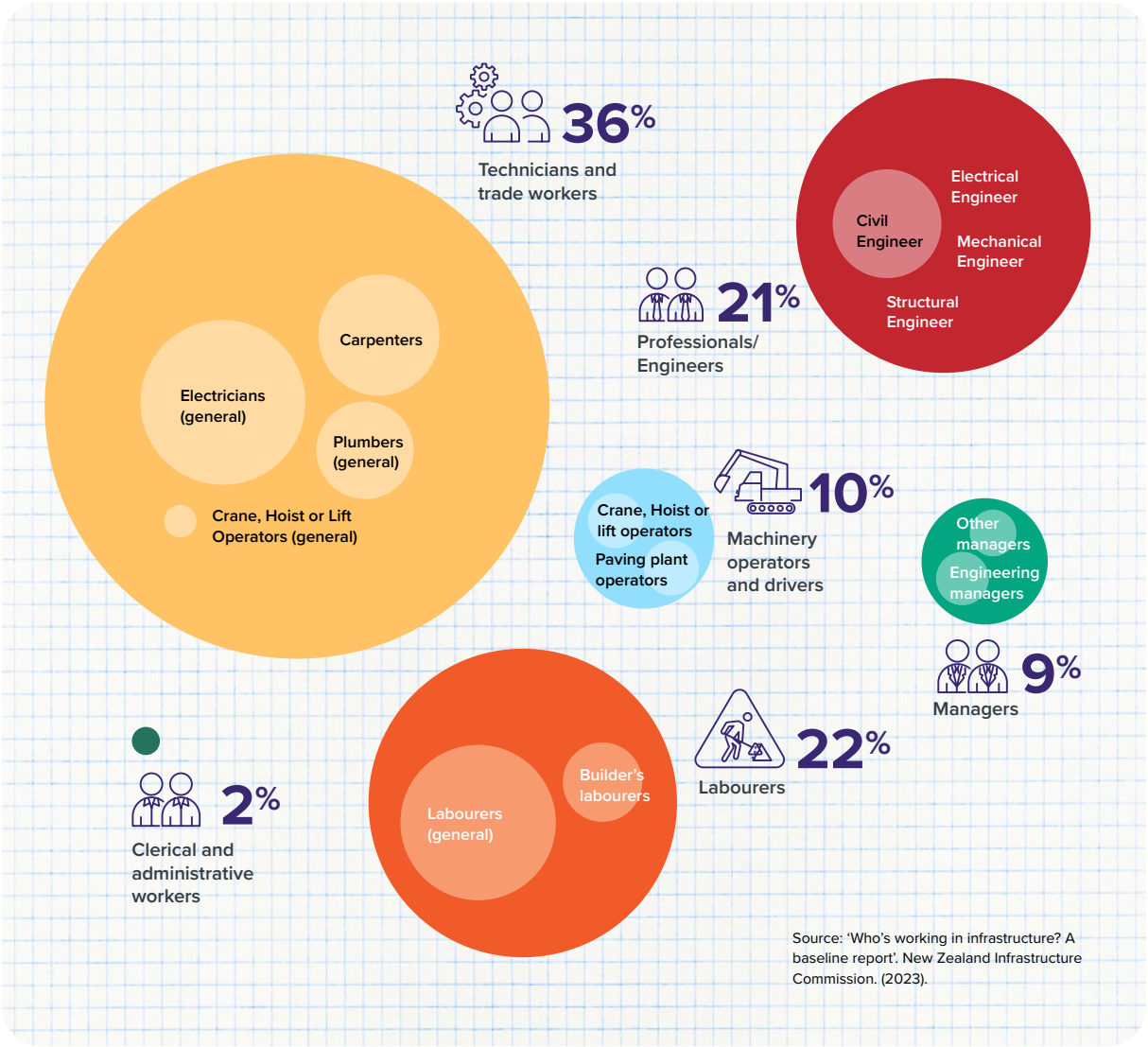
3.4.1. Context

New Zealand needs a workforce that is productive, efficient, and sized right for the job.

The existing infrastructure workforce comprises more than 100,000 full-time equivalent workers spread across more than 100 distinct occupations. Different skills are needed in planning, design, construction and maintenance of infrastructure (Figure 17). Importantly, constructing new projects accounts for less than half of the workforce. Around 14% of infrastructure workers are engaged in planning and design, 46% are constructing new assets, and a further 40% of infrastructure workers are engaged in asset management and maintenance.

Different occupations are engaged at various stages of the infrastructure lifecycle

Figure 17: Breakdown of the workforce by infrastructure lifecycle stage, 2022–2024



Source: 'Who's working in infrastructure? A baseline report'. New Zealand Infrastructure Commission. (2023).

3.4.2. Strategic direction

Long-term forward guidance is used to plan for a larger workforce

More infrastructure investment will require more workers.

We convert our forward guidance into estimates of future workforce demand for renewal and replacement of existing infrastructure and construction of new and improved infrastructure. These suggest that the total size of the infrastructure workforce will gradually increase over the next 30 years (Figure 18). Because New Zealand's population will grow older, a larger share of the working-age population will be engaged in the infrastructure workforce. However, a limitation for this modelling is that workforce needs will be affected by future productivity trends, which are hard to forecast but can add up over a multi-decade period.

Our forward guidance paints a different picture of workforce demand than project intentions.

The National Infrastructure Pipeline, covered in Section 6, compiles information on most infrastructure providers' current projects and their future project intentions. We model the workforce that would be required to deliver on these intentions. Because infrastructure providers do not plan projects in detail a long way in advance, project-specific workforce demands tail off after a few years.

Our forward guidance provides a longer-term view that can be useful for workforce policy.

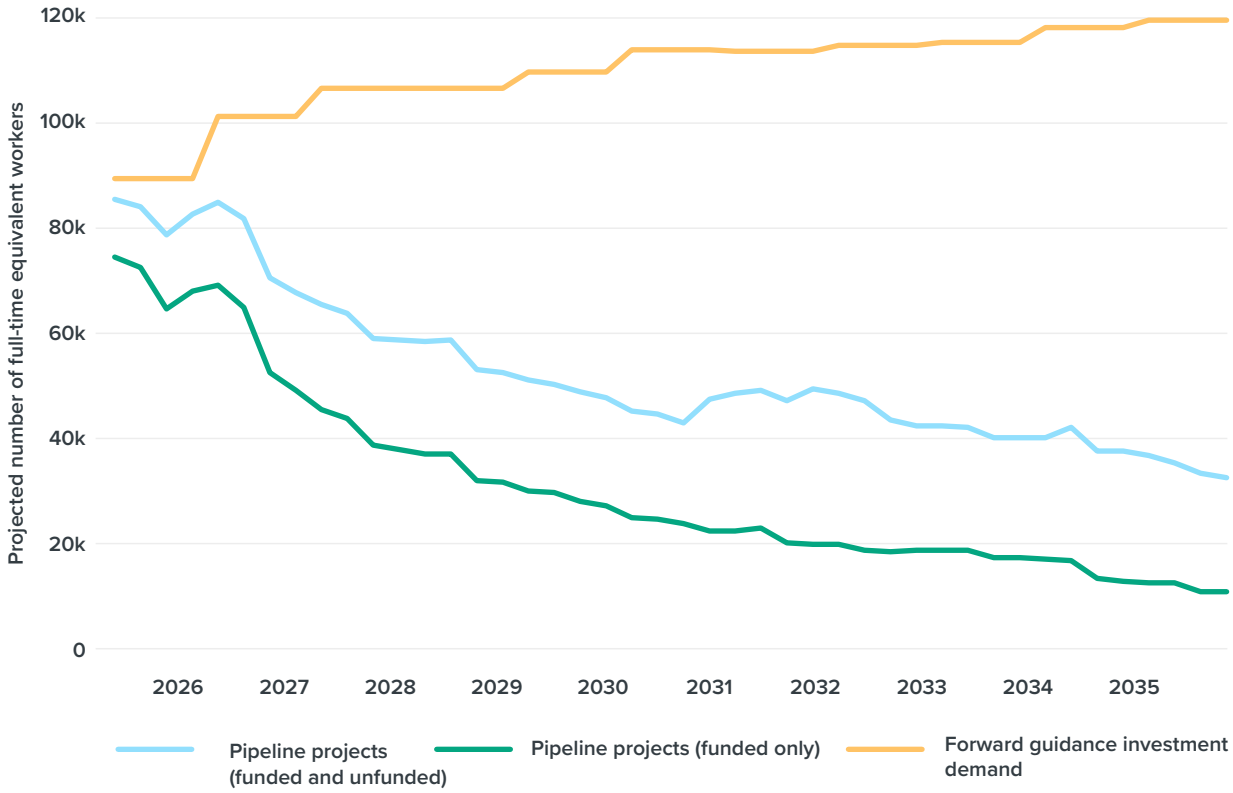
If longer-term infrastructure investment demand forecasts are used to inform other planning and funding processes, they will also provide a credible forward view that can be used to inform workforce development activities, such as vocational training and immigration policy settings. They can help us to get past short-term uncertainties about which projects will proceed.

Getting there requires consistent investment decisions.

New Zealand's infrastructure workforce is mobile domestically and internationally. It is hard to recruit, develop, and retain skilled people when there is significant uncertainty about the volume of civil, commercial, and residential construction work.

A longer-term outlook for infrastructure investment can get workforce planning beyond the near term

Figure 18: Future workforce demand to deliver forward investment guidance, compared with workforce demand for infrastructure providers' near term project intentions



Source: Infrastructure Commission analysis of workforce requirements to deliver our forward guidance on investment, compared with workforce requirements to deliver specific projects currently reported to the National Infrastructure Pipeline.

Infrastructure providers build and maintain capability to deliver

Government needs to be a sophisticated client of infrastructure.

Central and local government infrastructure providers must build and maintain their people capability to lead and deliver complex projects successfully.

Government infrastructure providers can procure required design and construction services from engineering and construction firms.

However, to be effective clients, they must have the internal capability to shape scope, oversee delivery, manage performance and remain accountable for outcomes. This is essential for central and local government infrastructure providers to manage risk and achieve value for money and cannot not be contracted out.

Improving procurement means developing project leadership and governance capability.

Capability exists within agencies and in Crown Infrastructure Development Ltd, which was established to lead the safe, efficient, and cost-effective delivery of quality infrastructure projects for Crown organisations. But more is needed to ensure that important capabilities required for successful project planning and delivery are available throughout the sector.

People capability is essential.

We need to develop and invest in the individuals holding important project roles, including project directors and senior responsible owners (who are typically called "project sponsors" in commercial

infrastructure providers) (Figure 19). This requires a sector-wide approach to establish pathways for formal development, stretch assignments, secondments, or progression between projects.

Improved governance can improve project delivery.

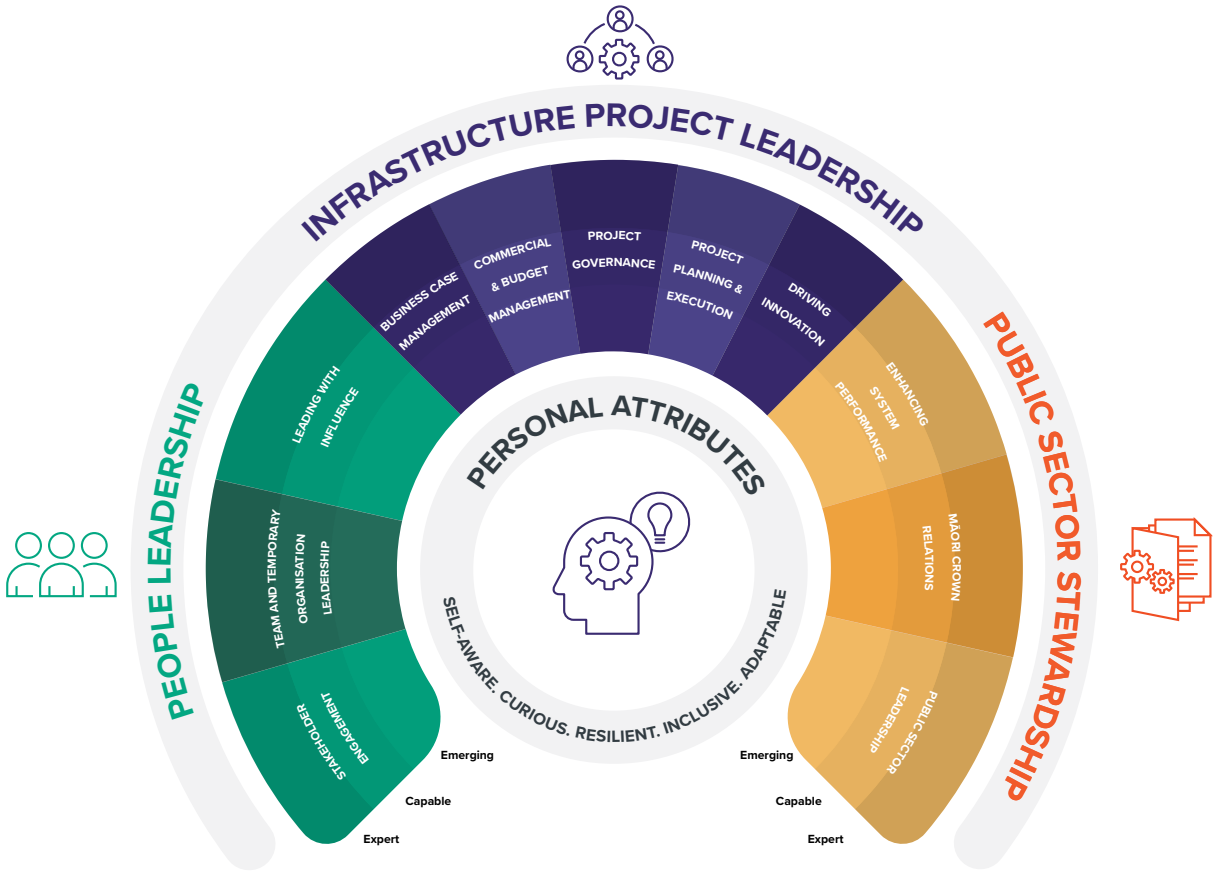
Public sector infrastructure leaders are often required to operate within unclear, fragmented, and overlapping governance structures, which reduce clarity and slow decision-making. This observation is reflected across multiple system reviews. The Treasury Gateway Lessons Learned data identifies governance confusion as a recurring issue contributing to project delays. [39] Similarly, the OECD's Infrastructure Governance Indicators report rates New Zealand as below the OECD average in six of eight governance indicators. [40]

The Commission has begun addressing these gaps through a suite of leadership initiatives.

The Project Director Capability Framework provides a nationally consistent benchmark for the capabilities required to lead complex infrastructure projects and has already been used to inform recruitment, development, and self-assessment tools across agencies. Complementing this, the Commission has developed best practice guides and recruitment tools to support better decision-making around the appointment of senior responsible owners and the recruitment of project directors. This ensures the right people are placed in the right roles with greater clarity and consistency.

Developing a nationally consistent benchmark for project director capability

Figure 19: Public sector Project Director Capability Framework



Source: 'Public Sector Project Director Capability Framework'. New Zealand Infrastructure Commission. (2025).

The sector establishes broader pathways into the workforce

The infrastructure workforce needs to draw on a wider talent pool to grow and meet demands.

In the near term, our ability to deliver more infrastructure is limited by the current size, composition and regional location of the workforce.

The infrastructure workforce is younger than the overall New Zealand workforce.

The occupations with the highest share of people aged 55 and over are electrical engineering technician (30% aged 55 and over), telecommunications technician (30%), engineering manager (28%), builder's labourer (27%) and programme or project administrator (27%). These occupations will face slightly higher medium-term needs to train and recruit younger workers as older cohorts retire. Opportunities exist to lift engagement and ensure that training and recruitment pipelines are accessible. This will be important if we are to continue to meet our workforce needs.

Māori make up a growing share of the infrastructure workforce.

At a national level, Māori workers make up 18% of the overall infrastructure workforce. Māori are more strongly represented in younger cohorts across most occupations. At present, labouring and machinery operating and driving occupations tend to have a higher-than-average share of Māori workers (27% and 30%, respectively). In New Zealand's overall workforce, 46% of Māori workers are now in high-skilled jobs, compared with 2018 when 37% of Māori were in high-skilled jobs. Additionally, between 2013–2023, Māori-owned construction businesses increased by over 35%.[41] These shifts reflect an opportunity for change within the infrastructure sector when it comes to recruiting Māori workers across a wider range of infrastructure occupations.

Women only account for 11% of the infrastructure workforce, compared with 47% of the overall New Zealand workforce.

Women make up a small minority of workers in all main categories of infrastructure occupations except clerical and administrative occupations. About one-fifth of professionals, such as engineers, are women, and 15% of labourers are women. Moreover, younger age cohorts have a similar share of women as older age cohorts, suggesting that gender balance won't change as older workers retire. These patterns may reflect ongoing challenges with both recruitment and retention of women in the infrastructure workforce.

3.4.3. Recommendations

Changes are needed to ensure that we develop an infrastructure workforce that has the right capacity and capability to deliver on future investment demands.

We make two main recommendations to improve workforce development planning and policy and to lift government's project leadership capability.

These recommendations are important for ensuring that we take steps to recruit, develop, and retain the skilled workforce required for infrastructure.

Recommendation 1

Clear the way for infrastructure

Workforce development: Workforce development planning and policy is informed by infrastructure investment and asset management plans and the New Zealand Infrastructure Commission's independent view of long-term needs.

This recommendation would need to be implemented through policy and operational changes, which we are investigating further.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 2

Clear the way for infrastructure

Public sector capability: Public sector project leadership is strengthened by standardising role expectations and improving career pathways.

This recommendation could be implemented by:

- Creating a clear, nationally recognised benchmark for leadership and delivery expertise, giving agencies and investors confidence that leaders who meet this benchmark can manage risk, navigate complexity, and deliver value.
- Establishing a sector-wide secondment and career development model to attract experienced practitioners from other sectors, support progression, cross-agency mobility, and the retention of high-performing infrastructure leaders.
- Requiring agencies to adopt nationally consistent role definitions, appointment criteria, and performance expectations for senior responsible owners and project directors, using tools such as the Project Director Capability Framework and best practice appointment guides.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

3.5. Planning needs to respond to uncertainty

Me urupare ngā whakamahere ki te pāhekeheketanga

3.5.1. Context

The Commission's forward guidance for investment is based on demographic and economic projections.

However, we know from history that forecasts are imperfect. Our modelling allows us to understand what may happen under different scenarios. For example, if our population or economy grows at a much slower or faster rate, this would affect our spending on infrastructure investment.

3.5.2. Strategic direction

Investment flexibility is protected as asset owners manage uncertainty

A significant amount of uncertainty is involved in infrastructure investment.

For instance, we estimate that overall infrastructure investment requirements over the next 30 years could range from around 5% to 7% of GDP. [42] This may not sound like a lot, but the range between these two figures would be equal to $8 billion in 2025.

Some sectors face more uncertainty than others.

For instance, future demands for renewal investment are more certain, because they mostly reflect how much infrastructure New Zealand already has, and its condition. Demand for new roads and schools to service population growth is less certain, because we are unsure how rapidly our population will grow in the future. It is even more difficult to predict how preferences and level of service expectations will change over time.

Some types of uncertainty are hard to model.

For instance, major technological innovations can cause people to demand entirely new types of infrastructure, to use existing infrastructure in different ways, or reduce the need for infrastructure all together.

Asset owners use sophisticated project planning to manage uncertain futures

The presence of uncertainty requires a more sophisticated planning approach.

This is because the costs of getting it wrong can be severe. Building less infrastructure than is demanded can lead to congestion and poor service quality, at least until investment catches up. Building above demand can be even worse, because costly assets that don't add revenue can become a financial burden for infrastructure providers. Ongoing operating losses and maintenance make it harder to respond to other emerging needs.

It's easier to respond when more choices are available.

When the future is uncertain, it makes sense to plan ahead, keeping options open rather than making large, irreversible commitments that may not pay off. Infrastructure providers can take several practical steps to deal with uncertainty.

Infrastructure providers can consider a broader set of future problems and opportunities in their planning.

Rather than focusing on a small number of options for investment, they should think about how they would respond to different scenarios for the future. This is the approach that electricity generators take. They investigate more projects than they may seek to build in the near term to ensure they can respond to rising electricity demand when it occurs.

Providers can invest in land protection for new infrastructure that may be needed in the future.

Depending upon the project, this may mean buying land for future projects, obtaining designations for the use of land, or obtaining resource consents to enable future construction. Even when uncertainty exists about whether projects are needed, land protection can be valuable. It ensures that it is possible to build new infrastructure cost effectively when there is demand for it. Other actions, like futureproofing for infrastructure assets to be expanded if additional demand occurs, can also be useful.

Networks can be expanded bit by bit, as demand grows, rather than a 'big bang' approach that adds lots of capacity well in advance of demand.

Large projects that are expected to take a long time to pay back are likely to be financially riskier than programmes of small projects. Pursuing them carefully, and selectively, is important when facing uncertainty.

3.5.3. Recommendations

Ongoing updates are needed to ensure that our view of needs remains relevant in a changing world.

We make one recommendation (that is focused on the Commission's work) to regularly update this information, along with other important information in the National Infrastructure Plan.

Recommendation 3

Establish affordable and sustainable funding

Sustainable investment: Forward guidance is refreshed through quarterly updates to the National Infrastructure Pipeline and ongoing updates to the Infrastructure Priorities Programme and the Infrastructure Needs Analysis.

The New Zealand Infrastructure Commission can implement this operationally, as enabled by our legislation, our Statement of Intent and Cabinet Office Circular CO (23) 9 on *Investment Management and Asset Performance in Departments and Other Entities*.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

4 Set up infrastructure for success: The operating environment

Me whakarite ngā tūāhanga kia angitu ngā mahi: Te taiao whakahaere

Smoothing the path for infrastructure to serve more of New Zealand's needs

Te whakamāmā ake i te huarahi e whakarato ai ngā tūāhanga i ngā matea nui ake o Aotearoa.

Summary

- New Zealand's infrastructure is delivered by a mix of central government, local government and commercial entities, each with different funding, governance and regulatory settings.
- Governance and oversight of land transport need particular attention, with no external regulator, despite growing investment, fiscal gaps and reduced reliance on cost-benefit analysis.
- Māori–Crown relationships play an important and evolving role in infrastructure. Strong trust-based partnerships, built on good faith, early engagement and recognition of mātauranga Māori, are essential to achieving better outcomes.
- Infrastructure should be funded according to its type, with user-pays approaches prioritised for network infrastructure, commercial self-funding for economic development assets and tax-based funding reserved for social infrastructure.
- Aligning pricing with best-practice principles helps ensure infrastructure is sustainably funded, efficiently used and delivers broad public benefit.
- Strong governance and oversight ensure infrastructure providers act in users' long-term interests.
- While local and commercial sectors benefit from economic regulation, central government relies on internal accountability through the Public Finance Act 1989 and the Treasury's Investment Management System.
- Well-designed, stable regulation is critical to enable infrastructure investment and maintain social licence. But rising compliance costs, frequent regulatory changes and inconsistent capability in resource management are delaying delivery and adding costs.
- A consistent and predictable policy, regulatory and legislative environment is necessary for enabling timely infrastructure investment, particularly in commercial sectors where demand is shaped by government decisions and uncertainty can delay or deter private investment.

continued...

Summary

- Better collaboration and coordination across infrastructure and land use, enabled by spatial planning, shared standards and aligned funding, can reduce delivery delays, lower costs, and improve long-term integration.
- Financing tools, such as public-private partnerships, special purpose vehicles and asset recycling help spread the upfront costs of investment and should be matched to project needs to support timely and cost-effective delivery across sectors.
- Policy settings that influence demand, such as emissions targets, pricing frameworks and service standards, must be consistent and predictable to give infrastructure providers the confidence to invest at the right time and scale, particularly in sectors like electricity where stable policy is critical to support decarbonisation and energy security.

4.1. Context: Central government sets the 'rules of the game'

Te Horopaki: Ka whakatau te kāwanatanga ā-motu i ngā 'ture o te kēmu'

The infrastructure sector is decentralised and complex.

Many organisations, across central and local government and the private sector, are involved in funding, financing, or providing infrastructure. The operating environment for infrastructure is also complex, with many factors affecting how easy it is to build, maintain, and operate infrastructure.

Different infrastructure providers have different governance arrangements and funding models.

This influences how they make decisions about investing in and operating their assets. Broadly speaking, we differentiate between infrastructure provided directly by central government, infrastructure provided directly by local government, and infrastructure provided by commercial entities, including state-owned enterprises and council-controlled companies. Sometimes, central or local government pays commercial entities to provide infrastructure assets or services to them.

Central government, local government and commercial entities all play important roles in investment.

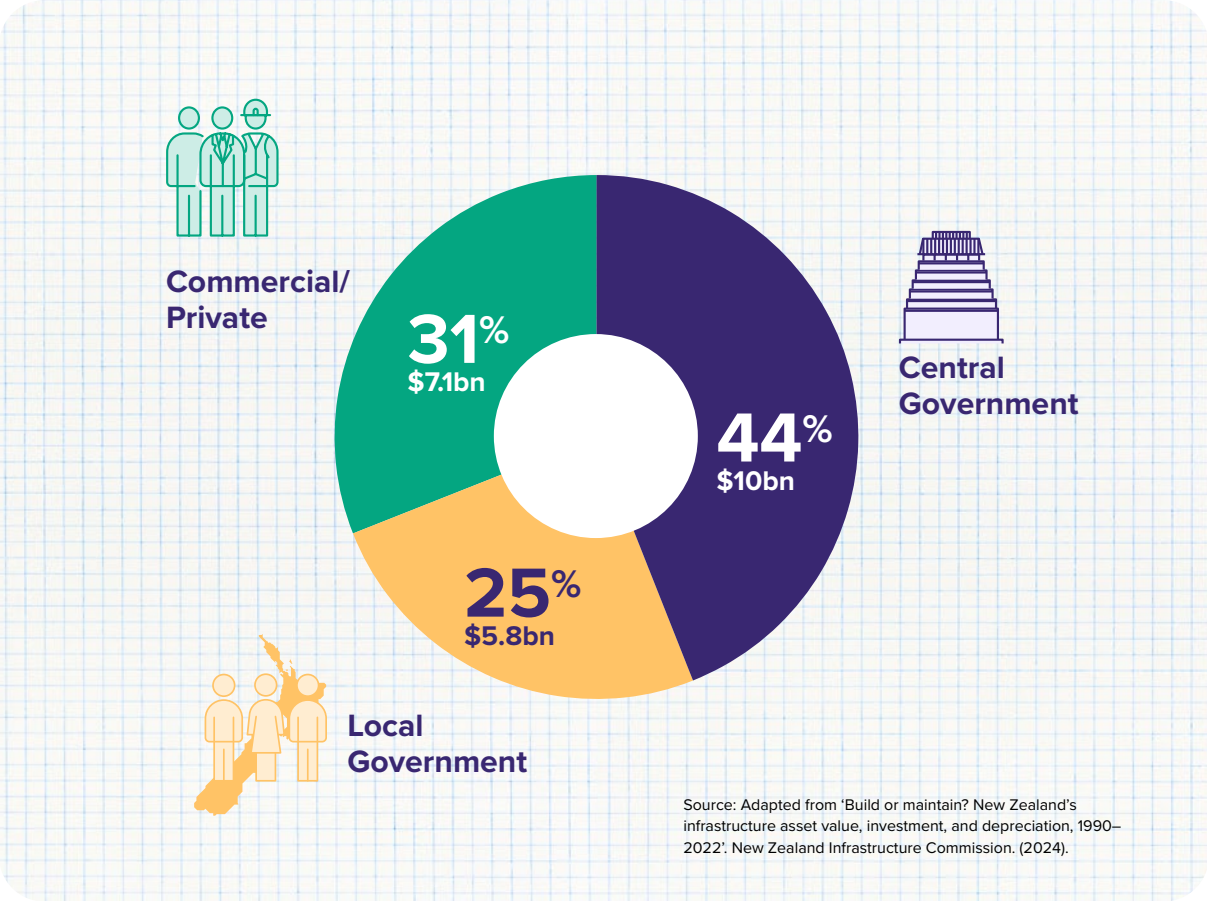
Central government accounts for a bit under half of total investment, and a similar share of total infrastructure assets (Figure 20). Commercial entities account for a bit under one-third of total investment and assets, and local government accounts for around one-quarter of the total.

Māori-Crown relationships play an important and evolving role in infrastructure.

The Treaty of Waitangi / Te Tiriti o Waitangi is a significant part of these relationships. Our previous advice in the Infrastructure Strategy included recommendations aimed at strengthening partnerships with and opportunities for Māori. Māori entities have become increasingly involved as investors in infrastructure assets, such as the geothermal industry. This has enabled Māori to exercise their role as kaitiaki, ensuring the protection and sustainable use of natural resources, as well as securing strong commercial outcomes for their people.

Central government, local government, and commercial entities all undertake significant investment

Figure 20: Estimated breakdown of infrastructure investment by ownership



Source: Adapted from 'Build or maintain? New Zealand's infrastructure asset value, investment, and depreciation, 1990–2022'. New Zealand Infrastructure Commission. (2024).

Central government sets the 'rules of the game' for all infrastructure sectors.

Its policy choices shape the operating environment for commercial entities and local government. Central government establishes oversight arrangements for other sectors, for instance by tasking the Commerce Commission with regulating infrastructure providers like electricity distribution businesses or council water service entities. It also writes resource management legislation and health and safety regulations that all infrastructure providers must comply with.

The operating environment must enable infrastructure providers to invest in the right things and deliver those investments efficiently.

As outlined in Section 1, meeting New Zealanders' current and future needs will require us to clear a path through complexity. This means ensuring that infrastructure providers have the funding they need; that they face oversight that makes them accountable to users; that they can coordinate with other parties where needed; and that they work within a stable and predictable policy environment that enables them to get on with investing over the long term.

This section presents recommendations to central government about steps to improve the operating environment for infrastructure investment.

This builds upon our previous advice in the NZ Infrastructure Strategy, which included various recommendations aimed at improving the operating environment for infrastructure. Rather than repeating previous recommendations we focus on identifying areas where additional recommendations are needed.

4.2. Establish sound governance and oversight for all sectors

Te whakarite i te mana urungi pakari me te tirohanga mō ngā rāngai katoa

4.2.1. Context

Governance is about aligning decision-making with the long-term interests of those using and paying for infrastructure.

Oversight arrangements should provide transparency of infrastructure providers' performance. They should also establish incentives to invest in and operate infrastructure in ways that benefit those who use and pay for services. Good governance requires providers to engage with users and collect information about their long-term interests. This includes their preferences, expectations, priorities and needs, as well as what they are willing to pay for.

Various governance and oversight arrangements are in place across the infrastructure system.

Central government, local government and commercial entities all have different oversight and accountability arrangements. These include legislative frameworks governing infrastructure providers, roles for sector regulators, transparency and consultation requirements, and audit and financial oversight rules. The work to ensure that infrastructure governance works well and enables us to identify and meet our infrastructure needs in a timely and consistent way requires ongoing attention.

4.2.2. Strategic direction

Effective oversight for all infrastructure sectors

Oversight mechanisms are needed in all infrastructure sectors, although the details can vary.

In the absence of oversight mechanisms, infrastructure providers that do not face competition may not act in the long-term interests of infrastructure users. Depending on the context, this can result in overinvestment (where infrastructure providers charge users more than they would prefer to pay to build infrastructure that is not valued by users), under-investment (where infrastructure providers spend less on their assets in order to use revenues for other purposes), or misinvestment (where infrastructure providers do not succeed in investing in the types of assets or services that are most valued by users).

Oversight mechanisms are already in place for most types of infrastructure (Table 4).

All infrastructure providers are governed under some form of overarching legislative framework, although the legislation varies. They all face audit requirements for their financial reporting. Many require financial oversight due to the need to borrow money through financial markets. All sectors must comply with cross-cutting regulation, such as the Health and Safety at Work Act 2015, or resource management consenting.

Central government, local government, and commercial entities have different governance.

Central government and local government are both governed by elected representatives accountable to voters. By contrast, commercial entities are governed by boards accountable to shareholders. Many commercial entities also have regulatory oversight of their expenditure and service quality, for instance through the Commerce Commission, and local government water infrastructure is entering this regime. The Māori Crown relationship is also an important aspect of the operating environment that we discuss further below.

Performance information should be transparent and accessible to people who use and pay for infrastructure.

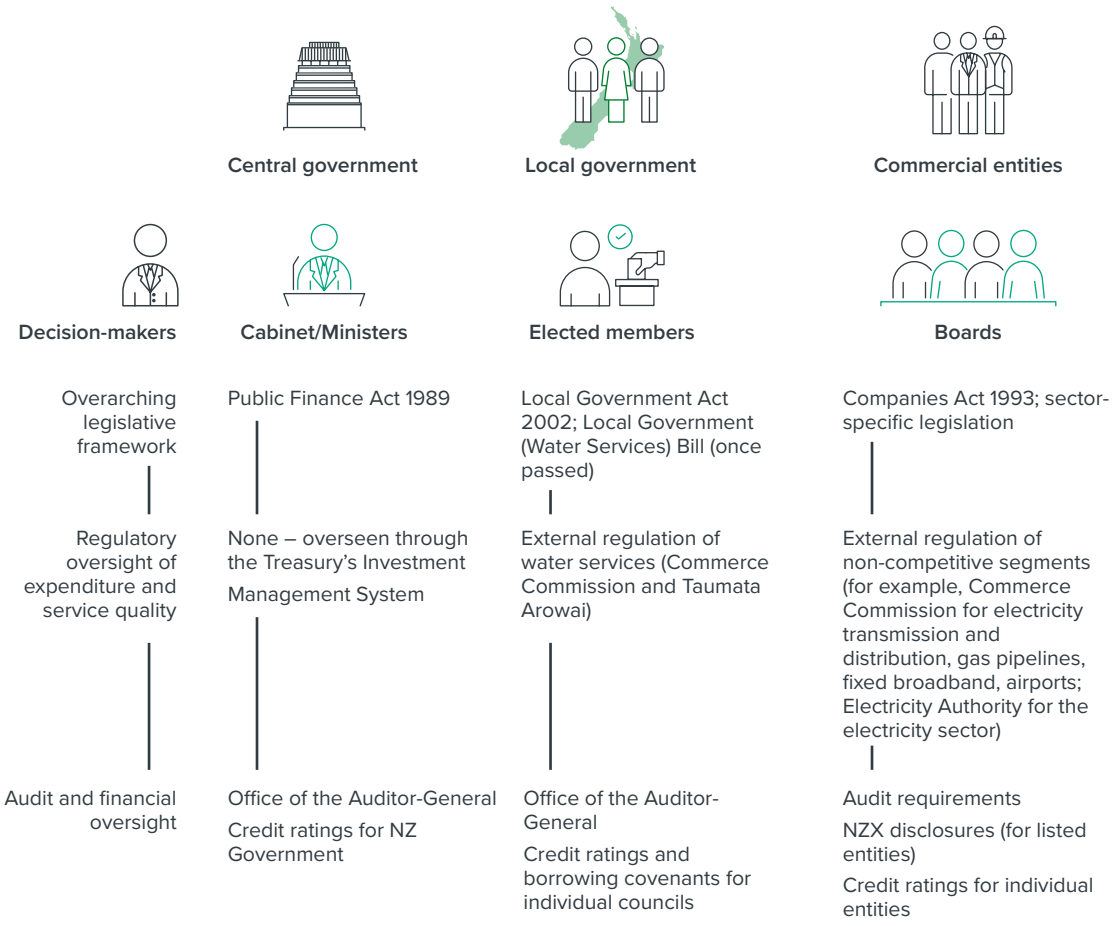
Transparency is needed to drive accountability. As a result, oversight mechanisms often require that relevant information on performance and spending is publicly available. Examples include the Commerce Commission's information disclosure regime for regulated sectors, information on electricity market performance published by the Electricity Authority, and spending and asset disclosures required by the Local Government Act 2002. For infrastructure provided by central government, the Public Finance Act 1989 provides the main framework for transparent reporting by central government agencies and the government as a whole.

Infrastructure providers should act in their consumers' interests.

One way to do this is through pricing models that incentivise them to provide infrastructure services that users value. Another approach is through consultation with users. Local governments are legally required to undertake public consultation before making decisions. Sector regulators like the Electricity Authority must also meet consultation requirements when making rules. In New Zealand, some infrastructure providers use participatory approaches to involve users directly in decision-making on complex topics. Examples include a community panel approach to considering congestion charging in Auckland [43] and a citizens' assembly to make decisions around the long-term future of Auckland's water supply. [44]

Governance looks different for central government, local government, and commercial entities

Table 4: Oversight and accountability mechanisms for different types of infrastructure



Note: 'Commercial entities' includes some organisations that are owned by central or local government but run on a commercial basis, like council-controlled companies, state-owned enterprises and mixed-ownership model companies, as well as some organisations that are run commercially but not for profit, like electricity distribution businesses owned by consumer trusts.

Māori-Crown relationships

The environment within which Māori and infrastructure providers engage on infrastructure initiatives is inherently diverse, fluid and complex. [45]

While there is ongoing discussion regarding what the Treaty / Te Tiriti requires, there appears to be consensus between mana whenua groups, the New Zealand courts and infrastructure providers that (whatever else it does or does not require) the Treaty / Te Tiriti obliges both Māori groups and government infrastructure providers to:

- act reasonably, honourably and in good faith, and be genuine, collaborative, and respectful
- listen to what others have to say, consider those responses and then decide what will be done.

Early, enduring partnerships are important for good outcomes (Box 7).

This includes working with iwi and other Māori groups to build capability before it's needed, providing clarity of roles early, making project information accessible to Māori groups, and recognising Māori groups' mātauranga (knowledge) as a factor that can add value to projects.

Box 7

Building trust-based ongoing relationships

Infrastructure initiatives that are seeking to establish relationships with Māori groups tend to face common challenges. These include identifying which Māori groups to engage with or who within a Māori group to engage with, challenges engaging with all the beneficial owners of multiple-owned Māori land affected by an infrastructure initiative, concerns about acquisition of land owned by Māori groups, and the need to budget or account for the costs of engaging with Māori groups.

To address these and other issues, our research shows a high degree of consensus between mana whenua groups and infrastructure sector participants on the need to establish and maintain enduring relationships between infrastructure providers and Māori groups.

Factors that both mana whenua groups and infrastructure providers see as necessary for such relationships to be established and maintained are that the relationships are based on trust with the parties:

- genuinely listening to what each other is saying
- having reasonably regular ongoing contact
- having a long-term focus and allowing the time for necessary conversations to occur
- genuinely seeking to address matters of importance to the Māori group (not only matters of importance to the infrastructure provider)
- taking a positive and constructive approach.

Source: 'State of Play: Māori engagement in infrastructure. Huihuinga kaiwhakarato – hanganga Māori'. New Zealand Infrastructure Commission. (2024).

Economic regulation applies to commercial and local government infrastructure

Economic regulation can help with oversight and accountability.

Often, this involves the Commerce Commission overseeing monopoly providers to replicate the effect of competition and ensure prices are fair, consumers are protected, and companies are customer-responsive and innovative.

Several types of economic regulation exist.

These include information disclosure regulation where the Commerce Commission requires and publishes information on infrastructure providers' performance. By contrast, price-quality regulation is where the Commerce Commission sets limits on how much revenue infrastructure providers can raise from users and the minimum service quality standards that must be met. Financial penalties can be imposed for not meeting compliance obligations, including service quality levels.

Economic regulation can work well for commercial infrastructure.

Commercial providers must pay for investment using their own revenue streams. They also have the autonomy to make their own decisions about investment. For commercial providers, the Commerce Commission's regulatory decisions can be binding on entities and financial penalties for poor performance provide a meaningful incentive to improve.

Economic regulation can also work well for local government.

Unlike commercial entities, councils do not have a profit motive, but they are expected to pay for investment using their own revenue streams and can make their own decisions about investment. Where policy settings remain stable, the Commerce Commission's oversight can be effective. The Commerce Commission will soon administer economic regulation of local government water and wastewater services, complementing the role of Taumata Arowai in regulating for safe drinking water. Stormwater could also be added in future by Order in Council.

Other tools can support the accountability of local government.

For instance, performance benchmarking being developed by the Department of Internal Affairs has similarities to information disclosure. [46] Such a tool would allow ratepayers to compare the performance of their council to others. Accountability is similarly supported through existing audit provisions under the Local Government Act 2002. However, expectations for accountability can be challenged by frequent changes to central government policy settings, like freshwater policy, housing, water services and resource management, among others.

Central government oversees itself through the Investment Management System

Central government infrastructure requires different oversight mechanisms.

Economic regulation is ineffective in this area. This is because it would require one Crown entity (the Commerce Commission) to oversee other public service entities (such as Health New Zealand or the Ministry of Education), when all are governed by Cabinet and Ministers and funded through the annual Budget. Consequently, regulatory decisions may not be binding if Cabinet chooses to override those decisions. Financial penalties for poor performance would not be meaningful either because the Crown would effectively be fining itself.

Transparency is needed to make central government accountable to the public.

In the absence of economic regulation, it is especially important that essential information is available to the people who use and pay for public infrastructure and vote in elections. This includes information on infrastructure spending, asset management and investment planning, the condition of infrastructure assets and outcomes delivered through investment.

The Public Finance Act 1989 is the main transparency and accountability mechanism for central government. [47]

The Public Finance System governs the use of public financial resources, including central government infrastructure assets and investment in those assets. The Government must report on its long-term fiscal objectives and short-term fiscal intentions. [48] The Act outlines principles of responsible fiscal management that the Government is expected to follow. These include requirements to maintain Crown debt at appropriate levels, as defined by the Government of the day, to ensure that operating expenses do not exceed operating revenues over a reasonable period, and to effectively manage fiscal risks. [49]

The Investment Management System provides oversight of central government agencies' investment and asset management activities. [50]

This is a component of the Public Finance System. It sets requirements for capital investment throughout the investment lifecycle, from problem identification to benefits realisation. Important requirements for central government agencies are set in a Cabinet Office Circular on investment management. [51]

The Treasury plays a significant role in overseeing central government infrastructure investment, alongside other agencies.

The Treasury leads the annual Budget process and the implementation of the Investment Management System. The New Zealand Infrastructure Commission is designated as a system leader for infrastructure investment, advising on investment and asset management through the Investment Management System. National Infrastructure Funding and Financing Limited and Crown Infrastructure Delivery Limited provide specialist support on funding and financing and project delivery, respectively. [52]

Governance is clarified for land transport investment

Challenges facing land transport governance and oversight need to be addressed.

Land transport is unusual, relative to other network infrastructure sectors like electricity and fixed-line telecommunications, because it does not have any external oversight or economic regulation.

Land transport is governed by sector legislation – the Land Transport Management Act 2003 – and provided by both local and central government.

State highways and rail networks are provided by central government, and local roads and urban public transport services are provided by local governments. These networks must work together as a system to ensure investment is coordinated and the most cost-effective options for providing services are chosen.

Central government has established arms-length entities to provide networks.

This includes a Crown agency, the New Zealand Transport Agency Waka Kotahi (NZTA), which provides state highways and co-funds local roads and urban public transport services, and a state-owned enterprise, KiwiRail, which provides rail infrastructure and services. Because NZTA co-funds local government spending, it helps to oversee their investment and performance, but it does not face external oversight of its spending plans and asset condition. In principle, these entities should be self-funding from user charges.

The Government Policy Statement on land transport directs spending in the sector.

This allows the Minister of Transport to set objectives and priorities for land transport spending and define funding ranges for individual categories of investment. Recent Government Policy Statements, including for 2024, have also set expectations that NZTA prioritise specific investments, such as the Roads of National Significance. It is updated every three years, and the Ministry of Transport is responsible for monitoring outcomes against its objectives. In recent years, central government transport infrastructure providers have been expected to spend significantly more than they are able to collect in revenue, posing challenges for fiscal sustainability (Box 8).

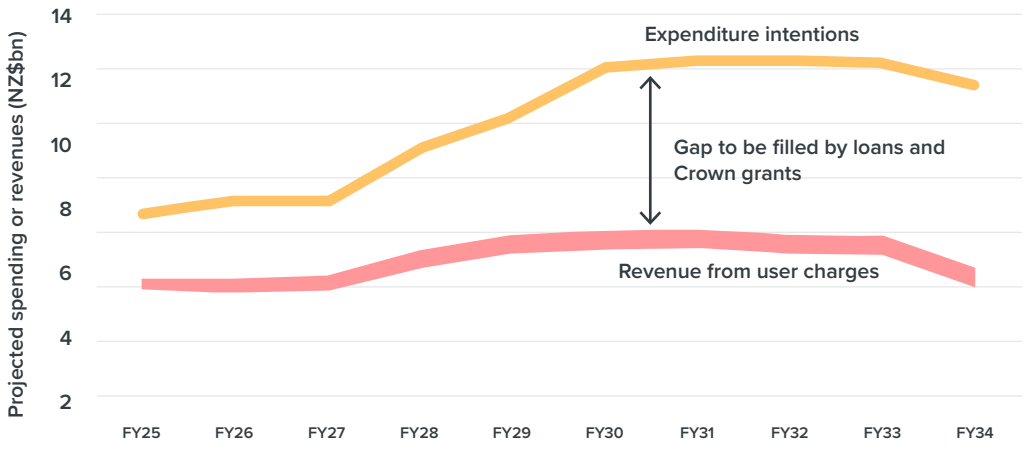
Box 8

Land transport funding pressures

Land transport currently faces a misalignment between investment plans or expectations and the user revenue streams available to fund them. Since the late 2010s, central government spending on land transport (both road and rail) has significantly exceeded user revenues, and this is expected to continue over the next decade (Figure 21: New Zealand plans to spend much more on land transport than it collects from users).

The 2024–2027 National Land Transport Programme includes $32.9 billion in expenditure over a three-year period. Of this, $14.3 billion is available from transport user revenues and local government is expected to contribute $5.8 billion, leaving a gap of over $12 billion in a three-year period. [53] This must be topped up by Crown grants and loans, in turn limiting the money that is available for other types of central government infrastructure. In early 2024, the Treasury identified a potential $27 billion to $38 billion gap between expenditure and revenue over the next 10 years. [54]

Figure 21: New Zealand plans to spend much more on land transport than it collects from users



Source: NZTA National Land Transport Programme 2024-2027.

Despite significant investment intentions, land transport is also dealing with issues around deferred maintenance and renewals. Starting around 2014, low renewal investment has led to a modest but noticeable trend towards declining surface quality that is most noticeable on lower-traffic roads.

Rising investment has also coincided with a declining influence of cost-benefit analysis on transport project selection. Measured value for money from investment appears to have declined significantly since the 2000s, although it is difficult to provide exact comparisons because project information is not consistently released and cost-benefit analysis practices have changed several times. This has led to increased estimates citing non-monetary benefits like user comfort, and safety.

Sources: 'Advice on challenges and opportunities in the transport system', New Zealand Infrastructure Commission, (2025); 'Briefing to the Incoming Minister of Transport', Ministry of Transport, (2025).

4.2.3. Recommendations

Oversight and accountability mechanisms must be fit for purpose across all infrastructure sectors.

We make two recommendations to address this. The first speaks to what is needed across all infrastructure sectors, while the second identifies a need for reform in a single sector – land transport – where investment intentions and user revenues are misaligned.

In Section 5, we make further recommendations on steps that are needed to strengthen the Investment Management System.

These recommendations are important for ensuring that infrastructure providers have a clear authorising environment for investment and invest in response to New Zealanders' needs.

Recommendation 4

Clear the way for infrastructure

Consumer protection: All infrastructure providers, regardless of sector have clear and well-understood transparency and accountability mechanisms that ensure that consumer interests are protected.

This recommendation would need to be implemented through policy and operational changes, which we are investigating further.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 5

Establish affordable and sustainable funding

Transport system reform: The land transport funding gap is closed by requiring user charges to fully fund planned investment.

This recommendation would need to be implemented through policy and operational changes, which we are investigating further. To address identified issues, we expect implementation to address decision-making about investment priorities and land transport pricing.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

4.3. Use fit-for-purpose pricing and funding tools

Whakamahia ngā utauta utu me te whiwhi pūtea whaitake

4.3.1. Context

Pricing and funding settings determine what resources are available to build, maintain, and operate assets.

When working well, these settings should enable infrastructure providers to invest sufficiently to meet long-term user demands, while discouraging unaffordable spending.

These settings also help to maximise the benefits we achieve from infrastructure networks.

For example, time-of-use charging for congested urban road networks encourages people to travel during less congested times or to take public transport instead, speeding up traffic and increasing the efficiency of the overall transport network.

Pricing and funding approaches vary throughout the infrastructure sector.

They are guided by different legislation and subject to different decision-making processes. Central government does not directly set prices for many types of infrastructure, but its policy choices often affect how other infrastructure providers can fund themselves. Ongoing work is needed to ensure that pricing and funding approaches are fit for purpose.

4.3.2. Strategic directions

Pricing and funding tools are optimised for different infrastructure services

Pricing and funding approaches should ensure we get enough investment in all sectors.

However, the right approach is different in different sectors, depending upon the types of services that they are providing (Figure 22).

We differentiate infrastructure services that can pay for themselves and those that cannot.

Network infrastructure, like transport, water, electricity, and telecommunications, is different from social infrastructure, like schools, hospitals, courts, prisons, public parks and open spaces, and the defence estate.

Network infrastructure should fund itself by charging people who use the infrastructure or directly benefit from it.

This is because most of the benefits of network infrastructure flow to the people who use the network. This doesn't necessarily mean that every piece of a network needs to 'pay its own way'. For instance, some roads might return less in user revenues than they cost to maintain, and urban public transport services might require cross-subsidies from other transport users. It is appropriate for some parts of a network to subsidise where there are broader benefits or equity considerations exist. But the network should cover its costs.

Social infrastructure generally needs to be funded from general taxes or local government rates.

This results in more consistent and equitable access to services, like education and healthcare, that are needed to participate in society. [55] In other cases, like courts, prisons, and Defence estate, social infrastructure provides broad benefits to society, rather than to the people who are directly using it. For instance, court infrastructure helps provide confidence in the rule of law. However, public funding of these services does not always imply public ownership of the infrastructure assets, because it is sometimes more cost effective to lease assets or contract others to provide services.

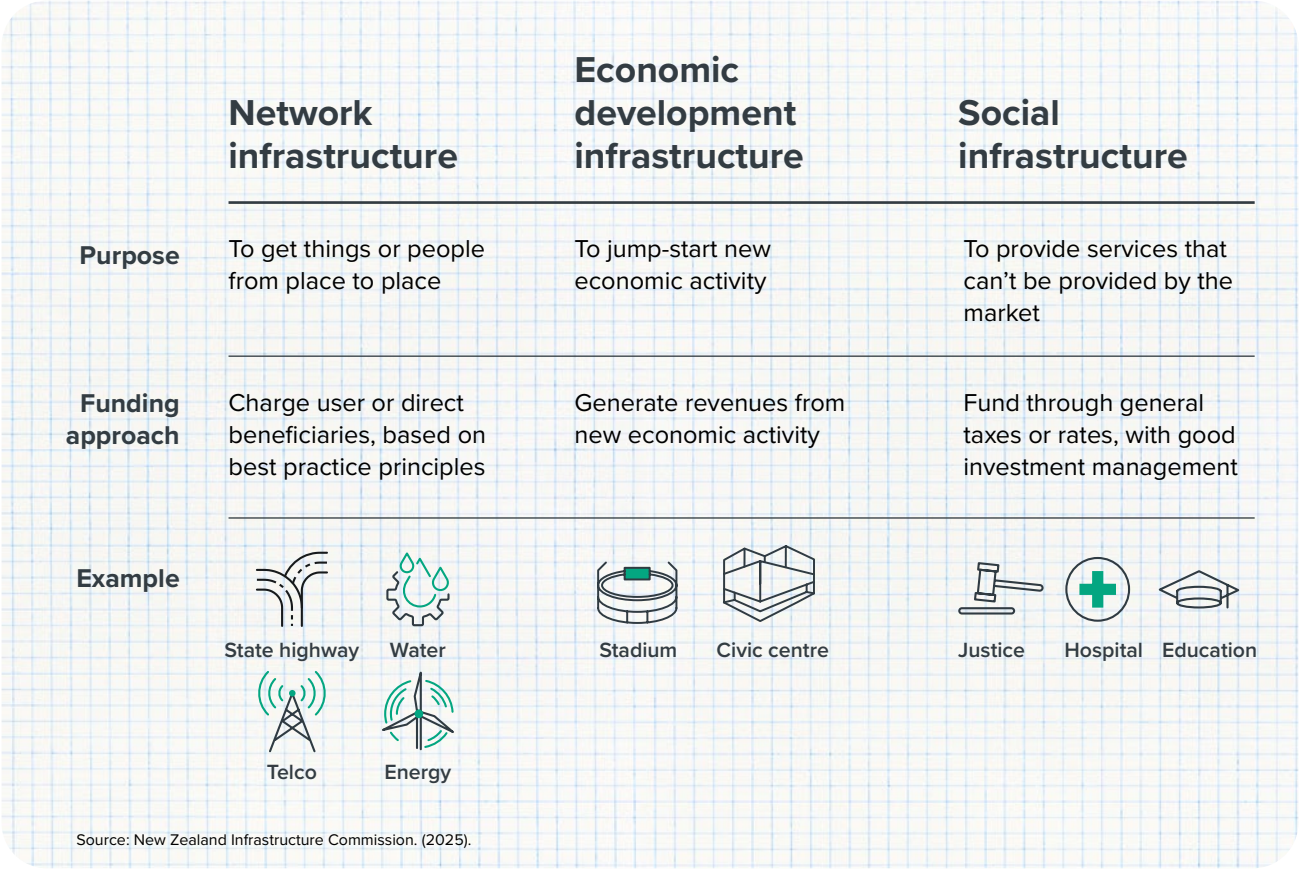
Economic development infrastructure should generate enough revenue to pay for itself.

This is not a well-defined type of infrastructure but it includes projects like convention centres, business accelerator precincts, and stadiums that are intended to jump-start new economic activity. Revenue generation is essential for economic development infrastructure because it provides a 'market test' of whether it will succeed in growing the economy. Revenues could be earned directly from users or indirectly through levies or charges on wider beneficiaries. For example, Wellington's Sky Stadium earns revenues from ticket sales and from a targeted rate levied on nearby businesses that benefit from additional visitor activity, and Eden Park Trust (Auckland) can cover operating costs (although not depreciation on its existing assets) through ticket sales.

When network infrastructure and economic development infrastructure is better at funding itself, more money is available to invest in social infrastructure.

Central and local government have limited tax and rate revenue for investment, so when the cost to provide roads and stadiums spills over into general tax or rate revenues, less is available to invest in schools, hospitals, parks and other social infrastructure.

Figure 22: Pricing and funding approaches for different types of infrastructure



Source: New Zealand Infrastructure Commission. (2025).

Users or direct beneficiaries pay the full cost of network infrastructure

Network infrastructure should be priced to achieve three main goals (Figure 23).

The first is that user revenues should pay the full cost of providing infrastructure and services. This is important for ensuring that we can provide and maintain the infrastructure we need. The second is that prices should encourage people to use

networks efficiently, resulting in high use but discouraging excessive congestion. The third is that pricing should be used to share the benefits of networks widely through society, once the other two goals have been achieved.

When more investment is needed, it should be funded out of increased user revenues.

This could be done by increasing existing charges, introducing new charges (like tolling new roads), or investing in ways that increase usage and thereby bring in new revenue from existing charges.

Multiple ways can be used to charge users or direct beneficiaries.

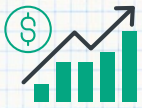
These include charges paid at the point of use, like fuel taxes, public transport fares and electricity supply charges, and charges for access to the network, like development levies on new houses and fixed monthly charges for mobile phones. How we choose to price networks can affect how people use those networks and how the costs of investment are distributed between different users, for instance between low-income and high-income households. When considering new capital investment, broad resistance to increased network charges may suggest that most users do not think project benefits are proportionate to project costs.

Energy and telecommunications infrastructure performs well against these goals, while land transport and water pricing needs to improve (Box 9).

The need is ongoing for improvement to pricing practices, especially for land transport and water.

Sectors with good pricing practices are better able to raise funds for maintaining and improving assets

Figure 23: Best-practice principles for network infrastructure pricing



Goal 1:

Pricing should guide efficient investment in networks

- Pricing should enable a level of investment that users value and are willing to pay for
- Overall user revenues should cover the full whole-of-life cost to provide infrastructure services
- Prices should encourage providers to improve quality of service
- Prices should allocate risks fairly and efficiently

Goal 2:

Pricing should guide efficient use of networks

- Prices should encourage efficient and appropriate network use
- User charges should signal whole-of-life costs to provide services in different places
- Prices should signal externalities to users to avoid wider costs of network use
- User-funded cross-subsidies are appropriate to fund services or assets with broader benefits
- Price-setting should be transparent and reasonable

Goal 3:

Pricing should help share the benefits of networks

- Efficiency improvements should be passed on to users through lower prices
- Where possible, users should have price-quality trade-offs
- Public subsidies can be used to accomplish other goals for networks, as long as they do not undermine the above pricing principles

Source: Adapted from 'Approaches to Infrastructure Pricing Study: Part 2 – Current Pricing Analysis'. PwC. Report for the New Zealand Infrastructure Commission. (2024).

Box 9

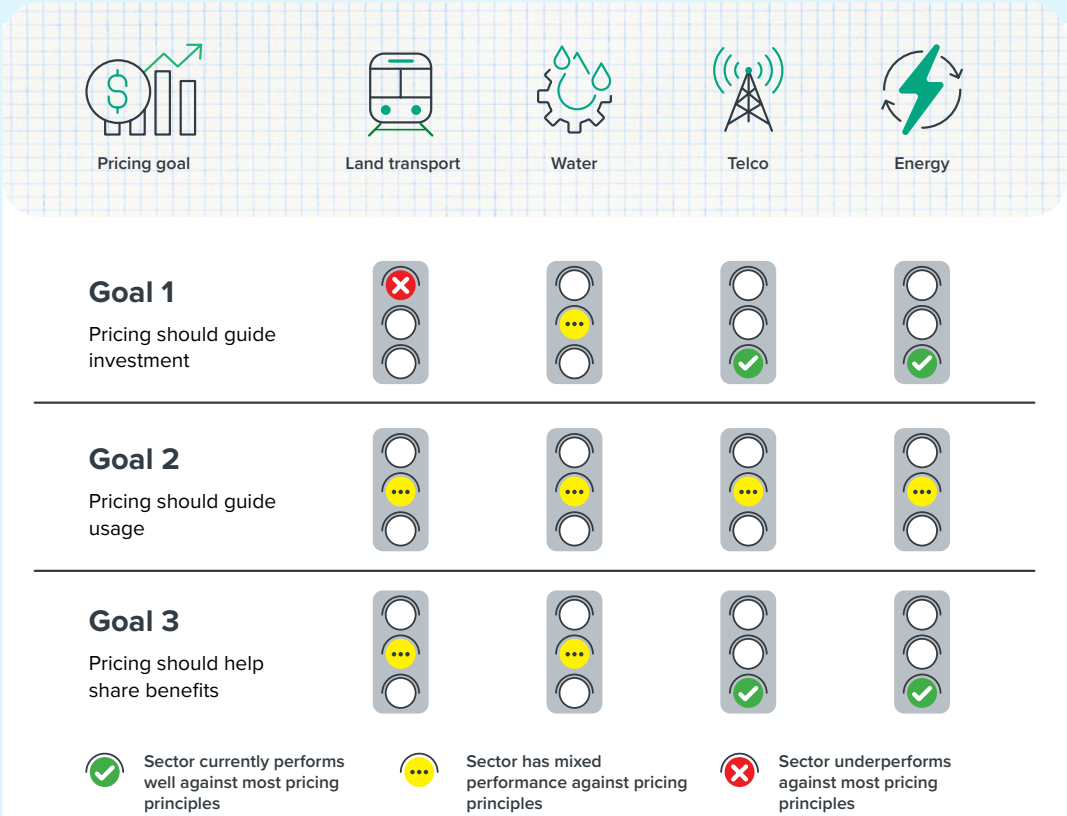
How network infrastructure sectors are performing against pricing goals

A 2024 study of infrastructure pricing found that practices for electricity and telecommunications networks are generally well aligned with network pricing goals (Figure 24). These sectors predominantly collect their revenue through direct user charges and operate within market structures and policy settings that support good pricing. By contrast, land transport and water pricing does not perform as well against these goals.

For instance, most road transport users do not pay directly for the transport services they use, disincentivising efficient use. While opportunity exists for transport pricing to demonstrate where road users value services, investment decisions are typically driven by policy rather than price signals. This arrangement contributes to transport investments exceeding demand (Box 8).

Historically, a council's water service costs and revenues could be pooled with those of other council services, making financial and service performance difficult to measure. The costs of delivering water services are directly influenced by the volume of water collected, treated and distributed to users. But when revenue is collected through local government rates, users have limited visibility of the water services they use, the cost of those services and the extent of cross-subsidisation between users.

Figure 24: Performance against best practice goals by sector



Source: 'Approaches to Infrastructure Pricing Study: Part 2 – Current Pricing Analysis'. PwC. Report for the New Zealand Infrastructure Commission. (2024).

Pricing practices are improving.

Councils are increasingly moving toward water metering and volumetric charging. This pricing practice incentivises conservation and leak reduction. It also helps councils defer the need for expensive capital upgrades. Current water sector reforms are setting requirements for financial sustainability, which in turn should encourage service providers to consider pricing models that better align with best-practice principles.

Similarly, the introduction of 'time-of-use' charging legislation is an important step in enabling the use of pricing to encourage trips at less congested times of day. Tolling reform also provides opportunities for greater use of tolls to demonstrate where road users value additional capacity.

Financing tools spread the upfront costs of investment

Once appropriate pricing and funding methods are in place, infrastructure providers should consider options for financing the upfront costs of investment.

Funding represents all the money needed to pay for infrastructure, which can come from users, taxpayers and ratepayers. Financing is about when we pay for infrastructure. It could mean using cash surpluses now or borrowing and repaying later. Financing is about how we align the timing of revenues from an infrastructure asset to repay the money needed to build it.

Many financing options are available.

The Treasury's 'Funding and Financing Framework' encourages consideration of all options.[56] These range from comparatively simple options, like taking out bank loans or issuing government bonds, through to more complex options like establishing special purpose vehicles or public private partnerships to finance projects. Infrastructure providers can also raise cash for investment through 'asset recycling', which means selling existing assets to free up money to buy new ones. Increasingly, iwi entities are seeking a role in financing and owning infrastructure, through a range of mechanisms.

Central and local government infrastructure providers can seek support for complex financing options.

National Infrastructure Funding and Financing Limited is central government's centre of expertise on funding and financing. It provides specialist expertise in public private partnerships and special-purpose financing transactions under the Infrastructure Funding and Financing Act 2020.

4.3.3. Recommendations

Appropriate pricing and funding tools are required for all infrastructure sectors.

We make one recommendation to address this. The recommendation speaks to what is needed across all infrastructure sectors, as well as best practices for network infrastructure pricing. In Section 5, we make further recommendations aimed at ensuring that central government accurately forecasts what is needed for social infrastructure that is funded through the Budget.

These recommendations are important to ensure that infrastructure providers are able to invest the right amount in existing and improved assets to meet future demands.

Recommendation 6

Establish affordable and sustainable funding

Funding pathways: Funding tools are matched to asset type (user-pays for network infrastructure, commercial self-funding for economic-development assets, and tax funding for social infrastructure) to keep the overall capital envelope affordable. User-pricing principles are applied across all network sectors so user charges fully fund investment, guide efficient use of networks and distribute the benefits of network provision.

This recommendation would need to be implemented through policy and operational changes, which we are investigating further. To address identified issues with land transport and water pricing, we expect implementation to include volumetric charges for water use, time-of-use charging on transport corridors and, where appropriate, value capture levies to help pay for investment with broader beneficiaries.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

4.4. Provide cost-effective coordination tools

He whakarato i ngā utauta ruruku utu whaitake

4.4.1. Context

Many interdependencies and interactions exist within infrastructure networks.

These can occur between different types of infrastructure and between infrastructure and other land uses. For example, managing a national electricity grid means balancing how much electricity generation is entering the grid and how much electricity is being used on a continual basis. Similarly, decisions on the location of hospitals and schools can affect how a transport network functions.

Infrastructure providers often need to act independently.

For example, electricity generation is separated from electricity transmission grid operation because benefits can be gained from having multiple electricity generators competing to supply electricity to consumers at the lowest price. Similarly, although schools and hospitals can benefit from coordination with land transport, they are planned and managed by different organisations because they have different demands and user needs that need to be addressed separately.

Coordination mechanisms are needed for infrastructure to work effectively.

Coordination within sectors can set and enforce standards, rules and regulations that maximise the benefits of infrastructure and reduce the cost to provide it. Coordination between sectors can ensure services are built and operated in a cost-effective way. For example, road corridors often carry water, energy and telecommunications networks, so road controlling authorities are required to coordinate work on these assets. [57] And coordination between infrastructure provision and land-use planning is important for ensuring that infrastructure can be used by as many people as possible.

Coordination mechanisms should be cost effective.

Sharing information and working together can impose costs on infrastructure providers. Stronger forms of coordination, like requirements to reach agreement before investing, can slow down investment by limiting infrastructure providers' autonomy to invest. Processes should be designed to balance the opportunities and costs of coordination. Change is needed to give infrastructure providers the right tools to coordinate with each other and other land uses to achieve good outcomes from investing in and operating infrastructure.

4.4.2. Strategic directions

Institutional design is carefully considered

When reviewing the structure of infrastructure sectors, government should consider options for blending central standard-setting and local provision.

Consolidation of infrastructure providers into larger entities is sometimes pursued to ensure consistent standards and minimise spatial inequalities, or to achieve economies of scale for important functions. However, this is only one of the structure options available to provide these benefits. Another common approach is to centralise decisions about technical or service quality standards and allocation of funding to achieve these standards, while delegating decisions about infrastructure provision and service delivery to a lower level. This can provide for greater local responsiveness and innovation.

Different institutional arrangements in different sectors and countries can provide lessons.

For example, when we compare New Zealand to other OECD countries, with similar population profiles and a similar commitment to universal public health care, we find varying approaches to service design and delivery. Australia, Denmark and Norway provide services through a delegated delivery

model. This means they set service standards and allocate funding centrally, but delegate service delivery and infrastructure management to subnational governments or regional health authorities. While other factors affect hospital performance, such as hospital staffing and primary and preventative health, the Nordic countries appear to extract more performance out of their hospital infrastructure in terms of measures like the number of in-patient discharges relative to the size of the hospital population coverage.

Outcomes from institutional design choices should be monitored.

This includes impacts on the efficiency of infrastructure services and the degree to which services are provided in an equitable and timely way. Establishing good benefits realisation review frameworks is especially important when implementing large institutional changes.

Good network pricing coordinates investment and optimises asset use

Pricing and funding settings can be an effective coordination mechanism.

This is because they create financial incentives for different organisations to coordinate.

Best practices for network infrastructure pricing support coordination.

Network pricing should signal where it is cheaper or costlier to build additional network capacity and when demand exists for more investment. The electricity sector uses this approach to coordinate investment decisions between electricity transmission (supplied by Transpower), electricity distribution (supplied by 29 electricity distribution businesses), electricity generation (supplied by various major and minor companies), and electricity users (for instance, large industrial users and new household users).

Well-functioning pricing helps to optimise the use of existing and new assets.

For example, the electricity sector's approach includes use of long-distance electricity pricing to signal where low-cost opportunities exist to connect new generation or consumption to the grid, and a wholesale electricity market that signals when demand is strong for new generation investment. Over time, this ensures that electricity assets are well used, without excessive amounts of underused capacity.

Spatial planning coordinates land-use planning and infrastructure investment

Spatial planning helps to coordinate infrastructure development between sectors and with other land uses.

Integrated land use and infrastructure planning can help ensure that new and existing infrastructure is well used and its negative effects are managed. Spatial planning involves local and central government, the private sector, and mana whenua sharing information about expected future needs and undertaking joint long-term scenario planning for the future location of land use and infrastructure, accounting for environmental constraints, hazard risks, and other competing priorities.

Spatial planning should not be a 'command and control' exercise.

It is best used as a strategic planning approach to coordinate decisions in the face of a range of uncertainties about the future. It is necessarily high level and unlikely to include all infrastructure (for example, 'out of cycle' projects, infrastructure subject to commercial confidentiality, such as energy generation, smaller infrastructure and upgrades). It won't always be specific about the exact geographical location of new infrastructure. It cannot 'predict and provide' a certain future and should guide, rather than direct individual infrastructure investment and development decisions that will be made autonomously.

Spatial planning should be based on good information provided and agreed between its participants.

This includes good information on current land uses and environmental constraints, and robust scenarios of future demand for housing, business land and infrastructure. It also includes reliable information about infrastructure project planning, including awareness of risks around costs and deliverability of projects, and expected funding constraints. Effective spatial planning is enabled by other good disciplines such as good asset management and the application of best practice decision-making principles for new capital decisions.

Spatial planning should be given more weight in resource management and infrastructure investment.

Various local authorities have invested in spatial planning processes in recent years in New Zealand, with input and support from central government.

However, the rigour of these processes and their outputs varies, and they currently have little weight in the resource management system or public funding decisions. For spatial planning to be effective, relevant statutes, institutions, goals, incentives, funding and delivery capability need to be aligned. Central government is currently considering proposals to strengthen spatial planning by giving it legal weight in regulatory decisions (including streamlining designations), and requiring it to inform and be informed by the Government Policy Statement on land transport, regional land transport plans and local authority long-term plans. This is an opportunity to improve regulatory planning and better coordinate central and local government infrastructure planning, including providing strategic direction to other approaches to support regional development.

The National Infrastructure Plan should inform and be informed by spatial planning.

The National Infrastructure Plan provides national cross-sectoral information that can contribute to a consistent and rigorous spatial planning evidence base and help align central and local decision-makers. For example, our forward guidance on future infrastructure investment demand (Section 3) may be relevant for assessing what is likely to be fundable in the future. Project information from the National Infrastructure Pipeline (Section 6) and information from long-term asset management and investment plans (Section 5) is also likely to be relevant. In turn, spatial planning in the new resource management system should also provide new information about regional and local demands for infrastructure for future versions of the National Infrastructure Plan.

Land-use regulations maximise the benefits from new and existing infrastructure

Land-use regulations should maximise benefits from new and existing infrastructure.

Zoning and other regulations are important because they help to determine how many homes and businesses can be built and operated near infrastructure, which in turn affects how well infrastructure is used. They can also affect how infrastructure assets are operated, for instance, by limiting hours of operation for airports or how many concerts can be held at a stadium.

When we build new infrastructure, we need to get the surrounding environment right for development.

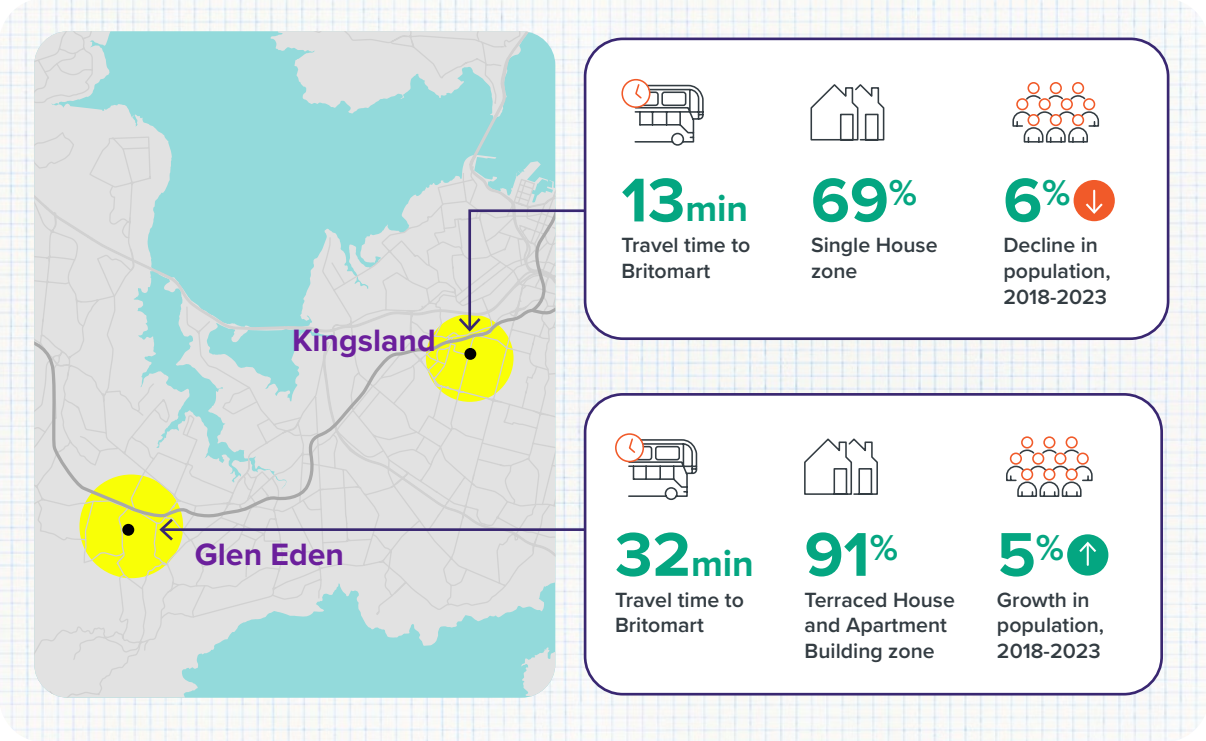
An example is ‘upzoning’ areas around new public transport infrastructure to allow more housing and commercial development that will then increase use of the infrastructure. However, uncoordinated private plan changes away from new infrastructure can dilute this effect.

Existing land-use regulations sometimes limit the value of new infrastructure.

This can be an issue even for our largest investments, such as the City Rail Link. Land values near Auckland rail stations rose significantly after the announcement of the City Rail Link, reflecting the value of improved transport access, but zoning is too restrictive to enable many new homes to be built near inner-suburban stations like Kingsland and Mount Eden (Figure 25). This has limited the development response that will in turn limit asset use.

New transport infrastructure makes places more accessible, but zoning can limit development

Figure 25: Impacts of the City Rail Link on transport access and population growth



Source: PwC. (2020). Cost-benefit analysis for a National Policy Statement on Urban Development. Report for the Ministry for the Environment. Plus supplementary analysis by the New Zealand Infrastructure Commission. See: New Zealand Infrastructure Commission. (2025). 'Advice on challenges and opportunities in the transport system: Proactive release'.

4.4.3. Findings and recommendations

Infrastructure providers must be able to coordinate to deliver and operate infrastructure cost effectively.

We make two recommendations to address this. The first recommends improvements to spatial planning practices, while the second speaks to the need for land-use regulations that enable use of infrastructure to be maximised.

These recommendations are important for ensuring that new and existing infrastructure is integrated with land uses, maximising the broader benefits of investment.

Recommendation 7

Clear the way for infrastructure

Spatial planning: Under the new resource management system, spatial planning informs and is informed by infrastructure investment and asset management planning and the New Zealand Infrastructure Commission's independent view of long-term needs.

This recommendation would need to be implemented through new resource management legislation or secondary legislation. To address identified issues, we expect it to clarify the relationship between spatial plans and infrastructure funding decisions made under the Local Government Act and Land Transport Management Act. New legislation is currently under development and the Commission is inputting into the design of the new system.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 8

Clear the way for infrastructure

Maximising use: Land-use policies enable new and existing infrastructure to be used by as many people as possible.

This recommendation would need to be implemented through resource management reforms. New legislation is currently under development and the Commission is inputting into the design of the new system.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

4.5. Ensure a predictable policy environment

Te mātua whakarite i tētahi taiao kaupapahere horopū

4.5.1. Context

There are many reasons why the future is uncertain.

This includes factors that we have limited control over, like population growth, technological change, and how rapidly and severely climate change will affect us. Infrastructure providers in all sectors must anticipate and adapt to these uncertainties. Sometimes, this means adopting a 'wait and see' approach and delaying investment decisions until demand for a service is clear. Alternatively, it can mean investing incrementally to avoid the trap of large investments with commensurate maintenance bills for infrastructure assets that are under used.

When policies and regulations are uncertain or unstable, it is harder to invest.

This is because central government sets the 'rules of the game' for all infrastructure providers. It establishes regulations that control how infrastructure can be built, maintained and operated. It also implements policies that shape demand for infrastructure in many sectors. For example, central government decisions about the Emissions Trading Scheme affect the relative cost of using fossil energy or renewable electricity, which then influences how much renewable electricity investment is demanded. When there is uncertainty about these policies, we may end up with less investment than is needed. A consistent, predictable approach is needed to ensure that central government policies enable us to meet our infrastructure needs in a timely and efficient manner.

4.5.2. Strategic directions

The regulatory environment better serves New Zealanders

We need an efficient legislative and regulatory system.

Well-designed and consistently implemented regulation makes it easier for infrastructure providers to invest in and operate infrastructure. It also helps build social licence for infrastructure investment by establishing confidence that the broader impacts of new and existing infrastructure (to communities or the environment) are understood and well managed.

The costs of regulation should be proportionate to the benefits they achieve.

In some areas evidence exists of increasing costs of compliance (Box 10). This can disproportionately affect small infrastructure projects, where compliance costs are high relative to the project budget. Our research on resource consents highlighted high costs (almost $1.3 billion each year getting infrastructure projects consented), disproportionately higher costs (16%) for smaller infrastructure projects, and the time taken to make decisions increasing by as much as 150%. [58]

Processes for consulting on, establishing and reviewing regulations should be predictable to avoid setting back project planning and delivery.

It can take several years to plan and design a large project. If regulations and design requirements have changed significantly during that time, it can result in added costs and delays to redesign the project around new requirements. This also makes it hard to repeat standard designs and learn how to build them more cost effectively.

Many types of regulations affect infrastructure providers.

These are set under a variety of legislation and overseen and implemented by multiple organisations. These points apply across multiple areas of regulation.

Box 10

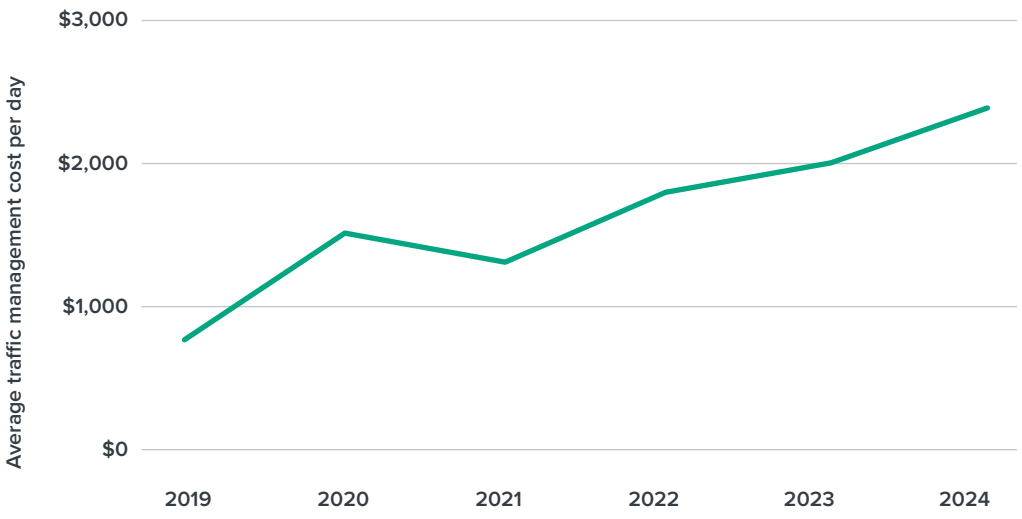
The cost of temporary traffic management

Temporary traffic management is needed to keep workers and road users safe when work is happening in the road corridor. Requirements have increased over the last decade, following the Health and Safety at Work Act 2015 and subsequent changes to the New Zealand Transport Agency's Code of Practice for Temporary Traffic Management.

These changes have safety benefits but also increase costs for routine infrastructure maintenance and construction. Electricity Networks Aotearoa estimates that the per-day cost of temporary traffic management for electricity lines work tripled between 2019 and 2024 (Figure 26). These costs fall most heavily on small electricity line maintenance projects, and, in some cases exceed 20% of project budgets. Their research did not analyse changes in safety outcomes, however.

The previous Code of Practice was recently superseded by the New Zealand Guide to Temporary Traffic Management, which takes a less prescriptive and more risk-based approach. It is too early to understand the outcomes achieved by the new regime.

Figure 26: Average temporary traffic management cost per day, 2019 – 2024



Source: 'Report on findings: Assessment of costs of carrying out works in the road corridor for electricity distribution businesses. Prepared for Electricity Networks Aotearoa by Beca Limited. (2024). https://www.ena.org.nz/our-work/news/traffic-cones-are-increasing-the-price-of-power/document/1537

Resource management legislation is stable and enables infrastructure

Well-functioning resource management legislation is important for building, maintaining, and operating infrastructure.

Resource management legislation sets out the decision-making process for the use of natural resources. Infrastructure providers must navigate the resource management system to gain approval to build, maintain, and operate infrastructure. This can affect delivery cost and timeframes.

Resource management legislation should be enabling of infrastructure.

Large infrastructure projects sometimes require complex approvals due to their significant impacts on natural environments. They need a path through the consenting system that allows them to operate while managing negative impacts on the environment. Small infrastructure projects tend to be less complex but they also need cost-effective consenting pathways.

Institutional strengthening and building capability in the resource management system is needed, not just legislative change.

Critical success factors for effective infrastructure provision in the new system include: an entity with clear accountability to develop and maintain a set of national infrastructure standards; investment in data about the natural environment and hazards to support spatial planning; guidance to support planning practice, and pooling expertise to strengthen compliance, monitoring and enforcement in the system.

Resource management legislation needs to maintain social license to build infrastructure.

New Zealanders are concerned about environmental quality and prefer an approach that will improve the environment, rather than worsen it (Box 11). Managing the environmental and community impacts of new projects is therefore important for ensuring a good operating environment for infrastructure.

There is broad agreement on the challenges with our existing resource management legislation.

Case-by-case consenting processes under the Resource Management Act 1991 are costly for participants, but not necessarily effective at delivering a consistent standard of environmental protection. Despite this, it has proved harder to agree on how to fundamentally reform the legislation.

Reform proposals have been advanced by the previous and current Government. [59]

Common features are evident across both proposals, such as a focus on enabling regional spatial planning, consolidating district plans into a smaller number of regional plans, and setting environmental limits. However, important differences also exist between the two pieces of legislation, such as the degree to which they narrow the scope of participation in resource management processes, the role of property rights and the role of Te Tiriti o Waitangi.

A stable approach to reform, supported by broad public and political consensus, is needed.

Reforming resource management legislation is costly and disruptive. An opportunity is available to develop a significant component of the current reform package with consensus in mind, while allowing scope for changes to reflect other political and societal values over time. Infrastructure projects can help improve the environment, such as generating renewable electricity, or treating wastewater to higher standards. Further areas of consensus include long-term spatial planning and making the consenting of public infrastructure more efficient and with greater use of standardisation across the country. This is critical for infrastructure projects that span multiple regions.

Box 11

Greater consensus on infrastructure that enables environmental outcomes

New Zealanders value infrastructure, and most are also concerned about environmental quality. Public opinion surveys often highlight significant concern around environmental issues, particularly water shortage and pollution, and climate change. A healthy environment is an essential underpinning of our aspirations for growth and development.

Most New Zealanders say that they disagree or strongly disagree that 'we worry too much about the future of the environment and not enough about prices and jobs today' (Figure 27). In this context, ensuring that infrastructure projects are seen to benefit the environment, rather than damage it, is likely to be important for sustaining social license for investment.

Figure 27: Public perceptions about the future of the environment

Do we worry too much about the future of the environment, and not enough about prices and jobs?

29%
Agree/strongly agree
(indicating less environmental concern)

17%
Neither agree nor disagree

54%
Disagree/strongly disagree
(indicating more environmental concern)

Source: 'Getting what we need: Public agreement and community expectations around infrastructure'. New Zealand Infrastructure Commission. (2025).

Policies affecting demand for infrastructure investment are consistent and predictable

Infrastructure providers benefit from predictable processes for reviewing and changing policies.

This is because demand for infrastructure is often affected by policy changes. When infrastructure providers have a better idea about what might change in the future, they can make the right investments at the right time.

Demand for investment is shaped by policy factors.

Many examples can be found. How we price network infrastructure affects how much demand there is for new infrastructure, and where that infrastructure is demanded. How much unpaved green space we choose to provide in towns and cities affects how much stormwater infrastructure we need to build to channel runoff away from homes and businesses. [60] Service standards for social infrastructure affect how much of it we must build.

Policies must continuously evolve in response to technological and demand changes.

When this happens, consistent processes for reviewing existing policies and consulting on policy changes can help. Independent regulators tend to take a predictable, consultative approach. For example, the Electricity Authority's commitment to public consultation and transparency, as well as its efforts to test regulations before formal launch, provides early signals to the sector to inform the Authority's investment plans.

Local government currently faces significant policy uncertainty.

Policy and regulatory settings for local government have been subject to many reviews and reforms in recent years. Core functions in relation to water, building control, resource management and economic development are currently undergoing reform, leading to increased costs for local governments. [61]

The electricity sector has a consistent policy environment

Electricity is critical to the operation of all types of infrastructure.

Affordable and reliable electricity is needed to meet our economic and environmental goals.

We expect to need more electricity in the future.

The New Zealand Government has committed to achieving net zero greenhouse gas emissions by 2050 through its international agreements and the Climate Change Response (Zero Carbon) Amendment Act 2019. Broad agreement has been reached that achieving this target will require a significant increase in affordable and reliable low-carbon electricity generation to displace fossil energy sources. Both sector and government forecasts show a substantial rise in electricity demand in coming decades. This is reflected in our outlook for future electricity investment demand (Section 3).

Electricity is a commercial sector facing the potential for significant demand growth.

However, it is also facing challenges, such as uncertainty about the pace of demand growth and current challenges around the affordability and reliability of electricity.

Consistent energy policy is needed to ensure that investment proceeds at the required pace.

This means ensuring a competitive market where electricity generators have an enabling consenting environment and don't face excessive demand or price uncertainty due to policy changes. Electricity transmission and distribution investment must be done in a timely and cost-effective manner, because these costs are passed on to consumers through regulated revenue allowances overseen by the Commerce Commission. It will be easier to decarbonise if we can defer unnecessary network investment driven by the need to meet peak demand. Considerable investment will be needed but there may be ways to better manage demand,[62] reducing system load at peak times, that could provide $6.9 billion of net benefits. [63]

In the long term, greater electrification of the economy could be good for consumers.

It can enable cheaper electricity to displace thermal fuels in the economy. However, there is a risk that medium-term investment in network infrastructure will lead to higher electricity prices in the coming years, raising some affordability and equity challenges, and hindering the uptake of electric vehicles and appliances.

Our dry year risk challenge needs close monitoring.

Policies to mitigate the 'dry year risk ' and improve energy security will continue to merit significant attention. Transpower's annual modelling suggests power firms could have too little capacity to meet demand for electricity in the winter of 2026, with a significant change being the forecast reduction in gas available for power generation. This is likely to mean a strong focus on ensuring thermal plant is available for back up, and careful management of hydro storage. Current proposals under consideration by the Electricity Authority that may allow new entrants to purchase 'firming capacity' [65] from large electricity generation companies may be a positive development. Further measures to support investment in 'firming' generation may also need attention, with a focus on how to reduce prices for industrial and domestic consumers, and reap the benefits of wider electrification of the economy (Box 12).

Energy market policies are under review.

Significant policy work is currently under way, given the implications not just for the functioning of our energy infrastructure and market, but for wider economic activity. It will be important to assess the findings and response to the Review of Electricity Market Performance [66] and the Energy Competition Task Force. [67]

Box 12

Important factors affecting electricity investment

The electricity sector faces uncertainty about future demand forecasts. These are driven by the difficulty in understanding the uptake of new technologies [68] and uncertainty about policy approaches to decarbonising the economy. The National Infrastructure Pipeline, consenting applications, and a recent Transpower monitoring report [69] point to an uplift in new generation, and growth in electrification of the economy, though noting some 'policy headwinds' and transition pains that require a continued watching brief.

Supply and demand side uncertainties are also inherent, such as diminishing gas reserves, and the impact of large users in the market such as Methanex, and the New Zealand Aluminium Smelter, both of whom have made decisions that provide some short- and longer-term stability. Measures to reduce project delivery costs and barriers (such as easing resource consenting) will remain important.

Previous policies such as the Lake Onslow project, the 100% renewable electricity target and reversing policies that incentivised investments in decarbonisation, have been cited by industry experts as undermining investment certainty. Similarly, measures to overcome declining local natural gas supply, for instance a shift to importing liquefied natural gas, would require assessment to identify the impact on energy sector investment over the coming decades.

4.5.3. Recommendations

Infrastructure providers require a stable and enabling policy environment.

We make two main recommendations to address this. The first relates to improving resource management legislation while the second addresses the need for a stable policy environment for electricity investment.

These recommendations are important for enabling investment to happen in a timely way.

Recommendation 9

Clear the way for infrastructure

An enabling environment: The resource management system enables infrastructure with national and regional benefits, while managing interactions with surrounding land uses and negative impacts on the natural environment.

This recommendation would need to be implemented in an enduring way through resource management reforms, including a new national policy statement on infrastructure. To address identified issues, we expect the resource management system to include infrastructure-specific tools and pathways to enable infrastructure with national and regional benefits to be built and operated, while managing interactions with surrounding land uses and negative impacts on the natural environment. New legislation is currently under development and the Commission is inputting into the design of the new system.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 10

Clear the way for infrastructure

Policy stability: Energy investors have predictable policy and consenting settings that support affordability, security of supply, and the decarbonisation of the economy.

This recommendation would need to be implemented through policy and operational changes, which we are investigating further.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

5 Drive excellence from the core: Government investment

He kōkiri i te kairangitanga mai i roto: Te haumitanga kāwanatanga

Improving central government infrastructure investment and asset management

Te whakapai ake i te haumitanga tūāhanga me te whakahaere huarawa a te kāwanatanga ā-motu

Summary

- Central government agencies are responsible for around half of infrastructure investment and assets. These agencies build and maintain many of the infrastructure assets needed to provide services to New Zealanders.
- Central government infrastructure is funded from revenue collected by the state with finance and funding administered through the annual Budget together with other specific laws.
- The Treasury's Investment Management System helps to review and advise on central government infrastructure investment decisions as part of the Budget.
- In developing the Plan, we've looked at how New Zealand's Investment Management System performs against the International Monetary Fund's Public Investment Management Assessment framework, which is a best-practice framework for assessing public sector investment and asset management.
- Our findings show that we can improve long-term investment planning. As part of that, we need to ensure that Budget decision-making is linked to agency investment planning.
- Moving to a multi-year budgeting approach could be helpful too, because more forward visibility over investment funding would aid agencies in establishing efficient multi-year supply and procurement arrangements.
- Good information can also build confidence in projects. Projects with robust business cases are less vulnerable to cost overruns and delivery delays. About half of the investment proposals received by central government agencies, however, are submitted for Budget funding without robust business cases.
- For long-term planning to be successful, we need to ensure that projects are progressed in a methodical and consistent way, and risks are well managed through the investment lifecycle. This is important for ensuring that decision-makers and the public can have confidence in new investments.

5.1. Context: New Crown spending is limited by fiscal sustainability targets

Te Horopaki: E herea ana ngā whakapaunga hou a te Karauna e ngā whāinga toitū ā-moni tūmatanui

Central government agencies are responsible for almost half of all infrastructure investment.

This includes a similar share of our existing infrastructure assets. [70] These agencies build and maintain many of the infrastructure assets needed to provide services to New Zealanders. Effective government processes for planning, delivering and managing infrastructure are therefore critically important.

Central government infrastructure is funded from revenue collected by the state.

This includes taxes, user charges like fuel excise duty and road user charges, and other forms of revenue. Agencies can spend only when the Government allocates money to them. Taxes may be levied and public money spent only with the approval of the Government. [71]

Finance and funding are administered through the annual Budget together with other specific laws.

For instance, the Land Transport Management Act 2003 can authorise taxes and spending. [72] The annual Budget includes a mix of ongoing and one-off funding allocations, or appropriations, that agencies can use to pay for capital investment in infrastructure (Box 13). The Government of the day can signal, and in some cases set, future spending intentions. However, it cannot commit future Parliaments to implement those spending plans.

New spending must fit within constraints agreed as part of the Government's fiscal objectives.

In annual Budget Policy Statements and Fiscal Strategy Reports, the Minister of Finance outlines how much new money will be available for new ongoing operating spending and one-off capital expenditures, and the Government's intentions for spending over at least the next two years. [73] For instance, the 2025 Budget Fiscal Strategy Model forecasts $7.9 billion in cumulative operating allowances and $13.2 billion in cumulative new capital allowances in the 2026–2029 Budgets. [74] Because allowances are based on the Government's fiscal sustainability targets they tend to be smaller when there is a need to reduce forecast operating deficits or pay down debt, and larger when there are forecast operating surpluses or debt is below or near target.

Box 13

How agencies get money to pay for investment

Most central government infrastructure providers are funded through appropriations in the annual Budget. Generally, changes to operating appropriations and new capital appropriations are informed by agencies' funding requests, reflecting what they think is needed to provide services, but ultimately constrained by the Government's decisions about how much to spend.

The main ways that agencies pay for infrastructure investment are:

- Capital appropriations: Agencies can be allocated new, one-off capital funding ('capital expenditure appropriations') to acquire new assets. When new infrastructure is required to meet demand or provide new services, this funding can be used to pay for the upfront development costs. This funding does not cover any ongoing costs to operate, maintain and renew those assets.
- Operating appropriations: Agencies can be given funds to provide specific services ('output expense appropriations') while letting the agencies choose the best way to provide them. Appropriations required to operate a new capital investment (for example, staffing costs) are often made at the same time as capital is appropriated. And when agencies are funded to acquire infrastructure like schools or hospitals through capital appropriation, funding to cover the ongoing costs of maintenance and renewal is provided through operating appropriation at the rate of asset depreciation. In principle, this means that agencies should be able to pay for routine maintenance and renewal and replacement of existing assets, including responding to changes in demand.
- Selling and purchasing assets: Agencies can sell existing assets and use the proceeds to purchase new ones. This is sometimes called 'asset recycling'. For example, a school with a small and declining roll could be closed and sold to pay for new classrooms in a growing area. This also means that agencies should be able to change their assets to respond to changes in demand. However, agencies cannot increase their overall asset base through asset recycling.

NZTA is a notable exception from this approach. It manages the National Land Transport Fund (NLTF), which receives revenue from user charges like fuel excise duty and road tolling. The Land Transport Management Act 2003 appropriates funding collected through the NLTF to be used to build and maintain New Zealand's land transport network. However, in recent years, significant Crown funding has been provided on top of NLTF revenue.

Central government oversees its own performance through the Investment Management System.

As outlined in Section 4, this is a part of New Zealand's Public Finance System that provides oversight of central government agencies' investment and asset management activities. It does so by setting requirements for capital investment throughout the investment lifecycle, from problem identification to benefits realisation. When this works well, it enables central government to invest in the right things and deliver its investments efficiently.

Many core aspects of the Investment Management System perform well, but some need work.

We reviewed New Zealand's performance against the International Monetary Fund's Public Investment Management Assessment framework, a best-practice framework for assessing public

sector investment and asset management.[75] Central government can lift its capability to plan, fund, deliver, and manage infrastructure in three main areas. These relate to improving long-term investment planning, lifting the bar on project appraisal, selection and delivery, and budgeting for maintenance, renewals and resilience of existing infrastructure.

This section presents the Commission's recommendations about steps that central government can take to improve its capability to plan, fund, deliver and manage infrastructure assets.

This builds upon our previous advice in the Infrastructure Strategy, which included various recommendations aimed at improving central government infrastructure decision-making. Rather than repeating previous recommendations, we focus on identifying areas where additional recommendations are needed.

5.2. Improve long-term investment planning

He whakapai ake i ngā whakamahere haumitanga tauroa

5.2.1. Context

Infrastructure investment requires us to think about the future.

Long-term planning for investment and asset management enables us to build new projects at the right time and adequately maintain and renew assets. To be effective, long-term plans should be linked to funding and pricing decisions, to ensure we have a credible way to pay for them.

The existing top-down approach makes future-focused planning challenging.

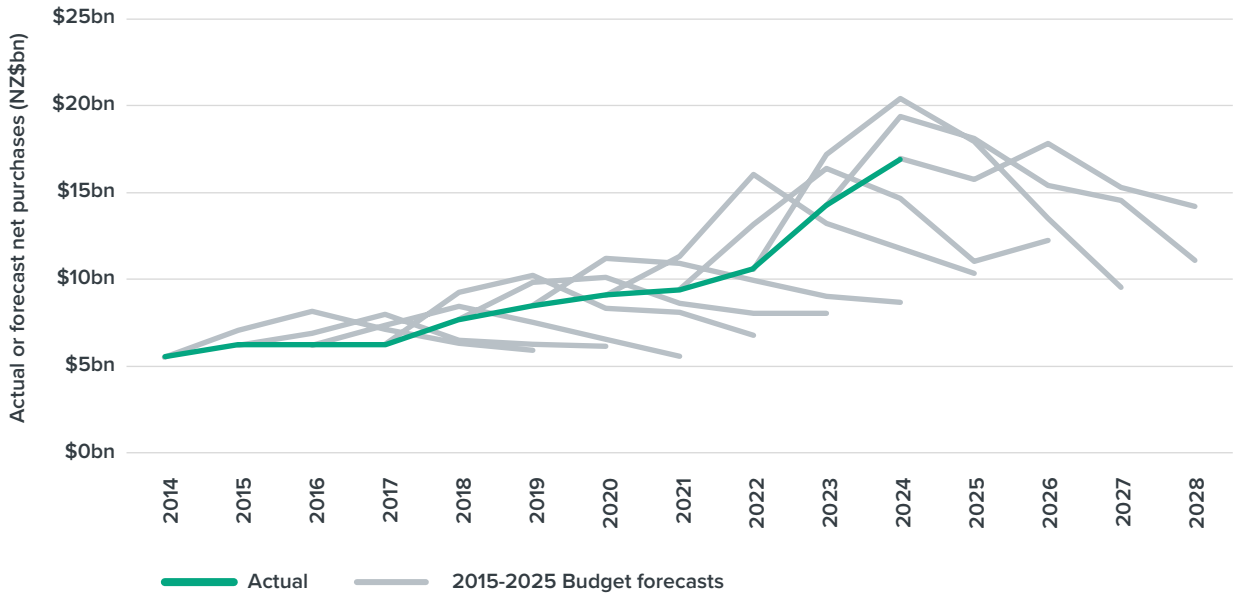
This is because the amount of money available to implement these plans is limited by top-down fiscal constraints. These constraints do not reflect information about local investment demands. A more effective investment management system would include a mechanism for aligning top-down fiscal constraints with bottom-up investment planning.

New Zealand's current approach results in an unstable and short-term view of future investment.

Budget forecasts consistently over-estimate capital investment in the short term and under-estimate it in the long term (Figure 28). This reflects over-optimism about how quickly newly funded projects can be designed and delivered, combined with under-estimation of longer-term infrastructure investment pressures. Change is needed so that central government long-term investment planning enables us to meet our infrastructure needs consistently and sustainably.

Budget forecasts do not project a stable view of long-term investment demand

Figure 28: Treasury Fiscal Strategy Model forecast versus actual net purchases of physical assets



Note: BEFU = budget economic and fiscal update. Source: Analysis of the Budget Economic and Fiscal Updates, 2015-2025. The Treasury. (2024).

5.2.2. Strategic directions

Central government agencies plan ahead for future needs

Long-term investment planning and asset management are important for infrastructure.

They clarify what may be needed to maintain and renew existing assets to maximise their useful life at lowest lifecycle cost. This allows for improved integrated planning for any new investments that may be required under various future scenarios. This enables fiscal pressures to be managed by deferring costly new investments until they are absolutely required.

Our forward guidance on future investment demand is a start, but asset owners are best placed to do detailed long-term planning.

Our analysis, presented in Section 3, provides a broad view of the level and mix of investment that is likely to be affordable and needed in the long term. However, our forecasts do not seek to provide a highly detailed view on individual assets or demands on specific parts of infrastructure networks. A core competency of any capital-intensive central government agency should be the ability to produce integrated long-term plans that provide a detailed view on assets and current and future demands across their networks. Strengthening the compliance requirements around this will go so far, but real change needs to be led from the core. For example, in the case of Crown agencies, the responsible Minister and the Board both have a significant role in not only setting expectations but also monitoring and reviewing performance.

Existing requirements are a start, but a more stable and consistent approach is needed.

The Investment Management System requires agencies to develop and report long-term investment intentions based on their strategic planning and asset management practices. These expectations are set out in the Cabinet Office Circular on investment management. [76] However, frequent changes to long-term planning requirements limit the effectiveness of these requirements. [77]

Data on long-term investment intentions varies in quality and completeness.

Agencies' investment intentions are collected and reviewed by the Treasury on an annual basis. The Treasury provides Ministers with advice on these intentions through its Quarterly Investment Reporting (QIR), and a partially redacted version

of QIR is published several months later. This reporting indicates varying levels of detail on agencies' strategic intention submissions. Publicly available long-term planning artefacts (for example, comprehensive long-term investment or asset management plans) are also variable across central government agencies.

Align asset management and investment planning with available funding

Long-term asset management and investment planning should be credible, fundable and achievable within fiscal forecasts.

Unconstrained plans that exceed the level of funding that is likely to be available may be useful for identifying underlying investment pressures but are of limited use for construction sector engagement. If funding is not available due to other fiscal considerations, asset owners need to be aware of this so that they can address future service delivery risks associated with the lower levels of available funding.

Agencies' 10-year investment intentions significantly exceed forecast Budget funding. [78]

For instance, the recently announced Health Infrastructure Investment Plan includes spending an average of around $2 billion per year for 10 years.[79] The recently announced Defence Capability Plan includes indicative spending of around $3 billion per year for the next four years. [80] For comparison, the 2025 Budget Policy Statement forecasts $3.625 billion available for new capital spending in each of the next four years.

The problems are amplified by the leakage of land transport.

Central government's land transport investment is intended to be self-funded from user charges paid into the National Land Transport Fund. However, expenditure on land transport is now 'spilling over' to Budget capital allowances. An estimated $12 billion in Crown grants and loans will be provided to pay for the 2024–2027 National Land Transport Programme, and more money may be needed past this point (Box 8).

Changes are needed to address the systemic misalignment between investment planning and fiscal forecasting.

This should clarify the connection between agencies' long-term asset management and investment planning, the New Zealand Infrastructure Commission's forward guidance for long-term infrastructure investment demand, and setting of capital allowances for new investment.

Link Budget decision-making to agency investment planning

When agencies do good asset management and investment planning, this should be reflected in Budget decision-making.

Agencies should be expected to base Budget funding bids on projects previously identified in their investment and asset management plans. Budget bids should include well-developed business cases. This is important for ensuring that investment is coordinated and prioritised to areas of highest need.

Projects awarded funding through the Budget sometimes have no link to long-term planning, and some needs may not be funded.

This undermines incentives for agencies to invest in effective planning because they focus on what funding they can obtain on a year-to-year basis. It generates pressure to make detailed project announcements before planning has been completed, and those announcements then make it more difficult to effectively plan.

Multi-year budgeting could help, but only if planning and monitoring practices were sufficient to support it.

The Public Finance Act enables the use of multi-year appropriations, but these are generally used to fund the delivery of specific initiatives, rather than to fund an agency's overarching multi-year investment plan. Previous attempts to introduce multi-year funding approaches have had limited success due to other gaps in practices.

Getting it right will enable more effective procurement and delivery approaches.

More forward visibility over investment funding would help agencies to establish efficient multi-year supply and procurement arrangements, strategically develop a more competitive supplier market, and smooth out their pipeline of work. This would then improve the construction sector's ability to invest in the people and capabilities needed to deliver investment.

5.2.3. Recommendations

Changes are needed to get better long-term asset management and investment planning in central government infrastructure agencies.

We make three main recommendations to improve policy and practices in this area. These are intended to align long-term investment planning with available funding, create stronger and more consistent requirements for agency long-term planning, and provide multi-year budgets where appropriate planning and monitoring arrangements are in place.

These recommendations create a mutually reinforcing process to align bottom-up agency investment planning and top-down fiscal strategy (Figure 29).

In turn this would help bring greater stability to agency funding for infrastructure, enabling a pipeline of ongoing investment and creating the preconditions to build capability and capacity across the infrastructure sector.

Recommendation 11

Establish affordable and sustainable funding

Needs based government investment: Fiscal strategy is informed by infrastructure investment and asset management planning and the New Zealand Infrastructure Commission's independent view of long-term needs.

This recommendation could be implemented by:

- The New Zealand Infrastructure Commission providing the Government with periodic estimates of central government infrastructure investment demand over at least a 10-year time horizon, detailing needs across sectors, by investment type and across years.
- The Government developing a methodology to take account of, and better align, infrastructure needs (informed by the Commission's estimates alongside agency asset management and investment plans (see below)), in determining its fiscal strategy and the quantum of future capital and operating allowances.
- Informed by the Commission's estimates and agency investment plans, the Government developing a methodology to plan the approximate expected allocation of its future capital allowances across sectors and agencies.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 12

Start with maintenance

Asset management and investment planning: Central government agencies are legislatively required to prepare and publish long-term asset management and investment plans.

This recommendation could be implemented by:

- Amending the Public Finance Act 1989 to require publication of 10-year asset management and investment plans by government agencies, detailing the capital investment (and associated operating spending) required to deliver services. This should include all financial (estimated expenditure) and non-financial information (for example, asset and risk information) required to justify proposed expenditure relating to the acquisition, upgrade maintenance, renewal and disposal of infrastructure assets.
- As needed, amending other legislation, such as the Land Transport Management Act, to incorporate comparable long-term asset management and investment plan requirements.
- Applying audit requirements to asset management and investment plans.
- Standardising how agencies categorise planned activities and expenditure, for instance distinguishing between different types of assets and between renewal and non-renewal capital expenditure and requiring them to provide information in a standardised format.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Establish affordable and sustainable funding

Stable central government funding: Multi-year Budget funding is available for central government agencies with strong planning, delivery and asset management practices.

This recommendation should only be implemented following improvements to agency long-term asset management and investment planning that can be integrated into fiscal strategy and allowance decisions. It differs from the former Multi Year Capital Allowance which reflects the funding the Government has set aside to meet the costs of future capital investments.

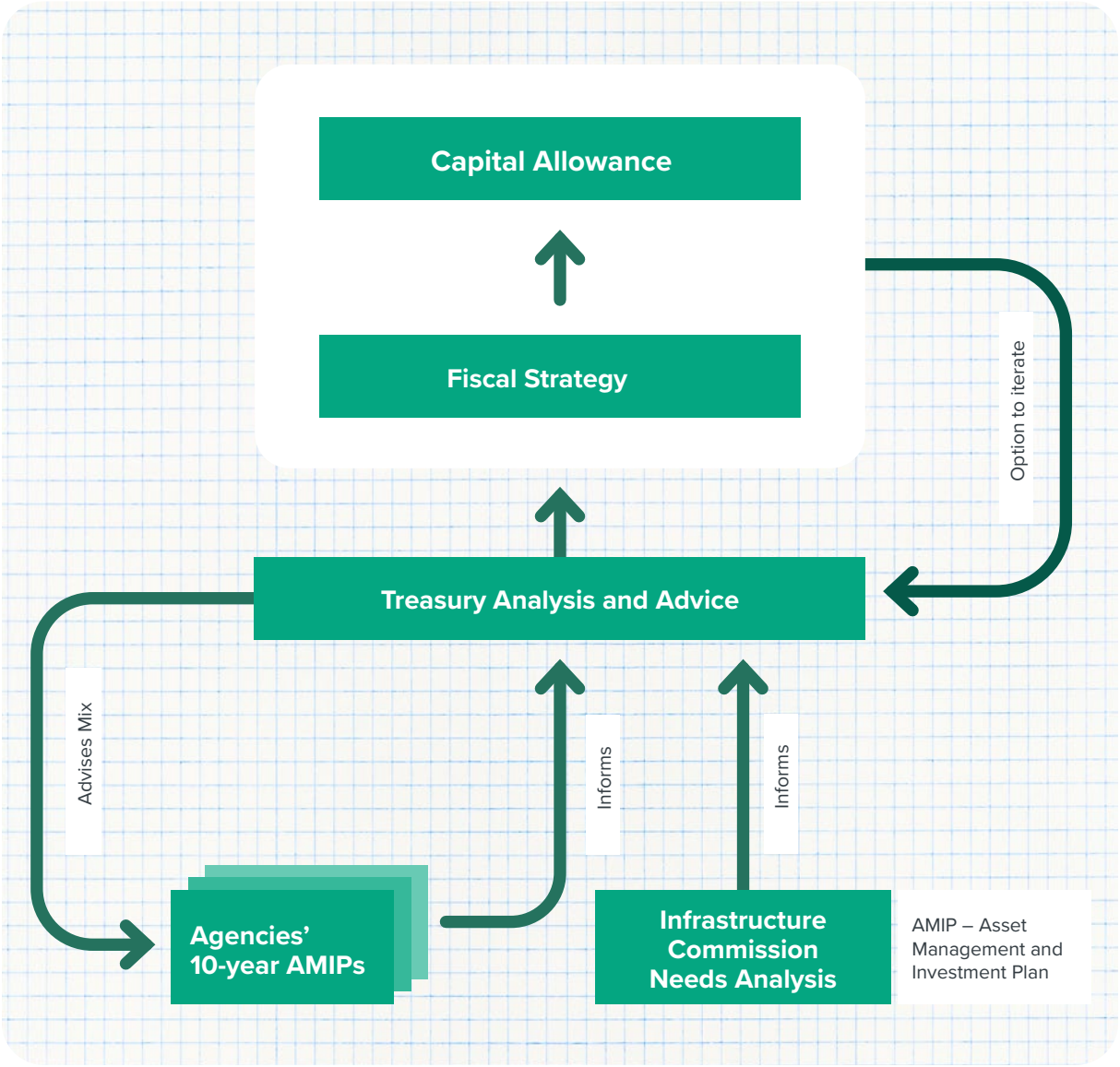
This recommendation could be implemented by:

- Government exercising its ability to extend the decision-making horizon of the Budget process, so it considers (and provides appropriate transparency on) not only investment proposals to fund in the current year, but also the set of investment proposals that it expects to fund through the next and possibly future years' Budgets. As a performance incentive, this could extend to allocating funding against those future budgets. Agencies would be required to meet conditions to access funding (for example, signoff of a completed detailed business case), akin to the current 'tagged contingency' approach.
- Reviewing the Budget evaluation framework to ensure year-on-year consistency by using stable criteria that align with a best practice appraisal framework. Once agency long-term plans are place (see recommendation 2), ensure that the Budget evaluation framework requires alignment with agency asset management and investment plans. This need not preclude the framework taking account of the investment priorities of the Government of the day.
- Developing a policy that confines the scope and specificity of project announcements to the project stage, for example, a high-level need statement with potential options at the planning stage, as opposed to anything more definitive at that stage of business case development.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 13

Figure 29: Proposed process for fiscal strategy and long-term planning



Source: New Zealand Infrastructure Commission. (2025).

5.3. Lift the bar for project appraisal, selection and delivery

He hiki i te kounga o te arohaehae, te kōwhiri me te whakatutuki i ngā kaupapa

5.3.1. Context

Long-term planning is not a comprehensive answer to ensuring good infrastructure outcomes.

Even when investment intentions are better aligned to service needs, funding for investment will remain constrained. Investing in one area will come at the cost of other services. Consequently, a need exists to lift the bar on project quality and consider a project mix that speaks to infrastructure needs from across the country.

Decision-makers need confidence that capital investments are strategically aligned with long-term outcomes, provide good value for money and are deliverable.

This means assessing whether we are solving genuine problems, whether the cost of the project is proportionate to the size of the problem and whether the proposed solution will deliver the benefits it promises. Further, confidence is needed that agencies have the right capability to successfully deliver on planned investment. This includes investing in post-implementation reviews, to ensure we capture realised benefits and lessons from past projects.

Project planning requirements are sound, but implementation needs to improve.

The Investment Management System includes guidance for project business case development and provides processes for reviewing investment. However, further work is needed to provide confidence to decision-makers and the public that projects are ready to be funded and delivered.

5.3.2. Strategic directions

Central government agencies adhere to best practice project planning guidelines

Agencies need to 'think slow and act fast' when planning new infrastructure projects.

They can do this by developing business cases that clearly define a problem or opportunity, test options for addressing it, select a solution that delivers the best value for money, and progress project planning such that it can be funded for delivery. For large or complex projects, a multi-stage planning approach is needed to ensure that the project is adequately developed before a funding decision.

Cabinet approval is required for all significant new capital expenditure.

Central government agencies typically need to submit Budget bids for new capital expenditure or seek Cabinet approval of business cases to undertake new projects or investment programmes. Under the Investment Management System, agencies are expected to follow best practices for developing investment proposals before moving to delivery. This includes following the Treasury's Better Business Cases guidance, which outlines a best-practice stage gate process for project planning.

The Treasury monitors compliance with these requirements.

It convenes an Investment Panel that provides advice to Ministers on large investment proposals before their Budget decisions. [81] All infrastructure proposals seeking Budget funding are required to complete and submit a Risk Profile Assessment to the Treasury for review. The Treasury then determines the level of central scrutiny that will apply to the project. Projects with medium- and high-risk ratings will be required to provide information to the Treasury's Quarterly Investment Reporting, which is proactively released.

High-risk projects are also required to undergo Gateway assurance reviews.

Gateway reviews the risks of the project at its various stage gates, but does not assess the broader quality of the project. Findings from Gateway reviews are provided to agencies but not proactively released. As a result, it is unclear whether all relevant projects are receiving Gateway reviews and whether risks identified in them are well managed. At Budget 2022, the Treasury's Investment Panel noted that 'risks in the delivery of the preferred solution were insufficiently assessed' for most proposals. [82]

Compliance with project planning requirements increases

All investment proposals should complete robust business cases before seeking Budget funding.

The need exists to get beyond reactive planning and premature announcement of new projects. But this will be difficult if projects can obtain funding without high-quality project planning.

Good information can build confidence in projects.

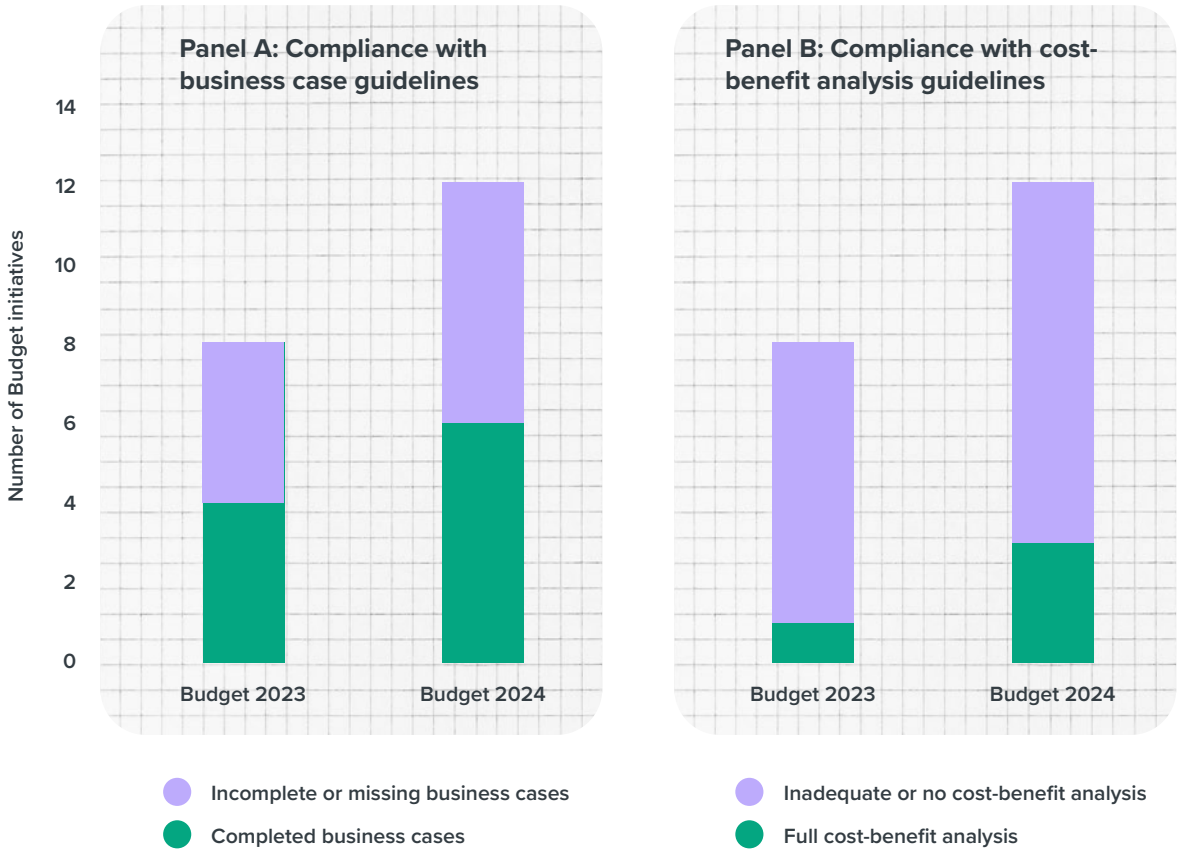
Projects with robust business cases are less vulnerable to cost overruns and delivery delays. These projects are also less likely to be rescoped, defunded or delayed by future decision-makers. This is because they are more likely to be addressing specific problems or opportunities through solutions that provide good value for money.

Many investment proposals are submitted for Budget funding without robust business cases.

Despite existing requirements for well-developed business cases, half of the Budget bids reviewed by the Treasury's Investment Panel for the 2023 and 2024 Budgets had missing or incomplete business cases (Figure 30). This continues a trend from the 2021 and 2022 Budgets. Moreover, almost all Budget bids lacked cost-benefit analysis information, making it hard to understand whether they have identified the most cost-effective solution.

Half of all Budget bids had missing or incomplete business cases

Figure 30: Compliance with business case and cost-benefit analysis guidance among Budget infrastructure project funding bids reviewed by the Treasury's Investment Panel in 2023 and 2024



Source: 'Annual report'. New Zealand Infrastructure Commission. (2024).

Project quality and readiness is rigorously tested before a funding decision

Project planning should guard strategic alignment, value for money and deliverability for new investments.

To be worth funding, projects should demonstrate that they are addressing an important problem or opportunity, that they have identified the most cost-effective solution, and they are set up to successfully deliver (Box 14). Decision-makers' objectives will change over time (equivalent to a change in strategic priority). However, the fundamentals of value for money and deliverability do not change. A project that has not completed adequate project scoping or site investigations will not become easier to build if assessed against different strategic priorities.

Business cases should not force decision-makers to choose between an expensive project and an unsolved problem.

They should consider a range of options, including low-cost and non-built solutions that avoid the need for new infrastructure, rather than focusing on a narrow set of costly solutions. In some cases, a high-cost option that delivers high benefits over the life of the new asset may still be the most cost-effective way to solve a problem. But often, lower-cost solutions will deliver higher value for money, or better balance fiscal affordability constraints.

A consistent and high bar is needed for investment.

It is difficult to track whether value for money and deliverability are improving over time because the Treasury's Budget Evaluation Framework, which it uses to assess Budget bids for new capital investments, changes significantly every year. [83] Core elements of evaluation frameworks should be stable over time. They should also set a high bar for value for money, seeking projects that maximise the benefits achieved from investment under various possible scenarios, rather than propositions where benefits exceed costs only under optimistic assumptions.

Box 14

What makes a good infrastructure project

Our work in the Infrastructure Priorities Programme considers infrastructure proposals against three main criteria:

1. Strategic alignment: Does a proposal support future infrastructure priorities and/or improve existing infrastructure systems and networks that New Zealanders need?

2. Value for money: Does a proposal provide value to New Zealand above the costs required to deliver, operate, maintain and dispose of it?

3. Deliverability: Can a proposal be successfully implemented and operated over its life?

Large, nationally important infrastructure projects are expected to go through several stages of planning before a funding decision. This starts with a Strategic Assessment (stage 1) that defines the problem or opportunity that the project can address, continues to an Indicative Business Case (stage 2) that identifies and tests different options, and then to a Detailed Business Case (stage 3) that identifies a preferred option and ensures that it is deliverable. The focus of assessment changes across these three stages.

Source: 'Infrastructure Priorities Assessment Framework'. New Zealand Infrastructure Commission. (2024).

Agencies act as sophisticated clients of infrastructure

Project planning is only the first step in delivering good infrastructure.

Central government agencies also need to set themselves up for success in the delivery phase. This means investing in internal capability to become a more sophisticated client of infrastructure and looking for opportunities to engage with supply chains through win-win commercial relationships that support productivity. [84]

Agencies must start by lifting their own internal capability to engage the market.

A whole-of-system approach is required when planning projects and engaging the market. Agencies must identify how they will use procurement relationships to deliver outcomes and establish a robust framework for determining the value of what they are buying.

Agencies also need to change how they engage their supply chains.

While traditional, transactional procurement models work for many projects, integrated, collaborative procurement models can provide additional benefits when managed well. To make this work, agencies must create aligned commercial relationships, which ensure cost-effective delivery of public investment and good commercial opportunities for private sector partners. They must develop integrated teams to deliver projects, use digital tools and data to drive efficiencies, and adopt a 'production system' approach to standardise repeatable projects.

Transparent information on past projects is used to improve future practice

Continuous improvement is needed to lift productivity and improve future project planning.

Information on past projects can help future projects learn how to replicate successes and avoid risks. To do this, important project information from the planning and delivery phase must be preserved in an accessible and transparent form, and reviewed to identify system-wide lessons.

Project transparency and retention of significant data are needed to enable learning.

Important project documents, such as business cases and assurance plans, are unavailable for many large publicly funded infrastructure projects (Box 15). Furthermore, data on project costs, completion dates, and benefit realisation should be systematically captured after projects are delivered.[85]

Structured post-completion reviews can help identify system-wide issues affecting projects.

The Commission is undertaking work to establish a post-completion review programme to deliver on Recommendation 17 of the Infrastructure Strategy. This will look at completed major infrastructure projects to systematically compare what actually happened against what was expected in the planning phase. Findings can inform future project evaluation methods, investment decision-making, and system-wide improvements.

Box 15

Transparency of important project documents for large publicly funded infrastructure projects

Massey University researchers reviewed the accessibility of documents for 27 large projects across central and local government. These range in cost from $50 million to more than $1 billion and have a collective value of over $70 billion.

Key project documents were inaccessible for over half of the projects that were reviewed. All projects with the best document accessibility were run by an independent board, rather than a government agency or council, and nearly all were in the $500 million plus project category.

45%
of business case documents were accessible

48%
of assurance plan documents were accessible

0%
of completed projects' post-completion reviews were accessible

Source: 'Transparency within large publicly funded New Zealand infrastructure projects'. Massey University. Prepared for the New Zealand Infrastructure Commission. (2023).

5.3.3. Recommendations

Changes are needed to lift the bar for project appraisal, selection, and delivery in central government.

We make four main recommendations to improve policy and practices in this area. They are intended to ensure that adequate independent review is undertaken of investment proposals in the planning stages, that risks are well managed through project assurance, that important project information is transparently available, and that we have the information needed for continual improvement.

These recommendations bolster our advice on long-term asset management and investment planning.

For long-term planning to be successful, we need to ensure projects are progressed in a methodical and consistent way, and risks are well managed through the investment lifecycle. This is important for ensuring that decision-makers and the public can have confidence in new investments.

Recommendation 14

Right-size new investment

Investment readiness assessment: All Crown-funded infrastructure proposals pass through a transparent, independent readiness assessment before funding.

This recommendation could be implemented by:

- Mandating participation in the Infrastructure Priorities Programme for central government infrastructure proposals and non-central government projects that are seeking Crown funding.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 15

Right-size new investment

Project transparency: All business cases, Budget submissions, and advice on central government infrastructure investments are published.

This recommendation could be implemented by:

- Requiring, as the default position, the publication of all business cases, budget submissions and advice relating to infrastructure investment proposals to improve transparency.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 16

Right-size new investment

Risk management: Project assurance for central government agencies ensures that risks are well managed.

This recommendation could be implemented by:

- Considering opportunities to improve the end-to-end assurance process for infrastructure projects, including the independent quality assurance of business cases to provide Ministers with greater confidence of project success and visibility of significant projects' risks.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 17

Right-size new investment

Learning from projects: Post-completion information on actual project costs, delivery dates and benefits are provided and published in a standard format, enabling comparisons to what was expected when funded.

This recommendation could be implemented by:

- Requiring central government agencies, local governments, and potentially other infrastructure providers to regularly submit project information to the National Infrastructure Pipeline.
- Requiring provision of additional project data for major projects, including business case cost estimates, actual delivery costs, delivery target date, actual delivery date, business case forecasts of benefits, and actual realised benefits.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

5.4. Budget for maintenance, renewals, and resilience

He mahere pūtea mō te tautiaki, ngā whakahoutanga me te manawaroatanga

5.4.1. Context

Nothing is more certain than maintenance and renewals.

Some of our most important and essential assets are already around us. Keeping them going is among the most important tasks before us. This requires funding. Without it, access to services will be lost or levels of service will decline.

Protecting infrastructure against risks is also an asset management challenge.

Asset owners need to respond to natural hazards that can damage infrastructure, as well as other risks, like cybersecurity threats. Although large, costly events may be relatively infrequent, the costs of responding to them or proactively building in resilience are part of the long-term cost to provide infrastructure assets. When a disaster happens, renewals that might otherwise have been required years or decades later will need to be brought forward.

The cost of responding to natural hazards will rise as we build more infrastructure and as climate change increases extreme weather events.

In some cases, we will find that the approach we took in the past will not continue to work in the future. We will need to adapt.

The more infrastructure we have, the more it costs to maintain, renew, and protect.

The Investment Management System sets expectations for how these costs are identified and funded. However, further work is needed to ensure that agencies can adequately maintain, renew and manage risks to current and future infrastructure assets.

5.4.2. Strategic directions

Central government agencies better understand their assets

The first rule of asset management is to understand your assets.

Central government infrastructure providers should maintain asset registers with information on the identify, condition and risk exposure of their service-critical assets. They should use this information to understand how the condition of their infrastructure changes over time. And they should prepare appropriate asset management plans for their assets.

Agencies are required to manage their assets to ensure they deliver intended levels of service.

Since 2010, this requirement has been set in a Cabinet Office Circular on investment management and monitored by the Treasury. Recent amendments to the Cabinet Office Circular also require agencies to maintain asset registers and asset management plans and to consider whether assets are resilient to significant risks.

These basic requirements need to be supplemented with more detailed guidance on asset management requirements and performance indicators.

This is important for monitoring performance. The Commission, as system leader for asset management and investment planning is establishing a work programme to define these requirements.

Compliance with asset management requirements improves

All agencies should comply with main asset management requirements.

This is important for understanding maintenance, renewal, and resilience needs, as well as credible long-term investment planning and funding decisions (Box 16).

Asset management maturity needs to improve in many areas of public infrastructure.

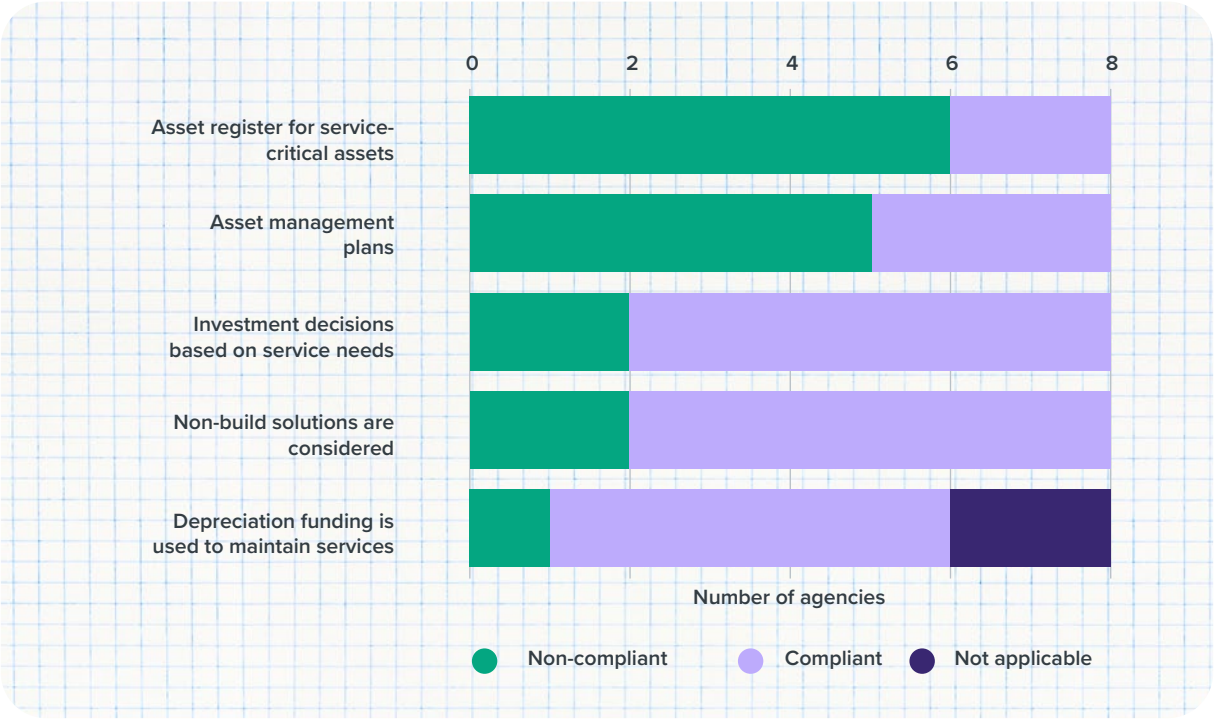
New Zealand ranks fourth to last in the OECD for asset management governance for infrastructure.[86] Within New Zealand, asset management maturity varies between sectors, and tends to be lowest for central government social infrastructure providers like health and justice. [87] Contributing factors include inadequate information on assets, a lack of transparency and accountability, and underperformance by system leaders and regulators.

Most capital-intensive agencies report non-compliance with basic requirements.

In June 2024, six out of eight capital-intensive agencies self-reported that they do not currently have asset registers that meet these requirements (Figure 31). Five said they do not have asset management plans that inform strategic, tactical, and operational choices. Because agencies' self-reported compliance has not been independently assured or reviewed, actual performance may well be weaker. Several agencies noted that compliance varied significantly between different types of assets they owned, suggesting that while headline numbers might suggest compliance, certain asset classes within a portfolio may not.

Most capital-intensive agencies are not compliant with asset management expectations

Figure 31: Capital-intensive agencies' self-reported compliance with CO (23) 9 requirements



Source: The New Zealand Infrastructure Commission analysis of June 2024 CO (23) 9 chief executive attestation statements. Note: We have excluded requirement 3.3 from our analysis due to technical issues with the Public Service Intranet over the reporting period.

Box 16

Catch-up maintenance on the Defence estate

Asset management planning for the Defence estate highlights the benefits of continuous proactive maintenance relative to catch-up renewals. Over previous decades, systematic under-investment occurred in maintenance and renewals of the Defence estate, resulting in an asset base that is currently in poor condition and prone to failure, affecting the delivery of military outputs. For example, Devonport Naval Base is in such poor condition overall that the unscheduled (reactive) maintenance spend is three times higher than average. This is forecast to double every five years, with more than 75% of asset groups requiring regeneration before 2050.

In theory, agencies have sufficient funding to maintain and renew infrastructure to deliver public services.

Ongoing output expense appropriations should be sufficient to pay most of the ongoing costs to provide needed assets, including maintenance, renewal and risk management, but excluding costs to meet rising standards. The Cabinet Office Circular on investment management sets an expectation that agencies use depreciation expenses, which should be funded through ongoing appropriations, to ensure that the levels and methods of service enabled by the agency's assets reflect its strategic intentions. [88]

Transparent reporting of maintenance and renewal spending can ensure that required funds are available.

Because agencies' overall expenditure is subject to top-down fiscal constraints, there is no guarantee that funding that is notionally available will be spent on maintaining assets. As a result, reporting on spending is needed to know whether maintenance and renewal are adequately funded and whether depreciation funding is being spent as intended. Central government already sets disclosure requirements for local government and commercial entities regulated by the Commerce Commission.

Evidence shows that renewals are under-funded in both central and local government.

For instance, from 2012 to 2022, renewal spending on state highways was equal to around 36% of reported depreciation (Figure 32), although operating spending for pavement maintenance would push up this ratio. [89] The Treasury's data suggests that central government agencies responsible for the justice sector and natural resources are also under-renewing their assets. [90]

Most agencies do not report on their maintenance and renewal spending. [91]

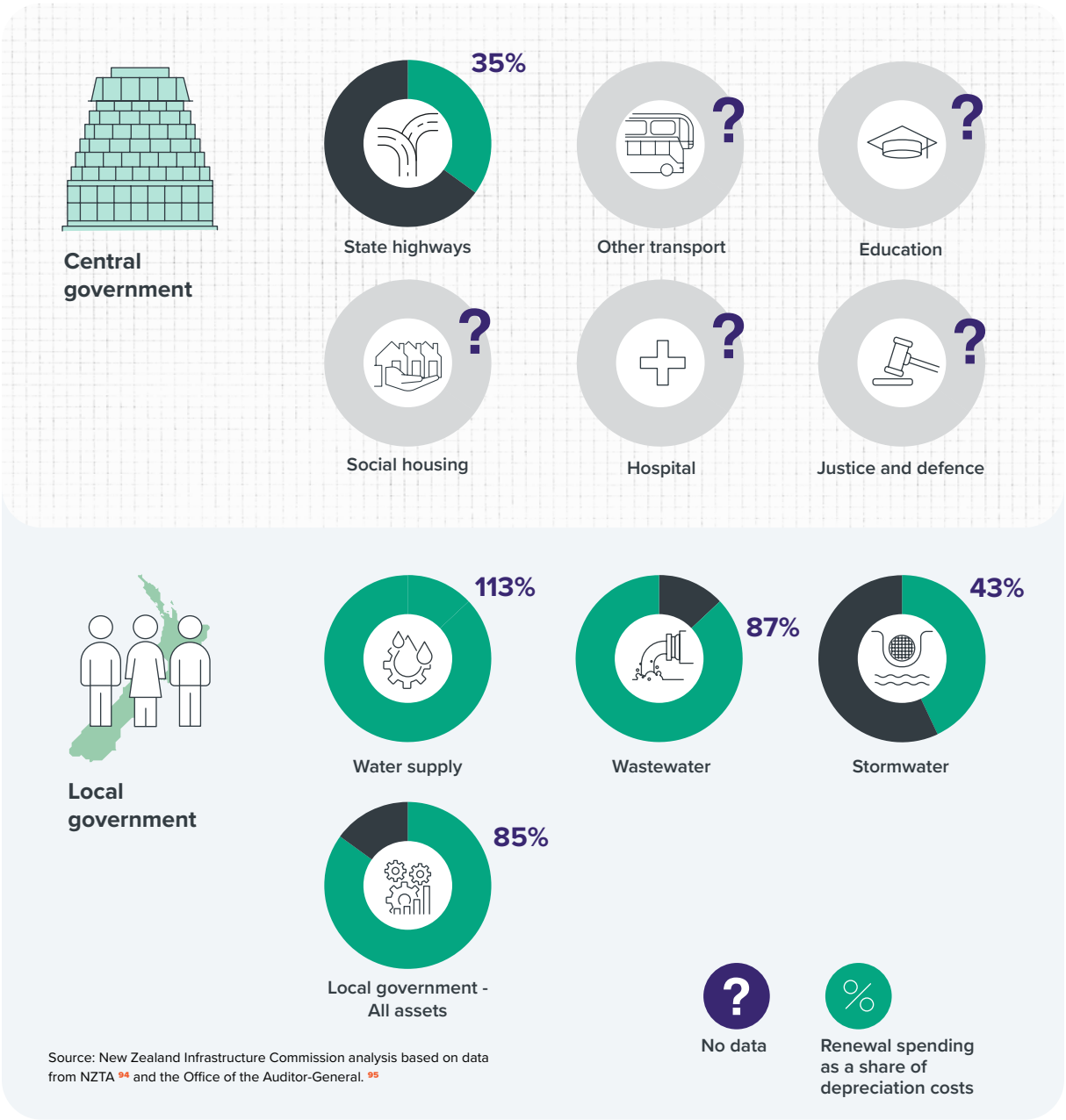
We could not find comparable, publicly available data for most types of central government infrastructure, like schools, hospitals, courts, prisons, and the Defence estate. This makes it difficult to have confidence that central government infrastructure is being managed appropriately.

Other asset indicators are also needed to understand whether assets are in good condition.

In addition to financial metrics, agencies should transparently report on measures like asset criticality, asset condition, achieved levels of service and risk ratings. The Commission is exploring required indicators as part of its ongoing work on asset management guidance and indicators.

What is the condition of our central government infrastructure?

Figure 32: Renewal to depreciation ratios for publicly owned network infrastructure sectors



Source: New Zealand Infrastructure Commission analysis based on data from NZTA [94] and the Office of the Auditor-General. [95]

Agencies better understand risk and invest in cost-effective resilience

Infrastructure needs to become more resilient because risks are intensifying.

In addition to routine maintenance and renewal needs, infrastructure providers need to be prepared for additional costs to respond to natural hazard events and other risks that can damage infrastructure. Costs from extreme weather events and flooding will increase due to climate change. These costs are manageable if we plan ahead. But, if we do not, they will inevitably be disruptive. New Zealand was hit by two major earthquakes and two major weather events between 2011 and 2023, leading to costs of over $10 billion to rebuild infrastructure and requiring significant adjustments to infrastructure budgets to pay for the costs.

Good asset management and transparent reporting are critical for risk management.

Agencies must understand their assets, including where they are, who they are serving, what condition they are in and what risks they are exposed to. Equally, risk management is an important part of good asset management planning, meaning that asset management reporting should include information on the risks facing infrastructure and how they are being managed.

We can manage risks cost effectively if we identify, quantify and price them in advance (Box 17).

This also helps to minimise the wider costs on society due to lengthy disruptions in services. For infrastructure providers that insure their assets (including some forms of self-insurance), rising premiums sharpen the focus on whether to maintain, strengthen or retreat. When the rising cost of insurance cuts into other priorities, real costs emerge from the decision to build roads in highly exposed locations, rebuild school buildings in the line of storm surges, or place new hospitals on flood prone land.

Risks facing central and local government infrastructure are not fully addressed.

Budget reporting highlights the future cost of responding to natural hazard events as an unquantified fiscal risk. [94] According to the Office of the Auditor-General's most recent review, less than half of public assets were insured against damages as of 2013. [95] Insurance cover is likely to have declined since then. When central government infrastructure is not insured, additional Crown funding will be needed to pay for the cost of the damage. The Crown is also expected to pay for 60% of the cost of repairing local government infrastructure damaged in an event. [96]

Costs and risks need to be recognised and reported so we can avoid paying more after the fact.

For instance, the Office of the Auditor-General reports that a reason why land transport assets have such low rates of insurance is due to expectations of one-off Government funding for loss or damage. [97]

Box 17

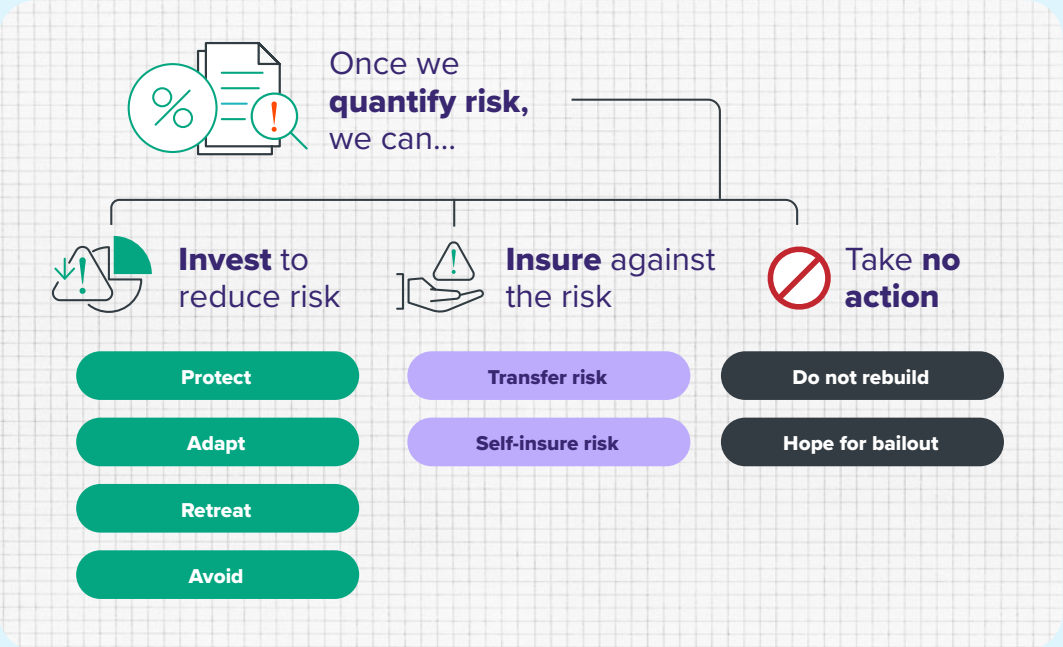
How to invest to protect infrastructure from natural hazards and other risks

No single best approach exists to managing natural hazard risk to infrastructure. Instead, the optimal approach will vary depending on many factors, including likelihood and consequence of the hazard, and the relative cost of different options in different situations (Figure 33).

When infrastructure providers understand their assets and the risks to which they are exposed, they can choose how to best manage those risks. Options include investing to reduce the risk, ranging from spending money to protect existing assets through to investing in a way that avoids risks in the first place, insuring or self-insuring against risks, to ensure funds are available to fix damages when they occur, or choosing to take no action (which does not mean that they will avoid costs).

A well-designed risk management approach will minimise the long-term costs of providing required infrastructure. It is likely to include a mix of proactive resilience investment as well as adequately funded post-event recovery investment. Proactive resilience investment should be used when it lowers the long-term costs of post-event recovery, and the need to provide 'bailouts' to cover costs that were not originally recognised and planned for should be minimised.

Figure 33: Risk management approaches



Source: 'Invest or insure: Preparing infrastructure for natural hazards'. New Zealand Infrastructure Commission. (2025).

5.4.3. Recommendations

Changes are needed to improve accountability for maintaining, renewing, and managing risks to central government infrastructure.

We make two main recommendations to improve policy and practices in this area. These recommendations are intended to ensure that important information on asset management, including how risks are being managed, is transparently reported, and that adequate independent review is undertaken of asset management planning and implementation.

These recommendations bolster our advice on long-term asset management and investment planning.

For long-term planning to be credible, we need to ensure it meets appropriate quality standards and that we can monitor outcomes for asset condition and performance. This is important for ensuring that decision-makers and the public can have confidence in how public assets are managed.

Recommendation 18

Start with maintenance

Performance reporting: Central government agencies are legislatively required to report on performance against their asset management and investment plans.

This recommendation could be implemented by:

- Amending the Public Finance Act 1989 to require asset management and investment performance reporting by central government agencies against a range of financial and non-financial indicators within a standard information disclosure framework.
- Applying audit requirements to this performance reporting.
- Standardising how agencies report performance and expenditure, for instance distinguishing between different types of assets and between renewal and non-renewal capital expenditure, and requiring them to provide information in a standardised format.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

Recommendation 19

Start with maintenance

Asset management assurance: Central government agencies' asset management and investment plans are independently assessed.

This recommendation could be implemented by:

- Developing an asset management and investment assurance framework (comprising guidance on expected processes and practices) to strengthen existing Cabinet requirements.
- Establishing oversight and review of the information made available, for example through independent verification of asset management and investment plans and agency practice against those plans, the findings of which would be proactively released in an accessible format.

Feedback we receive on recommendations in the draft Plan will help us to shape our advice in the final Plan.

6 Raise the bar on choices: The investment menu

He hiki i te kounga o ngā kōwhiringa: Te tahua haumitanga

Infrastructure choices on the horizon

Ngā kōwhiringa haumitanga kei te paeroa

Summary

- New Zealand has more infrastructure projects in planning than it can afford to fund or deliver. This growing pool of options provides flexibility for investment to respond to changing future needs, but also requires careful prioritisation and clearer visibility of opportunity costs for infrastructure that is funded by central and local government.
- As of March 2025, the National Infrastructure Pipeline was tracking over 8,100 infrastructure initiatives, including more than 4,400 still in the planning stages. Nearly half the total value of these (around $96 billion) is unfunded, with most of the unfunded value concentrated in a small number of large land transport projects.
- The Pipeline provides visibility across sectors and regions, allowing decision-makers to view the timing, location, sector, cost and procurement status of upcoming infrastructure projects. This helps coordinate delivery, manage workforce constraints and align investment overtime.
- The Pipeline is particularly valuable after major shocks, such as natural disasters, where rebuilding must be sequenced, and delivery capacity is stretched. It also supports long-term coordination in areas with overlapping investments. The Infrastructure Priorities Programme (IPP) complements the Pipeline by independently assessing and offering endorsement for selected nationally important proposals for their readiness to proceed, using criteria like strategic alignment, value for money and deliverability.
- The first round of IPP assessments confirms that while there are promising proposals across sectors and regions, most are still early stage and require further development to ensure affordability and delivery readiness.
- IPP assessments are helping to raise the bar on project quality, by encouraging proponents to consider a range of cost-effective solutions, including low-cost and non-built options, to better manage affordability and fiscal pressures.
- Both the Pipeline and IPP are live, evolving tools, updated regularly as new data is provided. This creates an ongoing evidence base for sequencing, funding and coordination decisions across the system.

6.1. Context: The options available to us exceed what we can build

Te Horopaki: Kei tua noa atu ngā kōwhiringa e wātea ana ki tā mātau e taea ai te hanga

Infrastructure providers across central government, local government, and the commercial sector are looking to the future.

Subject to the constraints and incentives imposed by their operating environment, they are planning and investigating projects, and programmes of small projects, that could be built in the future to respond to current and future needs.

Unfunded projects in the planning stages represent the options that are available to us.

Because these projects are unfunded, we have not yet committed to build them or signed contracts. They are in the planning stage, and further work is needed before we can be sure we should make funding commitments (Box 18). This planning work is important to present decision-makers with real investment options that are sufficiently advanced to provide confidence that if they commit funding to the project, it will meet a strategic need, provide value for money, and is able to be delivered.

We will have to prioritise what to build.

It's a good thing to have choices. It means we can respond to growing and changing demand over time and ensure our limited resources are deployed where they can make the most difference at any point in time. Decision-makers will need to choose which projects to deliver and which to defer. To do so, they need a good understanding of all the investment options available, their expected benefits, and how ready they are for investment.

The National Infrastructure Plan sets out a framework and broad direction for investment priorities.

To support implementation of this approach, the draft Plan also includes information on 150 initiatives valued at above $100 million that are currently in planning. We rely upon information submitted to the National Infrastructure Pipeline by infrastructure providers, rather than proposing new projects that are not currently in planning.

All the listed project options require evaluation.

This includes the development of business cases in line with relevant requirements before they are formally approved for funding and delivery. Projects are generally prioritised for funding through infrastructure providers' existing governance arrangements, which differ for central government, local government, and commercial entities. They should begin with setting strategies and goals, and then subsequently identifying specific needs or challenges to be addressed.

The Infrastructure Priorities Programme provides information on readiness for some large projects.

A select set of projects have been voluntarily processed through the first round of a standardised and independent assurance process that gives a view on project readiness at three stages of planning.

Improved prioritisation of projects across the full portfolio is possible.

The continued application of the Infrastructure Priorities Programme will, over time, give central government decision-makers the information needed to robustly prioritise large projects. More broadly, implementation of recommendations in the National Infrastructure Plan will lift the capability of central government infrastructure providers to identify their needs, plan ahead, and prioritise projects for funding.

Box 18

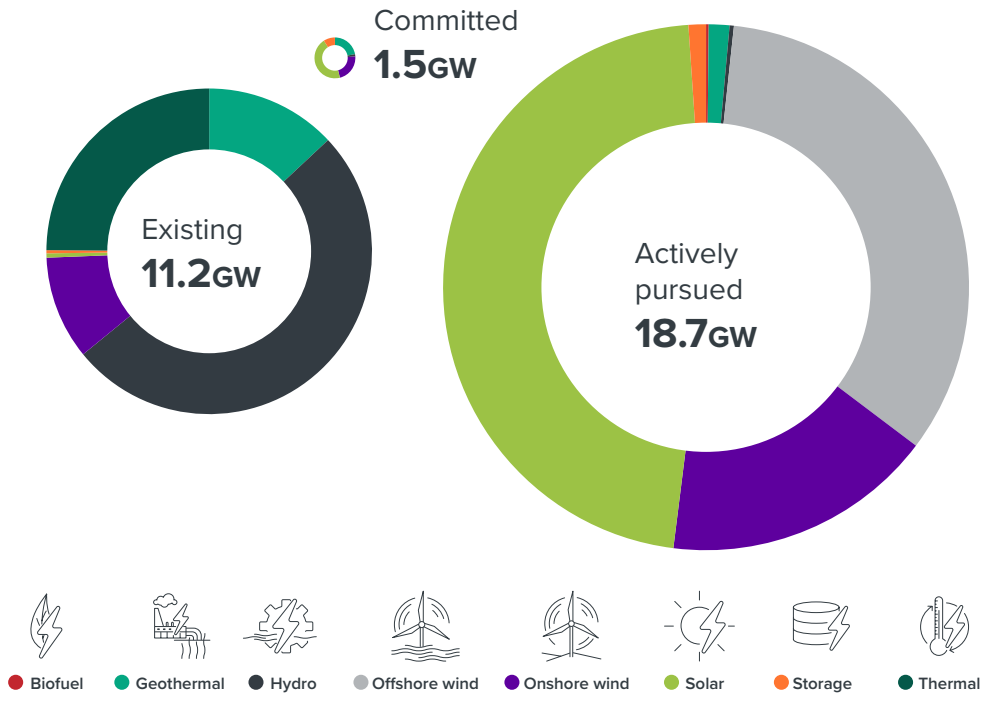
The electricity generation investment pipeline

The Electricity Authority has surveyed electricity generators about the projects they are intending to build or which they are actively investigating and when these could be commissioned.

The most recent survey shows that enough renewable electricity projects are being 'actively pursued' to almost triple New Zealand's electricity generation capacity (Figure 34). Overall electricity output would not increase by quite as much, because most of these projects are wind and solar farms that do not generate electricity all the time.

These projects will not be built all at once, and some will not be built at all. However, investigating many projects will ensure we have options to increase electricity supply to meet our decarbonisation goals, provided that demand for electricity materialises.

Figure 34: Electricity generation investment pipeline



Note: **"Committed projects"** are those where an unconditional final investment decision has been made.

"Actively pursued projects" are those where a site has been identified and the developer has started actively considering at least one of: finance, connection, consents, etc. This excludes consented projects that appear unlikely to proceed based on current information.

Source: 'Investment pipeline: A summary of generation and responses to the 2023 investment survey'. Electricity Authority. (2024).

6.2. Lay out upcoming project choices

He whakatakoto i ngā kōwhiringa kaupapa e whanga ana

6.2.1. Context

Projects are being planned and delivered by many different organisations.

Decision-makers within a single infrastructure provider have a good understanding of their own projects but are unlikely to have a good view of other infrastructure providers' projects.

The National Infrastructure Pipeline provides a transparent national view of current and planned infrastructure projects to help coordinate investment.

The Pipeline brings together information submitted by infrastructure providers. It captures information on infrastructure projects like the location, sector, expected timing, procurement approach and expected cost of projects. However, the accuracy and currency of the data depends upon what is submitted.

The Pipeline includes over 8,100 active projects.

As of the most recent update (March 2025), this accounts for around two-thirds of total infrastructure investment in the current year. We gather data from all large central government infrastructure providers, 64 councils that account for over 94% of total rates revenue, and a smaller but growing share of commercial providers.

Pipeline information is updated as agencies progress projects.

We receive updated information from infrastructure providers and update the Pipeline every three months. This draft Plan includes information from the March 2025 Pipeline update. We expect the final National Infrastructure Plan to incorporate updates from the June and September 2025 Pipeline updates. After publishing the final Plan, we will continue updating project information in the Pipeline.

A current list of projects in the Pipeline can be found here: **https://insights.tewaihanga.govt.nz/**

6.2.2.Strategic direction

The National Infrastructure Pipeline is used to coordinate and sequence public investment

A need exists to coordinate investment across sectors and between different infrastructure providers.

This is particularly important when large projects or investment programmes are planned in places with limited resources. In the short term, the capability of the construction industry and local infrastructure workforce may not be large enough to deliver everything that's being planned. Infrastructure providers need visibility over other things being planned, as well as an understanding of when there will be less competing activity so they can choose how to respond and make the most of opportunities.

Workforce capacity constraints are particularly important after large natural hazard events.

A lot of infrastructure needs to be rebuilt after an earthquake or extreme weather event. Workforce capacity constraints typically mean that the rebuild must be sequenced over multiple years, rather than delivered all at once. Sharing information through the Pipeline helps infrastructure providers to understand collective recovery needs and sequencing options, because no single infrastructure provider holds all the information that is needed, and it is disruptive to set up new information collection processes. The Pipeline provides a common platform to support bespoke information requests, integrate project data, and coordinate across providers.

Information in the Pipeline can enable infrastructure providers to coordinate with each other.

Because the Pipeline includes a large and growing share of planned infrastructure investment, it provides the most comprehensive view of anticipated demand, current constraints and sequencing opportunities. To support this, Pipeline data can be presented at a regional or sectoral level, as well as highlight investment themes, such as initiatives to recover from a natural hazard event. Workforce requirements to deliver projects in the Pipeline are also modelled and presented.

Projects' planning and funding status are transparent to decision-makers and the public

Project choices should be clear.

A difference exists between projects that are in procurement or delivery, and those that are unfunded and in various stages of planning. Projects in procurement or delivery represent existing funding commitments made by decision-makers. Unless significant changes occur, for instance large unforeseen cost or scope changes, these commitments should stand. By contrast, unfunded projects in the planning stages represent choices that are still available.

Infrastructure providers and the construction sector should treat unfunded projects as more uncertain than funded ones.

While it is important to have visibility over projects in planning that may proceed, they will not all be funded. Priorities and project costs may change, or it may not be affordable to build everything that's being explored.

The Pipeline presents what we currently know about available project choices.

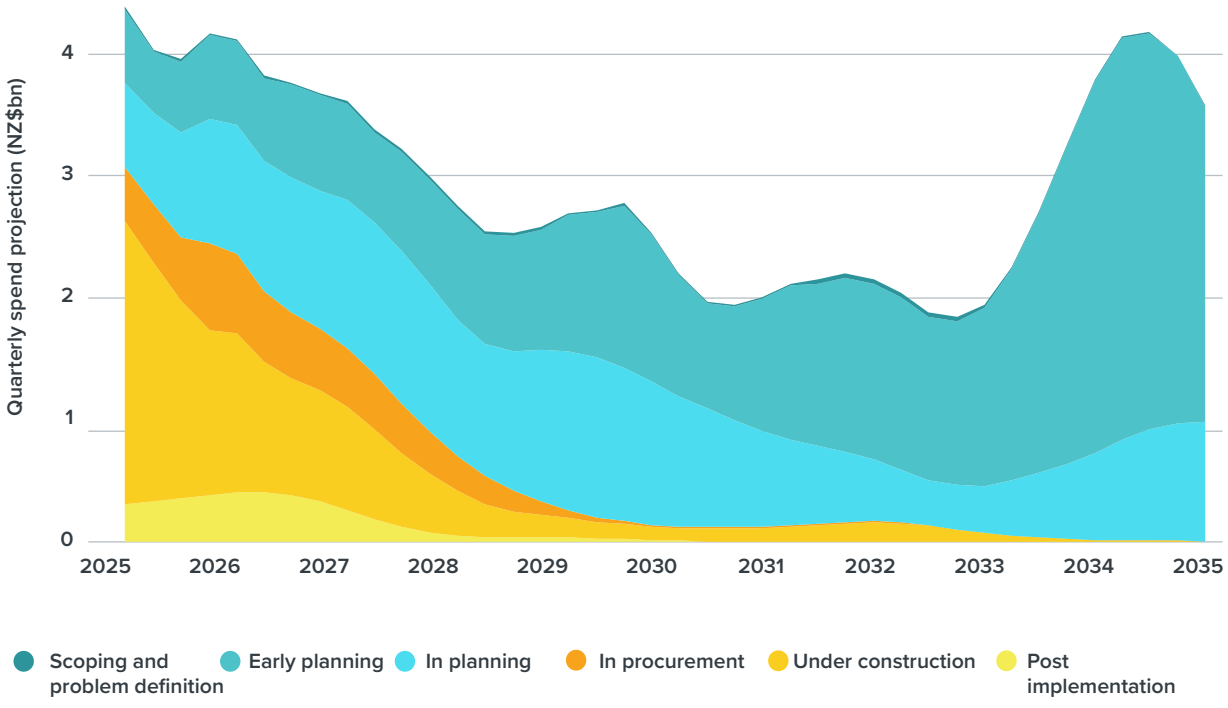
We use the information received from infrastructure providers about their initiatives to model the projected spend to deliver projects in the Pipeline (Figure 35). In the near term, most of these projects are under construction or in procurement. In later years, most projects that are in various stages of planning, from scoping and problem definition through to detailed planning before a funding decision. This reflects the fact that infrastructure providers do not make detailed financial commitments many years in advance.

Projects in the planning stages need to be robustly tested.

The quality of upfront planning shapes whether projects can be successfully delivered with the desired benefits. The Pipeline explains the activity within the infrastructure system through the collection of a common set of information across all known infrastructure initiatives in planning and delivery. However, it does not test the quality of these projects or investments. Other tools, like the Infrastructure Priorities Programme discussed below, are needed to test project quality.

Most unfunded projects in the Pipeline are in the early planning stages

Figure 35: Quarterly spending projections for projects in the Pipeline, 2025–2035



Source: 'March 2025 Pipeline snapshot'. New Zealand Infrastructure Commission. (2025).

Opportunity costs of investment choices are clearly identified

Choosing to fund one project may limit our ability to pay for something else.

This situation is particularly important for central government infrastructure, where systematic misalignment can occur between investment intentions and available funding (see Section 4). The Pipeline helps to provide transparency of these initiatives. The opportunity costs of investment need to be recognised by decision-makers.

Decision-makers should anticipate the need for both large and small projects.

Some large projects are planned far in advance, reflecting their complexity, size and scale relative to market capacity but smaller projects do not need to be planned as far in advance before they are expected to be needed. As a result, longer-term Pipeline spending projections mainly reflect large projects in the planning stages. But, if too many large projects are committed years in advance, it will limit our ability to fund smaller projects that will be needed later.

The Pipeline presents information on projects of all sizes.

While major projects that can cost a billion dollars or more can often draw focus, most individual projects are much smaller. The Pipeline includes 7,918 projects with an expected cost of less than $100 million, 97% of all initiatives by number. These projects account for 25% of the total value of projects in the Pipeline. At the other end of the scale, the Pipeline currently includes 28 ‘megaprojects’ with expected costs of $1 billion or more, accounting for 49% of the total value of projects in the Pipeline.

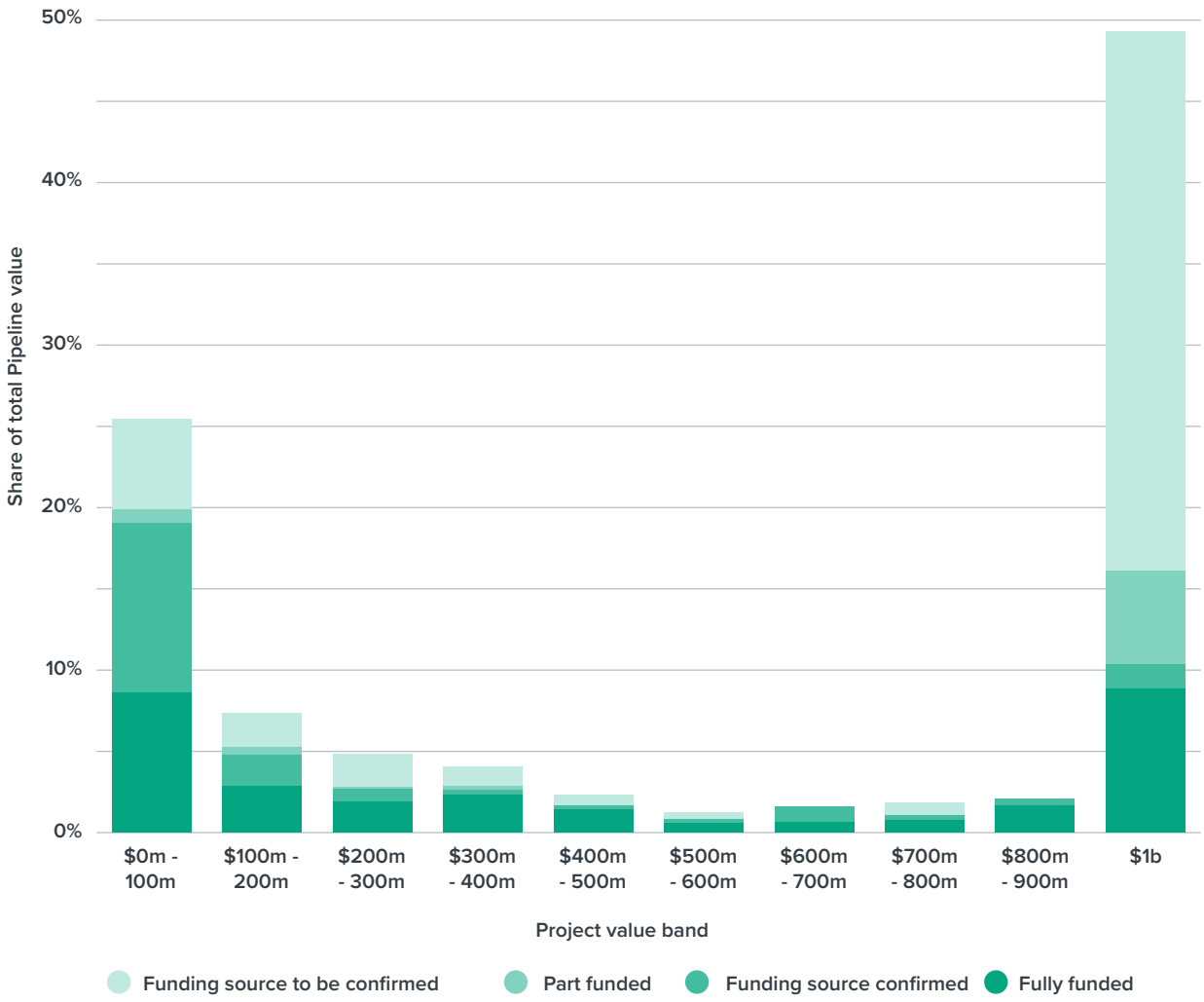
Transport megaprojects pose the biggest upcoming choices.

Almost half of the total value of projects in the Pipeline – $95 billion out of $207 billion – do not yet have committed funding (Figure 36). Most of the unfunded value comes from a small number of large projects, mostly in land transport, and large projects are much less likely to have confirmed funding. Whereas 78% of the aggregate value from small projects has confirmed funding or a funding source, only 33% of the value of large projects has a confirmed funding source. Choices about funding these projects will therefore have a large impact on what else we can afford to do.

Table 5 provides a list of large projects in the planning stages that infrastructure provides have submitted to the Pipeline as of March 2025.

Larger initiatives account for a significant proportion of projected spending but are largely unfunded

Figure 36: Distribution of initiatives in the Pipeline by expected project cost, as of March 2025



Source: 'March 2025 Pipeline snapshot'. New Zealand Infrastructure Commission. (2025).

Barriers to making informed decisions are minimised

The National Infrastructure Pipeline is an important evidence base for understanding the state of the infrastructure system.

The Pipeline is New Zealand's national dataset of infrastructure initiatives providing transparency on investments and activity to maintain, renew, and improve the infrastructure we all rely on. This evidence base supports the Commission's advice, along with funding and policy decisions that affect construction demand and supply of resources including workforce.

Important information should be available on infrastructure projects and investment programmes.

The Pipeline is a coordination mechanism for information on infrastructure initiatives underway and in planning from across the infrastructure system. This coordination is only effective if similar information is available for initiatives from different infrastructure providers. Infrastructure providers are invited to indicate their interest in receiving financing support from National Infrastructure Funding and Financing Limited.

Common information standards should be adopted within the infrastructure system.

This is important for reducing the costs to store, share and integrate information, as well as reducing the risk of inconsistent information being provided through different channels. Not everything needs to be standardised, but basic information should be available for all programmes and initiatives, and it should be possible to track these initiatives through their lifecycle.

The Pipeline supports efficient data collection and reduces duplication across government.

Ongoing quarterly updates to the Pipeline can be used to gather new information for a specific purpose and integrate with information from across government. For example, the Pipeline was used to help collect and present information on the timing of recovery and rebuild initiatives after the 2023 North Island Weather Events, as well as modelling the workforce implications of the rebuild. Other enhancements support monitoring of fast-track consenting initiatives. They will inform National Infrastructure Funding and Financing Limited's project list for potential external investment, as well as help regulators develop a better understanding of whether infrastructure providers' investment plans are deliverable.

6.2.3. Recommendations

The National Infrastructure Pipeline creates transparency over upcoming project choices.

Elsewhere in the Plan, we make several important recommendations about the need to update the Pipeline (in Section 3) and increase the quality of data within it (Section 5).

The National Infrastructure Pipeline (Pipeline) is New Zealand's national dataset of infrastructure initiatives.

The Pipeline continues to evolve and capture a greater proportion of activity within the broader infrastructure system and in March 2025 it features over 8,100 active projects from over 110 contributors, representing $207 billion in value.

Of the active projects, 141 have a total expected cost of over $100 million but are recorded as not having full funding committed.[98] This list includes 13 unfunded initiatives over $100 million that have been endorsed through the first round of the Infrastructure Priorities Programme and notes the stage they have been endorsed at.

The Pipeline is updated by organisations every three months as these infrastructure initiatives progress through their lifecycle. The information recorded included details like the status, location, sector, expected timing, procurement approach, and expected cost.[99] Table 5 reflects information from the March 2025 Pipeline update. The final National Infrastructure Plan will incorporate updates from the June and September 2025 Pipeline updates. The Commission will continue routinely updating information in the Pipeline making insights available to infrastructure providers and the market after the final Plan is published.

The National Infrastructure Pipeline signals upcoming choices for decision-makers

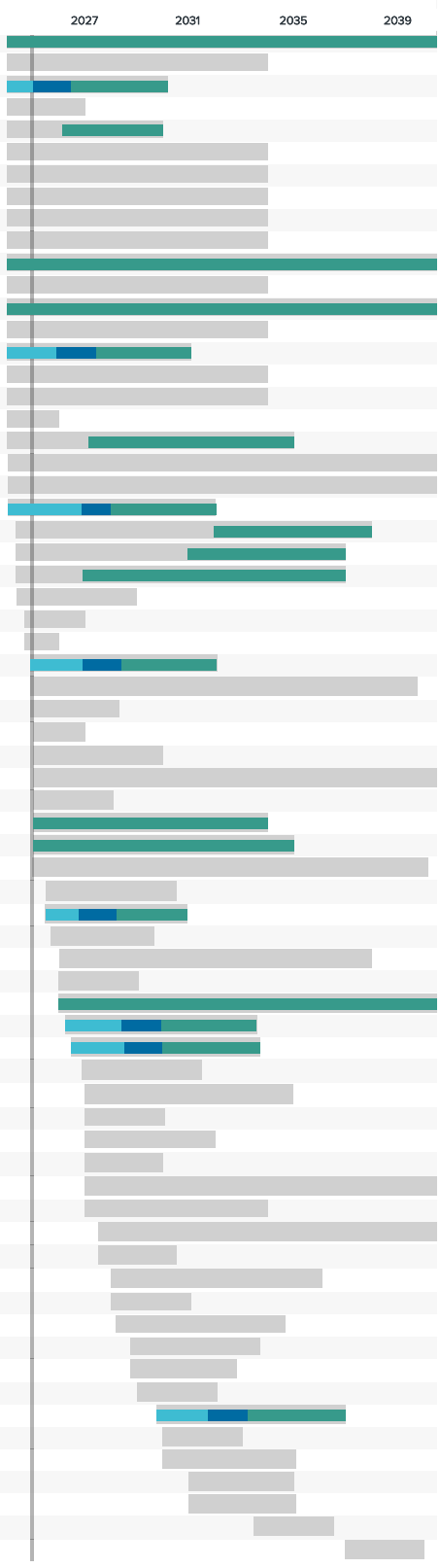
Table 5: Large projects in the planning stages

IPP endorsement (bold): 1 Stage 1 2 Stage 2 3 Stage 3 ✓ Funded — Project duration, Business case, Procurement, Construction

Initiative name	Organisation	Status	Value
UCP - Glen Innes to Tamaki Drive Scheme C/Way	Auckland Transport	Under construction	$$$
WW Akaroa Reclaimed Water Treatment & Reus...	Christchurch City Council	In planning	$$$
New Airport for Whangārei District	Whangarei District Council	Early planning	$$$
Northern Busway Extension Stations (Rosedale ...	Auckland Transport	In procurement	$$$
RoNS SH1 Cambridge to Piarere	NZ Transport Agency Waka Kot...	In planning	$$$$
Redevelopment of Scott Base - Antarctica (Main...	New Zealand Antarctic Institute	In planning	$$$
Elm St & Racecourse Parade , Avondale, Auckla...	Kāinga Ora–Homes and Comm...	In procurement	$$$
Renewals (TR)	Queenstown-Lakes District Cou...	In planning	$$$
Nga Kumikumi (Arlington &, Mt Cook, Wellington)	Kāinga Ora–Homes and Comm...	In procurement	$$$
AMDM (Accommodation) Linton Pilot	New Zealand Defence Force	In planning	$$$$
Connecting Mount Mauganui	NZ Transport Agency Waka Kot...	On hold	$$$
RoNS SH1 2nd Mt Vic Tun and BR Upgrade	NZ Transport Agency Waka Kot...	Early planning	$$$$
Wellington Metro Rail Network Programme - Sta...	KiwiRail Limited	In planning	$$$
SH1 Tokoroa to Taupo - CI Stage 2	NZ Transport Agency Waka Kot...	On hold	$$$
CBD WW Pump Stations and Rising main renew...	Wellington Water Limited	Under construction	$$$
Eastern Busway (EB) Alliance	Auckland Transport	Under construction	$$$$
Build to Rent - Gasometer Takapuna	McConnell Property Limited	In planning	$$$
Clarks Beach New Waste Water Treatment Plant	Watercare Service Limited	In procurement	$$$
Drinking Water network renewals	Upper Hutt City Council	Under construction	$$$
Wastewater network renewals	Upper Hutt City Council	Under construction	$$$
Transport network renewals	Upper Hutt City Council	Under construction	$$$
Low Cost Low Risk improvements 2021 - 2023 -...	Porirua City Council	Under construction	$$$
Cameron Road Stage 2	Tauranga City Council	In planning	$$$
New Aircraft Apron	Wellington International Airport ...	In planning	$$$
Cross Valley Connections	Hutt City Council	In planning	$$$
Waterloo Station TOD mixed-use development ...	Wellington Regional Council	In planning	$$$
Laboratory and Biocontainment Greenhouse N...	Ministry for Primary Industries	In planning	$$$
Wastewater Bulk Storage	Hamilton City Council	In planning	$$$
CRL Day One - Level Crossing Programme	Auckland Transport	Under construction	$$$
SH1 Additional Waitemata Harbour Connect	NZ Transport Agency Waka Kot...	Early planning	$$$$$
TSP007 - 15th Ave to Welcome Bay (Connectin...	Tauranga City Council	In planning	$$$
Carrington Road Corridor	Auckland Transport	Early planning	$$$
Te Papa Inten SW Upg Priority Dev Areas	Tauranga City Council	In planning	$$$
SH22 (Drury) Corridor Upgrade	NZ Transport Agency Waka Kot...	In planning	$$$
New Watermain Connecting Woodlands Park R...	Watercare Service Limited	In procurement	$$$
New North Harbour Number Two Watermain	Watercare Service Limited	In procurement	$$$
Waikato Water Treatment Plant A Raw Water Int...	Watercare Service Limited	In procurement	$$$
Te Utanganui - Central New Zealand Distributio...	Central Economic Development...	In planning	$$$$
Southwest Conveyance Phase 2b	Watercare Service Limited	In procurement	$$$
Housing on Corrections Land - Additional Capa...	Department of Corrections	In planning	$$$
Low Emission Ferry Programme - Landside Infra...	Auckland Transport	Under construction	$$$
Infrastructure Acceleration Funding	Hutt City Council	In planning	$$$
Roading	Marlborough District Council	In planning	$$$
North West Rapid Transit Improvements	NZ Transport Agency Waka Kot...	In planning	$$$$
Western Isthmus Point Erin Tunnel	Watercare Service Limited	In procurement	$$$
Huia Water Treatment Plant Upgrade (Planning)	Watercare Service Limited	In planning	$$$
Decarbonisation of the Ferry Fleet Stage 1 - Lo...	Auckland Transport	Under construction	$$$
New Domestic and International Jet Terminal	Wellington International Airport ...	In planning	$$$
Terminal Integration Enabling: Check-in Expansi...	Auckland Airport Limited	In procurement	$$$
Marine Defences and Seawall Reconstruction	Wellington International Airport ...	Early planning	$$$
816 Redclyffe Bridge	Hastings District Council	In planning	$$$
Development / Coastal Hazards	Hawke's Bay Regional Council	Early planning	$$$
Hingaia Pump Station upgrade and Rising Main ...	Watercare Service Limited	In planning	$$$
Wairau Valley Diversion	Watercare Service Limited	In planning	$$$
Upgrades of Separation and Wastewater Pipes ...	Watercare Service Limited	In planning	$$$
Orewa Number 3	Watercare Service Limited	In planning	$$$
Rosedale Sludge Conditioning	Watercare Service Limited	In planning	$$$
New Sludge Conditioning Process Construction...	Watercare Service Limited	In planning	$$$
Wastewater Treatment Plant Upgrades stage 1 -...	Watercare Service Limited	In planning	$$$
Wastewater Treatment Plant Upgrade - Army Bay	Watercare Service Limited	In planning	$$$
Pump Station and Rising Main Upgrade - Stanm...	Watercare Service Limited	In planning	$$$
Construction of Pipe Tunnel - Newmarket	Watercare Service Limited	In planning	$$$
CFIP Memorial Park Aquatic Facility	Tauranga City Council	On hold	$$$
Duplexing - Tokaanu-Whakamaru-A&B (Net Zer...	Transpower New Zealand Limited	In procurement	$$$
Upgrades of Separation and Wastewater Pipes ...	Watercare Service Limited	Early planning	$$$
CWTP Activated Sludge Plant	Christchurch City Council	In planning	$$$
Auckland Metro - Auckland Signalling Capacity I...	KiwiRail Limited	In planning	$$$
RoNS SH29 Tauriko (Wider Scope)	NZ Transport Agency Waka Kot...	Early planning	$$$
Te Matai Area 33kV Security Constraints	Powerco Limited	Early planning	$$$

IPP endorsement (bold): 1 Stage 1 2 Stage 2 3 Stage 3 ✓ Funded — Project duration — Business case — Procurement — Construction

Initiative name	Organisation	Status	Value
Local Wastewater Network Renewals	Watercare Service Limited	Early planning	$$$
Auckland Distribution Asset Replace	Vector Limited	Early planning	$$$
Biogas and Co-generation Expansion - Mangere	Watercare Service Limited	Early planning	$$$
Wastewater Bulk Storage	Hamilton City Council	Under construction	$$$
RoNS SH6 Hope Bypass	NZ Transport Agency Waka Kot...	Early planning	$$$
Flood Control / Drainage scheme - Heretaunga ...	Hawke's Bay Regional Council	Early planning	$$$
Flood Control / Drainage scheme - Upper Tukit...	Hawke's Bay Regional Council	Early planning	$$$
Northern New Connections	Vector Limited	Early planning	$$$
Auckland RMU Replacement	Vector Limited	Early planning	$$$
Auckland Various OIP	Vector Limited	Early planning	$$$
Stormwater network renewals	Upper Hutt City Council	Under construction	$$$
Auckland Subdivisions - Residential	Vector Limited	Early planning	$$$
Wastewater Joint Venture Programme	Upper Hutt City Council	In planning	$$$
Auckland New Connections	Vector Limited	Early planning	$$$
WWS Upper Nihotupu Raw Watermain Replace...	Watercare Service Limited	Early planning	$$$
Northern Distribution Asset Replace	Vector Limited	Early planning	$$$
Flood Control / Drainage scheme - Warioa Floo...	Hawke's Bay Regional Council	Early planning	$$$
Wastewater Network Capacity Upgrade Sub-Pr...	Hamilton City Council	In planning	$$$
RoNS Mill Road Stage 1	NZ Transport Agency Waka Kot...	Early planning	$$$$
Critical Network Investment - Overdue renewals	KiwiRail Limited	Under construction	$$$
Auckland Metro - Avondale to Southdown cross...	KiwiRail Limited	In planning	$$$$
Clifton Wastewater Treatment Plant Discharge ...	Invercargill City Council	Early planning	$$$
RoNS East West Link	NZ Transport Agency Waka Kot...	Early planning	$$$$
RoNS Petone to Grenada Link Road and CVL	NZ Transport Agency Waka Kot...	Early planning	$$$$
RoNS Hamilton Southern Links	NZ Transport Agency Waka Kot...	Early planning	$$$$
RoRS Second Ashburton Bridge	NZ Transport Agency Waka Kot...	Early planning	$$$
Water Network Improvement Sub-Programme	Hamilton City Council	Early planning	$$$
Pukete WWTP Upgrade	Hamilton City Council	In procurement	$$$
Pukekohe Upgrade Stage 3	Watercare Service Limited	Early planning	$$$
Homes For Families Programme (Defence Hous...	**New Zealand Defence Force**	**Early planning** 2	**$$$$**
Regional Pathways MTS 4X New Stands	Auckland Airport Limited	In procurement	$$$
Manawatu Regional Freight Ring Road	**Palmerston North City Council**	**Scoping and proble...** 1	**$$$**
Waikato and Upper North Island - Series Capaci...	Transpower New Zealand Limited	In planning	$$$
Auckland Metro - Southern corridor 4 tracking (...	KiwiRail Limited	Early planning	$$$$
De-risk Major Hubs - Greymouth; Gore; Blenheim	New Zealand Police	Early planning	$$$
3 Waters Pipe Renewals	Invercargill City Council	In planning	$$$
Transport All Asset Renewals	Whakatāne District Council	Under construction	$$$
Draft Defence Estate Regeneration Plan 2025-...	**New Zealand Defence Force**	**Scoping and proble...** 1	**$$$$**
Expanding Fibre Broadband Coverage	**Chorus Limited**	**Scoping and proble...** 1	**$$$$**
Construction of Reservoir Storage - Woodlands ...	Watercare Service Limited	Early planning	$$$
Upper South Island Transmission Capacity	Transpower New Zealand Limited	In planning	$$$
Additional Gore Stormwater Separation and/or r...	Gore District Council	Early planning	$$$
Major Hub renewals - Drury, Silverdale, Hamilto...	New Zealand Police	Early planning	$$$
RoNS Northland Corridor	NZ Transport Agency Waka Kot...	In planning	$$$$$
Helensville Wastewater Servicing Strategy	Watercare Service Limited	Early planning	$$$
Waikato A Stage 1 - to 225 MLD	Watercare Service Limited	Early planning	$$$
Hawkes Bay Regional Prison Redevelopment Pr...	**Department of Corrections**	**Scoping and proble...** 1	**$$$**
Te Mārua Water Treatment Plant Scheme Expan...	**Greater Wellington Regional Co...**	**Scoping and proble...** 1	**$$$**
Major Hub renewals - Waimuku, Ashburton, Nel...	New Zealand Police	Early planning	$$$
Cook Strait HVDC Submarine Cable Replaceme...	Transpower New Zealand Limited	Early planning	$$$
Ruakura Eastern Transport Corridor	**Hamilton City Council**	**In planning** 3	**$$$**
Future Naval Base Programme	**New Zealand Defence Force**	**Early planning** 2	**$$$**
Transportation - Pavement Rehabilitation	Western Bay of Plenty District C...	Early planning	$$$
Horizontal Infrastructure Programme (HIP)	**New Zealand Defence Force**	**Scoping and proble...** 1	**$$$**
Project Waitoa – vaulting and processing infrast...	**Reserve Bank of New Zealand**	**Scoping and proble...** 1	**$$$**
Accommodation, Messing and Dining Modernis...	**New Zealand Defence Force**	**In planning** 3	**$$$**
Major Hub renewals - North Canterbury, Cromw...	New Zealand Police	Early planning	$$$
Wairakei Ring - Phase 2 - Build	Transpower New Zealand Limited	Early planning	$$$
Tauranga 33kV Security Constraints	Powerco Limited	Early planning	$$$
Ohakea Infrastructure Programme Remaining Tr...	**New Zealand Defence Force**	**In planning** 3	**$$$**
Major Hub renewals - New Plymouth, Avondale,...	New Zealand Police	Early planning	$$$
Waikato A Stage 2 - plus 75 MLD	Watercare Service Limited	Early planning	$$$
Major Hub renewals - Pokeno, Mangere, Kaitaia...	New Zealand Police	Early planning	$$$
Motueka WWTP - Construction and new reticula...	Tasman District Council	Early planning	$$$
Central North Island Transmission Capacity Dup...	Transpower New Zealand Limited	In planning	$$$
Major Hub renewals - Wairoa, Kaikohe, Onehng...	New Zealand Police	Early planning	$$$
Greater Christchurch Mass Rapid Transit	**Christchurch City Council**	**Scoping and proble...** 1	**$$$$**
Brownhill to Auckland Transmission Capacity	Transpower New Zealand Limited	Early planning	$$$



6.3. Get projects ready for investment

Ka whakarite i ngā kaupapa kia haumitia

6.3.1. Context

Projects in the planning stages should go through a rigorous stage-gate process before funding decisions.

This ensures they are ready to deliver and represent good value for money. The Treasury's business case guidance, discussed in Section 5, outlines what's needed for central government projects. However, transparency over projects in planning is currently limited, and some proposals seek funding before they are ready.

The Infrastructure Priorities Programme (IPP) provides structured independent review of infrastructure proposals' readiness for investment.

It is designed for unfunded, nationally important infrastructure projects, or initiatives that avoid the need for infrastructure. It undertakes a more detailed review of important planning documents that are submitted to the Commission at several points in the planning process.

We assess the strategic alignment, value for money, and deliverability of proposed projects.

Projects are reviewed against a standard assessment framework, with an internal review process to ensure consistency in assessments. Assessment results indicate whether projects are ready for investment, and the next steps that can be taken to progress projects that need more work.

The first IPP round closed in December 2024.

We received 48 submissions from central and local government, the private sector, and other entities. The Commission endorsed 17 proposals across a range of sectors, including transport, water and wastewater, telecommunications, prisons, and the defence estate. Ten proposals cover seven of New Zealand's sixteen regions. Seven proposals would benefit multiple regions. There are several reasons why a proposal may not proceed to endorsement, including because it had insufficient information, was not infrastructure of national significance, was withdrawn, or was assessed but not endorsed. As a result, not progressing to endorsement does not necessarily mean that a proposal does not have merit. Proposals that were not included can reapply in the future if they have additional information that would help them meet the assessment criteria.

The IPP will be updated as we receive and review more project proposals.

To date, we have only assessed a subset of all potentially nationally important proposals in the planning stages. As a result, the IPP should not be considered as a prioritised list. We received over 70 proposals in the second IPP round, which closed in April 2025, and are in the process of triaging and assessing them.

The draft Plan includes the December 2024 IPP round.

Table 7 lists proposals that have been reviewed and endorsed to date. The final National Infrastructure Plan will incorporate projects from the April 2025 round. After publishing the final Plan, we will continue reviewing proposals, tracking them as they progress through planning, and publishing updated assessments.

A current list of projects reviewed by the IPP can be found here: **https://tewaihanga.govt.nz/our-work/infrastructure-priorities-programme/see-projects-in-the-IPP**

6.3.2. Strategic directions

Projects are funded after adequate planning is completed

Large infrastructure projects require a multi-stage planning approach to ensure they are adequately developed before a funding decision.

For public infrastructure projects, this involves a sequence of planning documents that define problems or opportunities, examine a broad set of options for addressing them, and develop a preferred option to the point where it can be funded for delivery.

Decision-makers and the public should understand what stage projects are at and the next steps that can be taken.

The IPP process is designed to provide this transparency. Projects can be endorsed at three stages, depending upon what planning they have done and how robustly they have addressed the requirements of each stage (Table 6). At each stage, our assessments identify next steps that can be taken to progress and strengthen these projects for successful delivery.

A step-by-step process is needed to get projects ready to fund

Table 6: Project planning stages and next steps that can be taken at each stage

Positively assessed at:	Stage 1	Stage 2	Stage 3
What this means	Proposal identifies a nationally important problem or opportunity that may have a feasible solution	Proposal identifies a nationally important problem or opportunity and a credible short-list of options for solving it	Proposal identifies a nationally important problem or opportunity and a preferred option for delivering it that provides good value for money and is deliverable
Main planning artefact at this stage	Strategic Assessment and Risk Profile Assessment	Indicative Business Case or Programme Business Case	Detailed Business Case
Next step for project proponents	Progress to an Indicative Business Case that identifies and assesses short-list options	Progress to a Detailed Business Case that identifies a preferred option and ensures that it is ready for delivery	Seek funding to deliver project

Many current proposals need more work before they are investment ready.

Most of the proposals we assessed in the first round of IPP assessments identify important problems and opportunities that could be solved through new investment. However, most of these proposals need further work before they are ready to fund. Two-thirds of proposals were endorsed at Stage 1, highlighting the need for further investigation before a funding decision.

Project proponents identify clear problems and choose cost-effective solutions

Infrastructure providers need to do more than just prepare business case documents.

Through these documents, they need to demonstrate they have taken the right steps to identify high-quality projects. Our IPP assessment framework outlines what good project planning looks like at each stage in planning.

Good projects start with a clear understanding of the 'size of the prize'.

New investment is aimed at addressing problems with existing infrastructure or pursuing opportunities to improve services. Project proponents should define the problems or opportunities they are seeking to address. They should also have a clear idea about how large they are, so they can focus on solutions that are proportional to the problem they are addressing.

Project proponents should consider a wide range of options, including low-cost and non-built solutions.

This is essential for guarding value for money and affordability of infrastructure investment. Planning that focuses on a narrow set of costly options is less likely to find high-value solutions. A better approach is to identify a long list of options, narrow it down to a short-list that includes low-cost options, and identify a preferred option that maximises value for money and cost-effectiveness.

Cost-effective projects are important for ensuring we can address all our infrastructure challenges.

We need to meet many requirements within our overall fiscal and affordability constraints. When individual projects are more expensive than they need to be to solve a problem, then it limits our ability to solve other problems. We can recognise these constraints and trade-offs by looking across our entire investment portfolio, but solving them requires us to lift project quality,

Projects set themselves up for delivery success

Infrastructure providers need to focus on what's required for timely delivery.

Planning for delivery should start at the early stages of project planning, although it is most important to get right at the point at which projects are seeking funding. Our IPP assessment framework outlines what good looks like at each stage in planning, focusing on the main factors that can support or hinder certainty about cost, scope, and timeframes during the build phase.

Infrastructure projects need clear project governance arrangements and appropriate project leadership capability.

Successfully planning and delivering a large or complex infrastructure project requires agencies to navigate many competing expectations and priorities. As outlined in Section 3, project leadership capability can help with this. Another important factor is establishing the right governance structures for projects to ensure decisions are timely, clear, and rigorous. Our previous project reviews show that unclear governance can flow through to problems in the delivery phase.

Cost and scope risks need to be identified and managed in the planning phase.

Uncertainty will always exist about what projects will actually cost, but project proponents should take steps to identify all major risks, understand their potential impact on costs and timeframes, and identify how to mitigate them through the design and delivery phases. Risk analysis should be informed by experience on past projects.

Agencies should understand how to engage the market before they go to procurement.

This means understanding potential suppliers, workforce capacity constraints, and the impacts of scope, design and timing choices on the feasibility of cost-effective procurement.

Lift the bar on project quality to get beyond fiscal constraints

Good project planning, supported by an operating environment that is enabling of investment, can help push out our fiscal constraints.

If we want to deliver more infrastructure projects, we need those projects to be cheaper to build or we need to raise more money to pay for investment.

Identifying and choosing high-quality projects is essential.

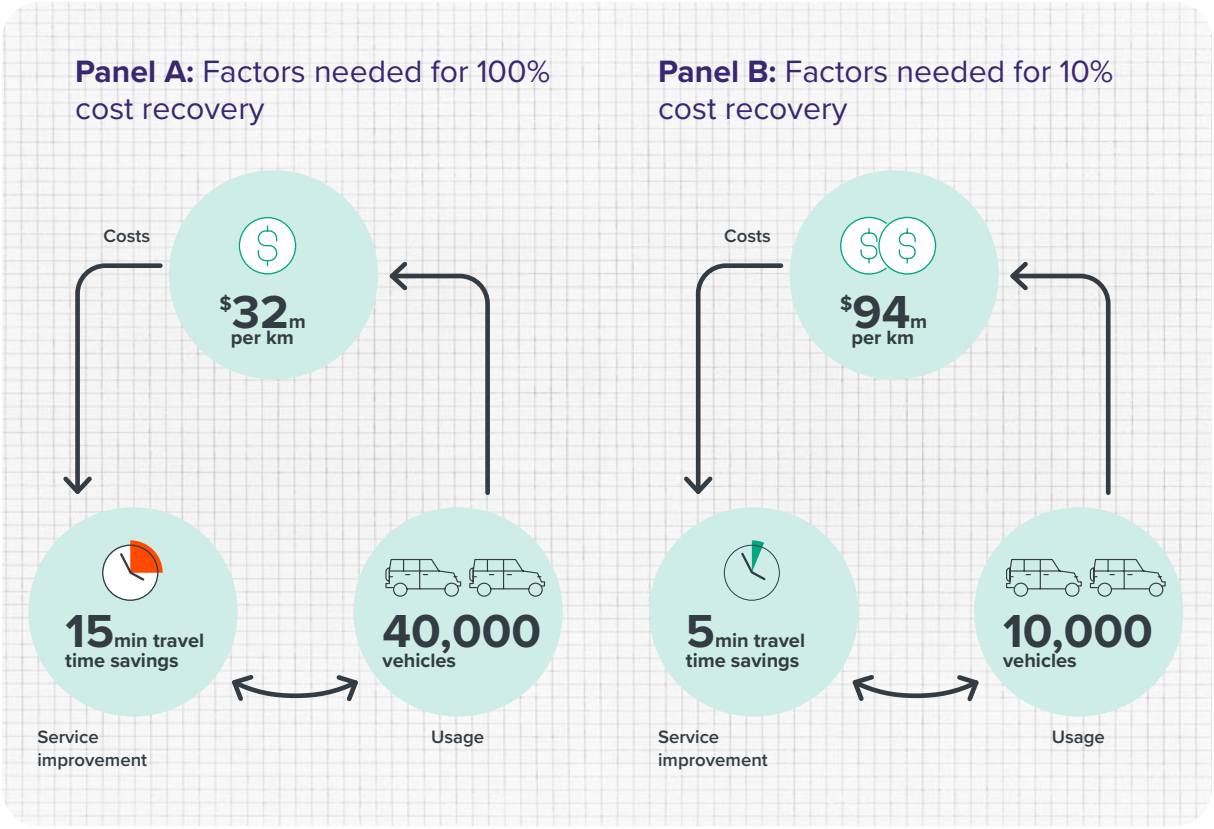
Projects that provide high benefits to many users, at an affordable and certain cost, are more likely to be able to generate new revenues to help pay for investment. For example, new toll roads can pay for themselves in some situations but not others (Figure 37). The bar is high for projects to be fully self-funding.

The IPP can help.

Our assessment framework is designed to help decision-makers prioritise high-quality projects that are ready for investment, reducing funding pressures and increasing revenue opportunities.

Revenue tools are more effective when project quality is high

Figure 37: Predicted cost recovery for new toll roads



Source: Infrastructure Commission modelling. https://tewaihanga.govt.nz/our-work/research-insights/buying-time-toll-roads-congestion-charges-and-transport-investment

Broader factors also matter for delivering projects cost effectively and maximising use and revenues.

Section 4 outlines how we need to improve the operating environment for infrastructure providers. Consistent implementation of these recommendations will improve the financial position for new and existing infrastructure. Recommendations are aimed at pricing infrastructure to enable projects to generate revenues, ensuring a stable and efficient regulatory environment, and integrating land use and infrastructure to maximise the number of people who use new and existing infrastructure.

6.3.3. Recommendations

The Infrastructure Priorities Programme provides an independent and transparent view of project readiness for investment.

Elsewhere in the Plan, we make several important recommendations about the need to update the IPP (in Section 3) and increase its use for reviewing central government investment (Section 5).

Investment readiness of selected projects in the planning stage

Table 7: Results from first round of Infrastructure Priorities Programme assessments
https://tewaihanga.govt.nz/our-work/infrastructure-priorities-programme/see-projects-in-the-ipp

Applicant	Organisation type	Proposal	Location	Sector	Endorsed	Brief Description of problem
New Zealand Defence Force	Central government	Draft Defence Estate Regeneration Plan 2025–2040	National		Stage 1	New Zealand's Defence estate is aged, prone to failure, often contaminated and generally in very poor condition, impacting on the delivery of military outputs. Inadequate remaining asset life is a significant risk to the New Zealand Defence Force and the health and safety of personnel. The Draft Defence Estate Regeneration Plan 2025-2040 sets the overall estate problem, regeneration direction and investment context.
New Zealand Defence Force	Central government	Horizontal Infrastructure Programme (HIP)	National		Stage 1	New Zealand has nine Defence Force camps and bases, which are serviced by a range of horizontal infrastructure, including three waters, electrical, information and communication technology, and roading infrastructure. This infrastructure has not received sufficient historical investment, resulting in infrastructure that is in poor condition and presents a growing risk to future Defence operations. This proposal looks to address these issues.
Reserve Bank of New Zealand	Central government	Project Waitoa – vaulting and processing infrastructure	National		Stage 1	The Reserve Bank's cash centre, including vault, are critical parts of the national cash system. The current cash centre is in Wellington and presents health and safety issues for staff, including risks related to asbestos materials. Project Waitoa aims to replace the current cash centre and vault that are at the end of their usable lives.
Department of Corrections	Central government	Hawke's Bay Regional Prison (HBRP) Redevelopment Programme	Hawke's Bay		Stage 1	Hawke's Bay Regional Prison has insufficient high security capacity to meet forecast demand. The current high security accommodation is poor quality, and the existing gatehouse and visitor reception facilities are not fit-for-purpose. The Hawkes Bay Regional Prison Redevelopment Programme is investigating options to increase capacity and provide fit for purpose facilities.

Applicant	Organisation type	Proposal	Location	Sector	Endorsed	Brief Description of problem
New Zealand Underground Asset Register	Local government	New Zealand Underground Asset Register (NZUAR)	National		Stage 1	A lack of reliable information on underground services, such as electricity, water, gas, and telecommunications pose significant risk to works in road corridors. These include construction delays and the risk of worker harm due to the risk of accidentally hitting an underground utility line during construction. The New Zealand Underground Asset Register is a proposal for a database of underground assets within the country's road corridors.
Palmerston North City Council	Local government	Manawatū Regional Freight Ring Road	Manawatū		Stage 1	Palmerston North and surrounding areas are facing issues with access, safety, maintenance and resilience of key freight corridors. Local authorities in the Manawatū region are exploring ways to address these issues.
Christchurch City Council	Local government	Greater Christchurch Mass Rapid Transit	Christchurch		Stage 1	Strong future population growth and settlement patterns in the Christchurch metro area are projected to put pressure on the city and region's transportation system and increase dependence on less efficient travel modes like private vehicles. Christchurch City Council is exploring ways to encourage greater public transport ridership.
Nelson City Council	Local government	Atawhai Rising Main Renewal	Nelson		Stage 1	The Atawhai Rising Main serves north and central areas of Nelson, and conveys about half of the city's wastewater. While the rising main underwent remediation in the 1990s, with an expected service life to 2046, a number of recent failures suggests it is deteriorating faster than anticipated. Without intervention there will be a growing risk of future disruptions to wastewater services in Nelson. This proposal looks to address these issues.
Greater Wellington Regional Council	Local government	Te Mārua Water Treatment Plant Scheme Expansion Stage 1 (Pākuratahi Lakes)	Wellington		Stage 1	There is a growing risk of insufficient water supply to meet the urban water demand of Wellington, Porirua, Hutt and Upper Hutt cities. If unaddressed, insufficient supply will lead to severe restrictions and could limit growth in the cities. Greater Wellington Regional Council is exploring options to increase water supply.

Applicant	Organisation type	Proposal	Location	Sector	Endorsed	Brief Description of problem
Hamilton City Council	Local government	Southern Metro Wastewater Treatment Plant	Waikato		Stage 1	Local authorities, iwi, communities and industry in the Hamilton metro area face challenges in meeting current and future wastewater service needs. Ongoing population growth and development in the metro area and the broader Waikato River catchment is increasing pressure on land and water. This proposal is looking to address these issues.
Chorus Limited	Private sector	Expanding Fibre Broadband Coverage	National		Stage 1	While most New Zealanders now have access to high-speed fibre broadband internet, 13% of New Zealanders in more rural communities rely on internet connections that provide lower levels of service. Chorus is proposing a nationwide project to improve internet connectivity beyond the initial rollout of fibre broadband.
Kordia Group Limited	State-owned enterprise	Telecommunications Network Resilience	National		Stage 1	New Zealand faces resilience issues relating to key telecommunication technologies (including cellular services, VHF and FM radio, digital terrestrial television) that are critical for responding to civil defence emergencies. This project has identified opportunities to improve resilience of telecommunications in several regions.
New Zealand Defence Force	Central government	Future Naval Base Programme	Auckland		Stage 2	Devonport Naval Base in Auckland is the home of the Royal New Zealand Navy. Many assets at the base are operating beyond their design life. It is estimated that over three quarters of the base will require significant regeneration before 2050. The Future Naval Base Programme is a proposal for the regeneration of the base through a range of projects.
New Zealand Defence Force	Central government	Homes for Families	National		Stage 2	The Defence Force currently provides approximately 1,800 houses to 1,400 regular force members, across nine camps and bases in New Zealand. This proposal aims to align the supply of this housing to demand and address the current poor condition of houses by leasing or building new homes in areas of high demand and/or refurbishing existing housing where economical to do so, and disposing of housing in locations where there is excess supply.

Applicant	Organisation type	Proposal	Location	Sector	Endorsed	Brief Description of problem
New Zealand Defence Force	Central government	Accommodation Messing and Dining Modernisation Linton Project	Manawatū		Stage 3	The existing barracks at Linton Military Camp in Palmerston North are in poor condition, not fit-for-purpose, and present health and safety risks to personnel. This is the first in a programme of reinvestment in barracks and messes on all nine New Zealand Defence Force camps and bases. This project proposes 1,124 new barrack rooms and a new mess. Messing assets include kitchen, dining and social spaces.
New Zealand Defence Force	Central government	Ohakea Infrastructure Programme Remaining Tranches	Manawatū		Stage 3	Base Ohakea plays a key role in maintaining New Zealand's national security. It acts as the principal air point of entry and departure for the Royal New Zealand Air Force and is used by the Royal New Zealand Navy and New Zealand Army as a base for training and operational outputs. The Ohakea Infrastructure Programme is a major strategic initiative to meet future operational requirements for Base Ohakea. The proposal is for the remaining Tranches (3 and 4) of the wider programme.
Hamilton City Council	Local government	Ruakura Eastern Transport Corridor	Waikato		Stage 3	The existing transport network in Ruakura, Hamilton cannot support future growth. The Eastern Transport Corridor is a major arterial road proposal for the area. This proposal would provide for new transport connections for freight movement, employment trips and residential movements in Ruakura.

7 Embed good practice: The sectoral view

He tāmau i ngā tikanga mahi pai: te tirohanga rāngai

Challenges and opportunities at the sector level

Ngā wero me ngā arawātea i te taumata rāngai

Summary

- All infrastructure sectors will need to continue maintaining and renewing existing assets as well as investing in new or improved assets.
- Individual sectors, however, will face different challenges and opportunities. That's because, in part, infrastructure sectors have different operating environments.
- For the draft Plan, we have focused on seven broad sectors, including land transport, electricity and gas, water and waste, telecommunications, education, public hospitals, and public administration and safety.

7.1. Context: Infrastructure sectors face different challenges

Te Horopaki: He rerekē ngā wero kei mua i ngā rāngai tūāhanga

Our system-level advice is intended to set up infrastructure providers, across all sectors, for success.

However, individual infrastructure sectors face different challenges when it comes to planning, funding and delivering investment that meets current and future demands.

Infrastructure sectors face different current and future demands.

All infrastructure sectors will need to continue maintaining and renewing existing assets as well as investing in new or improved assets. But, as outlined in Section 3, economic, demographic, technological and climate trends facing us will have varying impacts on different sectors. Some sectors will need to consolidate in the face of slowing demand growth, and others will need to continue growing their networks.

Infrastructure sectors have different operating environments.

Section 4 outlines the main features of the operating environment. These include oversight and accountability arrangements, which differ between central government, local government, and commercial entities, and pricing and funding arrangements, which differ between networks and social infrastructure. Other features of the operating environment, like resource management legislation, affect all infrastructure sectors. This affects how those sectors can respond to shifting investment demands.

Infrastructure sectors are structured differently, which affects how decisions are made.

This includes different arrangements for providing and regulating infrastructure. The number of entities involved in infrastructure provision, and how they coordinate with each other, varies between sectors.

This section of the Plan provides a sectoral view on the challenges and opportunities that are presented in previous sections of the Plan.

It brings together important information at the sectoral level. This includes information on institutional structures, funding models, investment demand drivers, community perceptions and expectations, current network performance, future forecasts for investment demand, comparisons with current investment intentions, and the main issues and opportunities facing each sector.

Current intentions information draws from the most recent available information.

The information presented draws from the National Infrastructure Pipeline at March 2025, Council Long Term Plans, investment intentions submitted to the Treasury in June 2024, and their Quarterly Investment Report (QIR) information from December 2024. Investment intentions for generation in the electricity sector are based on a 2023 survey of generators for the Electricity Authority which has been updated with information from public announcements. The Commission has applied assumptions and modelled spend from the project information available. The final Plan will include updated information from these sources. Care is needed, however, drawing conclusions from direct comparisons because the bars do not always reflect equivalent information but show an aggregate view from a project or investment planning perspective.

Current intentions are indicated in a chart for each sector using two bars for each of the next 10 years.

The left bar shows aggregate investment across individual initiatives (bottom up) and the right bar shows investment intentions from longer term planning and medium risk projects and programmes in the QIR. Commitment is indicated from strong at the bottom (deeper colours) to weaker at the top (lighter colours) across each information source. These intentions are contrasted against our forward guidance on long-term infrastructure investment demand in each sector.

Sector summaries also draw upon our other work.

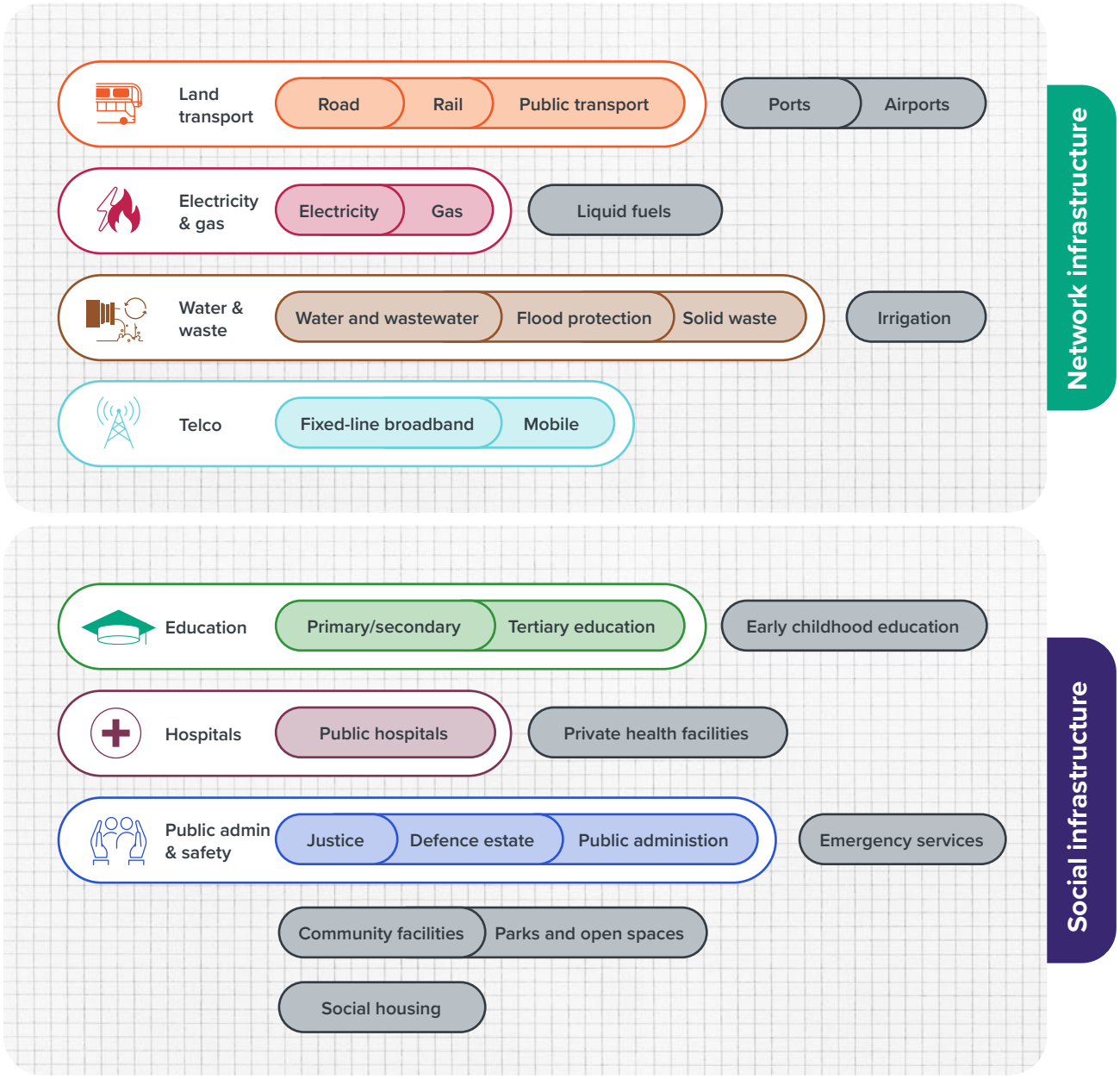
This includes work on international comparisons, historical investment trends, and forward guidance on future investment demands that were summarised in Section 3, as well as our review of public opinion research about public perceptions of infrastructure needs.[100] It also draws upon other information that we have published, such as sector state of play reports published before the Infrastructure Strategy, our recent report on asset management practices, and performance monitoring dashboards for the four network infrastructure sectors. [101]

The sectoral view is a work in progress.

We focus on seven relatively broad sectors, each of which includes multiple sub-sectors that have their own distinct dynamics (Figure 38). Our approach to defining these sectors is influenced by data availability, including how sectors were defined in the historical statistical data we draw upon. [102] Where meaningful differences exist within sectors, we have noted them. Further work is needed to disaggregate some sectors, in particular separating the Justice and Defence Estate sectors that are currently grouped under the 'Public Administration and Safety' sector, and to add information on other sectors that are not yet captured here, such as the Ports and Airports sectors and other types of social infrastructure, such as parks and open spaces.

Infrastructure sectors included in our sector summaries

Figure 38: How we defined and grouped infrastructure sectors



Sources: 'Taking care of tomorrow today: Asset Management State of Play'. New Zealand Infrastructure Commission. (2024); 'The Infrastructure Needs Analysis Forecast: Results and modelling technical report'. New Zealand Infrastructure Commission. (2025).

7.2. Land transport

7.2. Ngā tūnuku whenua

7.2.1. Institutional structure

Service delivery responsibilities

- Land transport infrastructure provided by mostly 'monopoly' service providers.
- The land transport sector includes state highways (provided by the New Zealand Transport Agency (NZTA), a central government agency), local roads and paths (provided by local road controlling authorities), local public transport services (planned and contracted by regional councils, with some routes provided by commercial entities) and rail (infrastructure, rolling stock, and freight and inter-regional passenger services provided by KiwiRail, a central government state-owned enterprise.

Governance and oversight

- Within-sector governance features rail and road networks regulated by NZTA.
- NZTA sets rules and standards for state highways, local roads, rail, walking and cycling, and public transport infrastructure and services.
- The NZTA Board makes independent decisions on which activities to include in the National Land Transport Plan (NLTP) but must give effect to direction and funding allocations in the Government Policy Statement on Land Transport (GPS), which is set by the government.
- The Ministry of Transport provides policy advice to government on the overall transport system.

7.2.2. Paying for investment

- Historically, land transport has been fully funded through user charges. However, in recent years, delivering Government's investment priorities for both road and rail infrastructure have required substantial Crown grants and loans in addition to user charges. Without changes to pricing or investment priorities, this is expected to continue in the future.
- Road networks and urban public transport are, or should be, primarily funded through a combination of user charges and rates. The National Land Transport Fund, managed by NZTA, obtains revenues from fuel excise duty, road user charges, and vehicle and driver registration and licensing fees. These charges are set by Cabinet. Local authorities use rates, public transport fares and other transport charges to co-fund council road and public transport networks.
- NZTA allocates funds from the National Land Transport Fund through activity classes across its nationally delivered activities and local transport initiatives put forward by councils.
- Rail networks are, or should be, primarily funded by users in the form of track user charges. This includes contributions from urban public transport users and local governments, for access to urban passenger rail networks.

7.2.3. Historical investment drivers

- Investment in new transport networks is initially driven by technological innovations (for example, invention of railways and cars), and then by improving connectivity and maintaining the existing network.
- As networks mature, maintaining and renewing existing assets becomes a major driver of spending. Road age, increasing network use and natural hazard events, including climate-related events, influence maintenance and renewal spending demands.
- Once an extensive network is built out, further improvements are driven by population growth (concentrated in certain areas to relieve congestion), economic development (also concentrated), and rising level of service expectations among users.

7.2.4. Community perceptions and expectations

- There generally seems to be agreement that the performance of New Zealand's land transport system is not always meeting New Zealanders' expectations. However, views on how to improve performance and willingness to pay higher charges are more varied. Equity, accessibility, safety and ongoing service provision are major considerations.
- Because transport costs are the largest infrastructure-related spending item in household budgets, changes in costs matter to consumers, particularly for fuel prices which feed into general cost-of-living concerns.

7.2.5. Current state of network

New Zealand's difference from comparator country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Roads	+34%	-13%	-33%	-13%
Rail	-64%	-43%	-23%	-90%

Comparator countries: *Columbia, Czechia, Canada, Finland, Iceland, Sweden, Norway, Sweden (plus Japan and Spain for rail). Similarity based on: Income, population density, terrain ruggedness, urban populations, (as well as costal land area and heavy materials production for rail). Percentage differences from comparator country averages are based on a simple unweighted average of multiple measures for each outcome. Further information on these comparisons is available in a supporting technical report.* [103]

- New Zealand has an average-sized, sparsely used road network, which is also the case for our comparator countries. Across broad metrics of quality, we are about average, except for the safety of our roads, which have higher fatality rates than our peers.
- Our rail networks are characterised by very low levels of investment and low usage, for both passenger and freight rail. The length of our network is comparable to our peers, although our network electrification is low. New Zealand's rail services also score comparatively poorly on measures of rail quality.
- The Commission also publishes performance dashboards that can be used to understand changes in the performance of New Zealand's transport sector over time. [104]

7.2.6. Forward guidance for capital investment demand

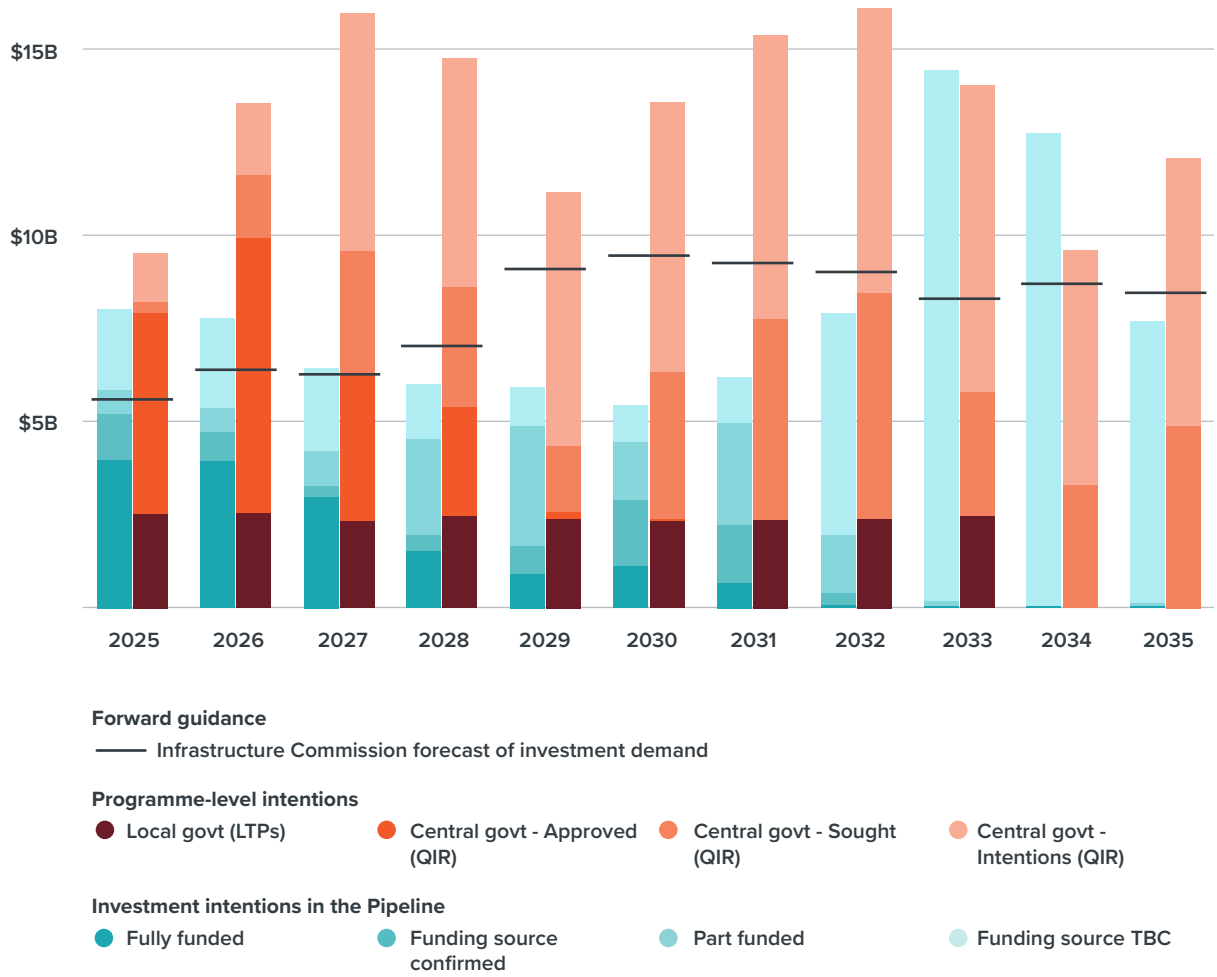
Land transport (roads, rail, public transport)	2025–2035	2035–2045	2045–2055	2010–2022 historical average
Average annual spending (2023 NZD)	**$3.4 billion**	**$4.1 billion**	**$4.5 billion**	**$3.5 billion**
Percent of GDP	**0.8%**	**0.8%**	**0.8%**	**1.3%**

This table provides further detail on forward guidance summarised in Section 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report. [105]

- Overall, slowing population and income growth are expected to put downward pressure on the population's willingness to pay for significant expansions or quality improvements to land transport networks.
- Renewal needs will therefore make up a rising share of total investment demand. Resilience to natural hazards will add to this. Large investments in state highways during the 2010s will require future renewal during the forecast period. Similarly, with rail, if we choose to keep our current network size, investment will need to increase, although not to the levels observed in the last 10 years.
- Demand shifts associated with meeting legislated net-zero carbon emissions pathways will also lead to a shift in the composition of investment demand. Climate Change Commission modelling for the Fourth Emissions Budget suggests that this will lead to a shift in travel demand from private vehicle travel to public transport and active modes, even after accounting for increased electric vehicle usage. Roughly speaking, this will offset expected road demand growth from population and income growth. This will lead to increased demand for public transport infrastructure investment and reduced demand for road capacity investment, primarily for state highways which have historically been more responsive to increased private vehicle demand. The above figures include the net impact of these two shifts.

7.2.7. Current investment intentions

- Road and rail investment has risen in recent years. It is expected to continue rising, based on infrastructure providers' project intentions and programme-level investment intentions.
- The following chart shows that projected spending to deliver initiatives in planning and delivery in the Pipeline (blue bars) and programme-level intentions in local government Long Term Plans and central government's reporting to the Treasury's Investment Management System (red and orange bars) are significantly higher than the Commission's investment demand outlook (black lines) over the 2025–2035 period.
- A large share of investment intentions reported to the Treasury and shown in later years in the Pipeline are currently unfunded.



This chart compares two different measures of future investment intentions with the Commission's forward guidance on investment demand. The blue bars show project-level investment intentions from the National Infrastructure Plan, distinguishing based on funding status. The red and orange bars show an alternative measure of investment intentions based on programme-level data from local government Long Term Plans and central government's reporting to the Treasury's Investment Management System, again distinguishing by funding status. The black lines show the Commission's forward guidance on investment demand.

7.2.8. Key issues and opportunities

- **Pricing and governance:** On the whole, network costs should be paid for with user charges because most benefits flow to current users. However, investment intentions and user charges are currently not aligned. Resolving this issue could ensure that investment plans are better matched by the users' willingness to pay. Other pricing mechanisms used in other jurisdictions, such as tolling and congestion charging, could also be used to manage congestion and demand for new capacity in the face of uncertain income and population growth.
- **Improved coordination:** Spatial planning done well can help identify where transport (as lead infrastructure) is required to support urban growth and regional development. Spatial planning is also important for maximising the benefits of investment in transport when paired with technology and travel demand initiatives, while managing network adaptation to climate change impacts.
- **Policy certainty:** Consistent policy priorities for land transport investment could help local government to deliver their own investment plans and the construction industry to deliver. Government policy approaches for meeting emissions goals will have an impact on the sector by affecting the mix of investment in relative modes of transport.
- **Investment planning:** Long-term planning for the level and mix of investment in land transport could be informed by the Commission's investment demand outlook to ensure that land transport is not crowding out other sectors.
- **Project appraisal:** In recent decades, the value for money of funded transport projects has declined, as other factors, such as alignment with government objectives have taken priority. There is a role for strengthened project appraisal prior to investment decisions.

7.3. Water and waste

7.3. Te wai me te para

7.3.1. Institutional structure

Service delivery responsibilities

- The water and waste sector includes drinking water, wastewater, and stormwater infrastructure and services; river control and flood protection; and solid waste management. It also includes irrigation, which we discuss briefly but do not include in our investment demand analysis.
- Territorial local authorities provide most drinking water, wastewater and stormwater services, although there is some community self-supply and private sector provision. Regional councils provide river control and flood protection infrastructure.
- Irrigation infrastructure and services are provided by a variety of private and user-owned schemes, sometimes with a degree of local government involvement.
- Solid waste infrastructure and services are provided by both territorial local authorities and private firms.

Governance and oversight

- The Water Services Authority – Taumata Arowai regulates drinking water safety. The Commerce Commission has been tasked with economic regulation for drinking and wastewater services, starting with oversight of Watercare, which provides water services to the Auckland region.
- Regional councils regulate freshwater and coastal water quality under the Resource Management Act 1991 and relevant national direction.
- The Department of Internal Affairs and Ministry for the Environment provide policy stewardship for the water sector and waste sector respectively.

7.3.2. Paying for investment

Local government water services

- Around 57% of users are charged through volumetric water charges, with the balance charged through rates on connected properties.
- Stormwater provision is typically provided through rates or targeted rates.
- In recent years, some central government grants have supported water services, but this is not a persistent feature of the funding model.

Solid waste services

- Solid waste services are paid through a combination of council rates and disposal levies charged to those who create and dispose of waste.
- Central government applies a waste disposal levy for each tonne of waste deposited in most landfills. These funds are used by government and councils to support waste minimisation efforts.

7.3.3. Historical investment drivers

- During the late 1800s and early 1900s, water networks were built in response to technological innovations (indoor plumbing, flush toilets), public health drivers (reducing waterborne diseases in urban areas) and population growth.
- Servicing growth and maintaining and renewing the existing network has been the focus of a significant amount of investment since the early 2000s.
- Rising standards, both environmental and health, for drinking and wastewater have driven growth in investment recently.
- Stormwater investment has lifted in recent years after the separation of wastewater and stormwater networks, and additional council focus on flood risk mitigation.

7.3.4. Community perceptions and expectations

- Survey data suggests that having enough clean water, particularly safe drinking water, is an important priority for New Zealanders.
- Although New Zealanders rate the quality of our water and sewerage systems about the same as people in other countries, New Zealanders still perceive it as an investment priority.
- New Zealand's flood protection infrastructure is rated as a priority for just under half of New Zealanders, according to one survey.

7.3.5. Current state of network

New Zealand's difference from comparator country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Water	**+70%**	**-3%**	**+99%**	**+9%**

Comparator countries: *Chile, Greece, Spain, Czechia, Canada, Finland, Sweden, Iceland. Similarity based on: Income, population density, terrain ruggedness, urban populations, total population. Percentage differences from comparator country averages are based on a simple unweighted average of multiple measures for each outcome. Further information on these comparisons is available in a supporting technical report.* [106]

- After being one of the lowest spending countries from 1980-1995, New Zealand's investment in water is now among the highest in the OECD, and much higher than most of our comparator countries.
- Relative to comparator countries, New Zealand's water network is similarly sized in terms of length but has fewer connections. Despite relatively low connections, New Zealand uses 253 cubic meters of drinking water per capita annually, considerably higher than all comparator countries.
- While parts of our water network have high leakage rates, average national leakage rates are similar to the comparator country average.
- The Commission also publishes performance dashboards that can be used to understand changes in the performance of New Zealand's water sector over time. [107]

7.3.6. Forward guidance for capital investment demand

Water and waste	2025–2035	2035–2045	2045–2055	2010–2022 historical average
Average annual spending (2023 NZD)	**$1.8 billion**	**$2.2 billion**	**$2.6 billion**	**$1.7 billion**
Percent of GDP	**0.4%**	**0.4%**	**0.4%**	**0.6%**

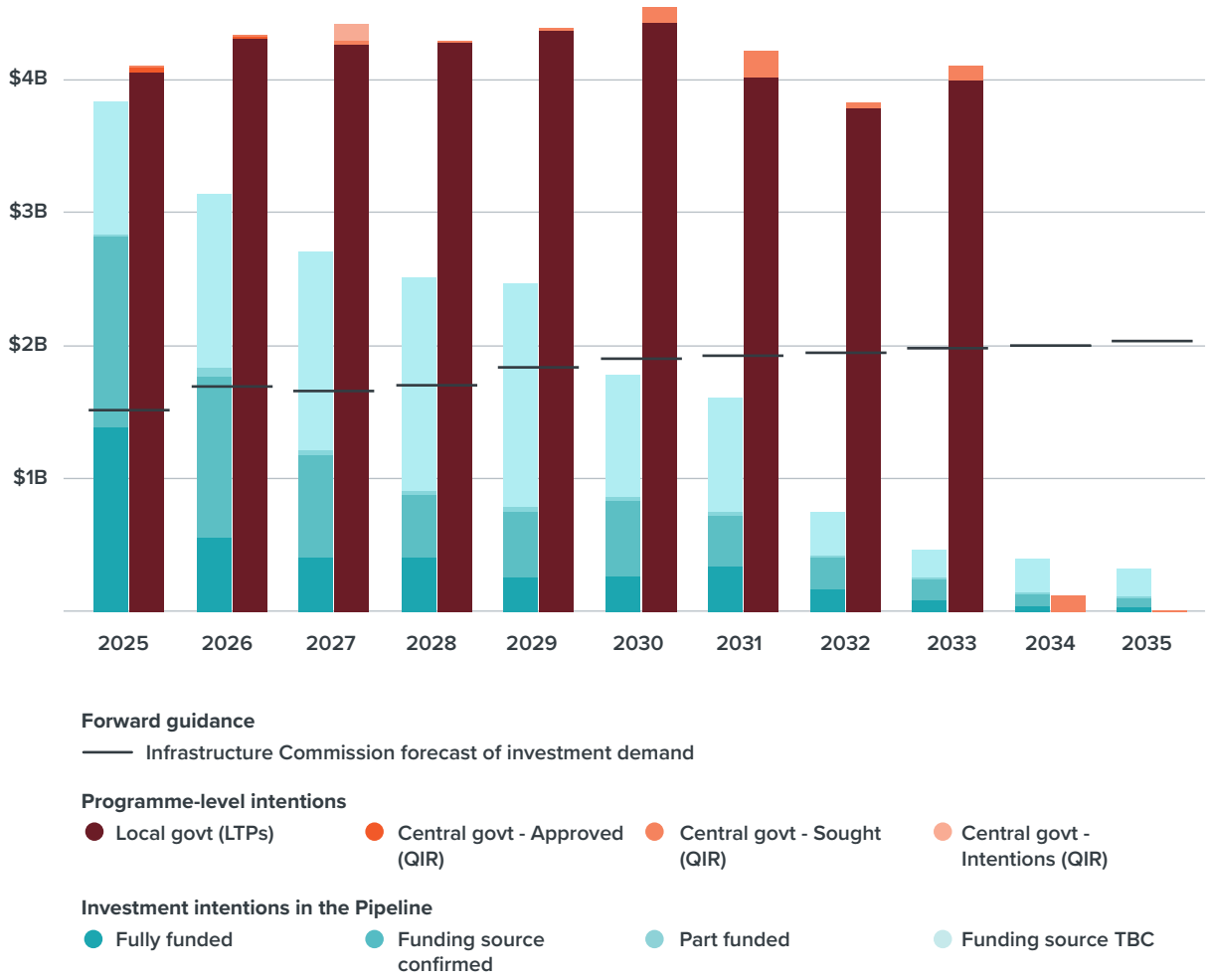
This table provides further detail on forward guidance summarised in Section 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report. [108]

- Investment in water and waste infrastructure in New Zealand has been elevated (and nearly the highest in the world) as a share of GDP for the last 20 years, following a period of clear underinvestment from 1975 to 2000.
- In part, current investment levels are explained by backlogged renewal requirements, but this is unlikely to fully explain high investment. Other factors, such as rising quality standards, appear to play an important role.
- Going forward, renewal and replacement of existing infrastructure is expected to be the largest driver of investments. At a national level, slowing population and income growth is expected to flow through to declining demand for network expansions and improvement, although localised population will continue to drive high demand in some areas.
- Adapting to natural hazard risk is a growing investment driver for water networks. Flood control

and stormwater infrastructure, including nature-based solutions, is likely to face challenges due to increasing extreme weather events.

7.3.7. Current investment intentions

- Water investment has risen in recent years. It is expected to remain high, based on infrastructure providers' project intentions and programme-level investment intentions.
- The following chart shows that projected spending to deliver initiatives in planning and delivery in the Pipeline (blue bars) and programme-level intentions in local government Long Term Plans and central government's reporting to the Treasury's Investment Management System (red and orange bars) are significantly higher than the Commission's investment demand outlook (black lines) over the 2025–2035 period.
- We note, however, that councils often do not deliver the full level of investment stated in their LTPs. We have indicated the level on the chart where 80% of planned investment reaches.



This chart compares two different measures of future investment intentions with the Commission's forward guidance on investment demand. The blue bars show project-level investment intentions from the National Infrastructure Plan, distinguishing based on funding status. The red and orange bars show an alternative measure of investment intentions based on programme-level data from local government Long Term Plans and central government's reporting to the Treasury's Investment Management System, again distinguishing by funding status. The black lines show the Commission's forward guidance on investment demand.

7.3.8. Key issues and opportunities

- **Pricing:** There is an opportunity to better signal investment choices and usage. Volumetric water charging could be used to manage demand and reduce the need to construct new infrastructure to address growing water use.
- **Governance and oversight:** Economic regulation of drinking and wastewater services is an opportunity for the sector to ensure full-cost recovery, efficient investment programmes, and good asset management. It is also an opportunity to increase transparency on asset conditions and delivery performance.
- **Coordination:** The establishment of regional water service providers or council-controlled organisations for water, along with effective economic regulation, could enable a more effective response to investment needs.
- **Regulatory and policy certainty:** Changes in the direction of water reforms in recent years have influenced council water investment plans. Providing consistent policy and regulatory certainty will be key to enabling the transition to more efficient investment and delivery of water services.

7.4. Electricity and gas

7.4. Te hiko me te haurehu

7.4.1. Institutional structure

Service delivery responsibilities

- This sector includes electricity transmission, distribution, generation and retail, and 'downstream' gas transmission, distribution and retail. However, it excludes liquid fuels (e.g. petrol and diesel) and 'upstream' gas production and processing activities.
- Electricity infrastructure and services are provided by commercial entities, some of which are fully or partly owned by central or local government. Government is the majority shareholder of three generation companies (Genesis, Meridian, and Mercury) and the transmission provider (Transpower). There is a mix of private and local trust ownership of the distribution companies. There are a number of electricity retail companies, some of which also generate electricity.
- Gas infrastructure and services are provided by commercial entities. Gas transmission and distribution companies operate as regulated monopolies. There are several gas retail companies.

Governance and oversight

- The Electricity Authority oversees and regulates the electricity sector, including the electricity wholesale and retail markets. The Commerce Commission regulates electricity and gas networks, including electricity distribution businesses, gas pipeline businesses and Transpower, and investigates potential breaches of competition law.
- Competition exists at the retail level, with four major retailers and over 30 smaller businesses selling electricity to consumers.
- The 'downstream' gas sector is co-regulated by the Ministry of Business, Innovation and Employment (MBIE) and the Gas Industry Company.
- MBIE provides policy stewardship for both the electricity and gas sectors.

7.4.2. Paying for investment

- Electricity services are customer-funded. All costs of generating, transmitting, distributing and retailing electricity (along with the cost of purchasing carbon emissions units through the Emissions Trading Scheme) are passed through to customers based on the volumes bought, sold and used.
- Electricity generators sell into a competitive wholesale market or direct to industrial customers through power purchase agreements. Locational marginal pricing in the wholesale market helps signal opportunities for investment in additional capacity.
- Gas sales are agreed through long-term commercial contracts and a wholesale market.
- Direct central government financial support for electricity and gas infrastructure is rare but financial support, such as the Winter Energy Payment, is available for some households.

7.4.3. Historical investment drivers

- Investment in electricity networks peaked from the 1950s through 1980s, as New Zealand added significant capacity to the network. Investment responded to technological innovation requiring more electricity usage, industrialisation, and population growth.
- In recent decades, growth in demand for electricity investment has been relatively subdued. Gas supply and demand have declined, due to slowly depleting gas reserves and declining investment.
- Investment to meet demand growth for electricity and gas is driven by factors like population growth, shifting technologies around energy usage (such as electric vehicles) and commercial/industrial usage.

- In electricity, other investment occurs to meet peak demand or provide resilience against outages, but also to ensure consistent supply and prices.
- New Zealand's legislated net-zero carbon emission goals and broader energy market policy settings impact both gas and electricity investment.

7.4.4. Community perceptions and expectations

- In general, New Zealanders' expectations for the reliability of electricity seem to be well met.
- However, there is a general perception that the prices users pay are higher than the costs to supply.
- New Zealanders are increasingly concerned about the electricity sector's ability to ensure electricity supply will be sufficient in the future.
- Most New Zealanders support electricity charges that are based on usage.

7.4.5. Current state of network

New Zealand's difference from comparator country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Electricity	**-3%**	**+23%**	**-46%**	**-12%**

Comparator countries: *Columbia, Costa Rica, Chile, Canada, Finland, Iceland, Norway, Sweden. Similarity based on: Income, population density, terrain ruggedness, urban populations, energy exports, heavy industry share of GDP. Percentage differences from comparator country averages are based on a simple unweighted average of multiple measures for each outcome. Further information on these comparisons is available in a supporting technical report.* [109]

- Our electricity networks are somewhat unique relative to other countries. We have a comparatively large transmission network, reflecting long distances between our generation and usage, and no grid interconnections with other countries.
- Investment levels are about average compared to our peers.
- Outages in New Zealand appear to be more frequent in number and duration than peer countries and are among the highest in the OECD. However, electricity generation in New Zealand produces very low emissions relative to the OECD average and comparator countries.
- The Commission also publishes performance dashboards that can be used to understand changes in the performance of New Zealand's energy sector over time. [110]

7.4.6. Forward guidance for capital investment demand

Electricity and gas	2025-2035	2035-2045	2045-2055	2010-2022 historical average
Average annual spending (2023 NZD)	**$7.3 billion**	**$8.0 billion**	**$9.4 billion**	**$2.4 billion**
Percent of GDP	**1.7%**	**1.6%**	**1.6%**	**0.8%**

This table provides further detail on forward guidance summarised in Section 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report. [111]

- Meeting our legislated net-zero carbon emissions goals will require a meaningful uplift in electricity investment over the next 30 years. This will include a need for new electricity generation, transmission, distribution, and 'firming' generation to supplement variable renewables like wind and solar.
- Over the 30-year period, based on Climate Change Commission scenarios, we estimate that this will require approximately $24 billion worth of capital investment above baseline demand driven by population and income growth, or just over $700 million a year on average. Most of this investment (90%) will be in new generation, and the remaining will be in the transmission and distribution network.
- Most of this investment is front-loaded in the next 10 to 15 years; however, we will also have to account for added renewal spending in the second half of the forecast period.
- Without decarbonisation-related investment, we expect that investment in electricity networks will largely track the more subdued investment trends of the past 20 years. This is because other demand drivers such as population and economic growth are expected to be relatively modest, although resilience investment is likely to be an increasing focus.

7.4.7. Current investment intentions

- Electricity and gas investment has been stable in recent years but current market information suggests that it may rise in future years. Realisation of increased investment will depend on market factors, including consumer demand for more electricity, as well as policy factors like the consenting environment.
- Investment intentions submitted to the Pipeline largely reflect distribution and transmission networks. As a result, the Commission has worked with the Electricity Authority to include a view of generation investment intentions from their augmented 2023 survey of generators (reflected in a 13 year span). We have excluded some speculative offshore wind investment in the mid-2030s from this analysis. We expect to provide updated information in the Final Plan.
- The following chart shows that projected spending to deliver initiatives in planning and delivery in the Pipeline (blue bars) and the Electricity Authority's generation investment intentions survey (purple bars) is expected to be significantly higher than the Commission's investment demand outlook (black lines) in the next few years, but lower beyond this.
- Current intentions in the Pipeline account for around 14% of the Commission's modelled investment demand over the next 10 years, while 2023 generation investment intentions from the Electricity Authority account for a further 48%. This indicates either a relatively short planning horizon for electricity investment, or uncertainty about future demand growth.

This chart compares two different measures of future investment intentions with the Commission's forward guidance on investment demand. The blue and violet bars show project-level investment intentions from the National Infrastructure Plan and the Electricity Authority's generation investment survey, distinguishing based on funding status. The orange bars show the small amount of energy-related investment intentions in central government's reporting to the Treasury's Investment Management System. The black lines show the Commission's forward guidance on investment demand.

7.4.8. Key issues and opportunities

- **Pricing:** The energy transition may require network investment ahead of demand to facilitate decarbonisation. Pricing approaches will need to consider investment risk and affordability for users during the transition period. Affordability and reliability of energy could in turn affect economic outcomes for energy-using industries and the pace at which households and businesses convert from fossil fuels to electricity.
- **Coordination:** Electricity is expected to play a major role in meeting our 2050 legislated emissions goals. Coordination between increased investment in generation, transmission distribution and distributed energy resources (for example, home solar and batteries) will be required.
- **Governance:** While economic regulation has worked well for transmission and distribution providers, perceptions among the public indicate low confidence in prices reflecting costs. Improving transparency around investment intentions may help improve this.
- **Efficient regulation:** Accommodating new generation, network expansion and distributed energy will require enabling resource management direction.
- **Policy certainty:** Policy uncertainty may continue to have an impact on future electricity demand. These include policies related to the Emissions Trading Scheme (ETS), the government's role in managing dry-year risk, and other complementary policies such as the former Clean Car Discount. Long-term decline in gas supply and demand will require gas distributors and users to adapt, which may mean adopting emerging technologies (e.g., hydrogen or biogas) or demand management options.

7.5. Telecommunications

7.5. Ngā whitimamao

7.5.1. Institutional structure

Service delivery responsibilities

- The telecommunications sector includes fixed-line telecommunications services (both voice and data services, provided by fibre broadband and a legacy copper telecommunications network), mobile telecommunications services (both voice and data services) and other services like satellite broadband.
- Fixed-line broadband infrastructure is monopolistic, but there are many retailers of fibre broadband services to the household.
- A wholesale/retail structural separation applies to Chorus's fibre broadband services and retail restrictions are placed on local fibre companies (LFCs). Other fixed-line broadband infrastructure, such as Hybrid Fibre Coaxial (HFC), is not subject to the same restrictions.
- Mobile services are competitive, with several firms offering services.

Governance and oversight

- The Commerce Commission regulates terms of access across a range of mobile, copper and fibre services, and collects information on service provision and pricing throughout the sector.
- Price regulation is restricted to fibre 'anchor' services (voice and broadband) and some legacy wholesale access pricing (copper and mobile termination rates).
- MBIE provides strategy and policy advice on communications markets and administers the telecommunication levies.

7.5.2. Paying for investment

- Telecommunications infrastructure is largely customer-funded. Overall costs of providing telecommunications services should be passed through to customers. However, central government has provided financing, and in some cases grant funding, for some infrastructure initiatives.
- Since 2010, the Government has invested around $2.6 billion in connectivity infrastructure, including $1.8 billion in loans to support the rollout of Ultra-Fast Broadband (UFB) and more than $770 million in grant funding for rural connectivity infrastructure in areas where services may not otherwise be commercially feasible to provide. It has also invested $1.4 billion in the Public Safety Network used by emergency services.
- Pricing arrangements include regulated revenue caps for monopoly segments of the market (set by the Commerce Commission), but other than this, providers have flexibility about pricing structures.

7.5.3. Historical investment drivers

- In recent decades, spending has been driven by the need to deploy new telecommunication technologies (mobile phones, internet) and respond to technology-driven increases in demand.
- Measured depreciation rates are high, reflecting the high rate of technological obsolescence in the sector. Legacy assets tend to be replaced with new technologies rather than renewed on a like-for-like basis.

7.5.4. Community perceptions and expectations

- In general, telecommunications services in New Zealand appear to be meeting New Zealanders' expectations, especially in urban areas and where there is fibre connectivity. Rural areas still experience service challenges such as mobile black spots and broadband congestion. Satellite services are filling some of these gaps.
- Most New Zealanders rate the quality of services as good, and few see telecommunications infrastructure as an investment priority.

7.5.5. Current state of network

New Zealand's difference from comparator country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Telecommunications	+28%	-12%	+3%	-4%

Comparator countries: *Columbia, Costa Rica, Chile, Canada, Finland, Sweden, Norway, Iceland. Similarity based on: Income, population density, terrain ruggedness, total population, urban population. Percentage differences from comparator country averages are based on a simple unweighted average of multiple measures for each outcome. Further information on these comparisons is available in a supporting technical report.* [112]

- Over the past 10 years, New Zealand has spent a larger share of GDP on telecommunications infrastructure than most comparator countries.
- New Zealand's fixed broadband network is comparable to our comparator countries in terms of network coverage, subscriptions, and quality (connection speeds).
- New Zealand's uptake of mobile subscriptions is comparable to similar countries, and 4G mobile broadband coverage is similar to comparator countries, albeit at the lower end of the range. However, only 14% of population is covered by 5G mobile networks, which is nearly the lowest in the OECD and well below other comparator countries. New Zealanders also use a very low amount of mobile data compared to our peers, although mobile data usage is growing rapidly.
- The Commission also publishes performance dashboards that can be used to understand changes in the performance of New Zealand's telecommunications sector over time. [113]

7.5.6. Forward guidance for capital investment demand

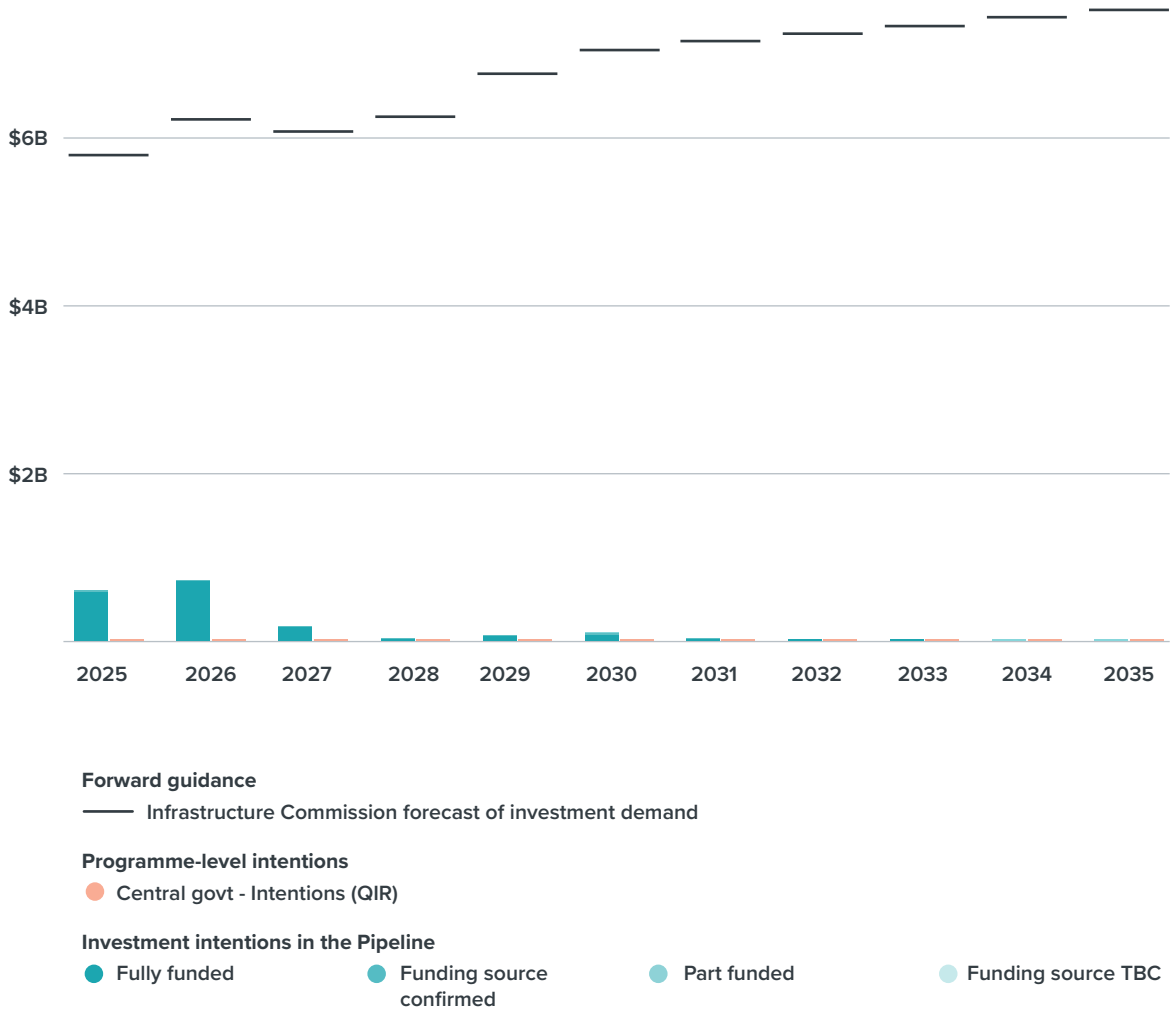
Telecommunications	2025-2035	2035-2045	2045-2055	2010-2022 historical average
Average annual spending (2023 NZD)	$3.3 billion	$4.0 billion	$4.7 billion	$2.1 billion
Percent of GDP	0.8%	0.8%	0.8%	0.7%

This table provides further detail on forward guidance summarised in Section 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report. [114] *Our analysis for the telecommunication sector includes investment in all fixed assets to service the sector. This includes assets such as fibre cables and towers but also includes data processing and storage facilities. Underlying data is drawn from Statistics New Zealand National Accounts data on asset values.*

- The telecommunications sector is characterised by technological innovations leading to rapid deployments of new networks and retirements of existing technologies. This rapid technological progress makes forecasting investment demand challenging.
- Innovations in artificial intelligence and mobile phone technologies suggest that technology will continue to drive elevated investment in the sector.
- The sector has been in an investment boom since the 1980s, although peak levels of investment occurred in the 1990s and early 2000s. High depreciation rates in telecommunications suggests that renewal or replacement of the existing network will continue to drive investment after this period of high investment.

7.5.7. Current investment intentions

- The Pipeline's information on the telecommunications investment underrepresents the investment occurring in the sector. Private sector providers are encouraged to contribute information on their initiatives in planning and delivery. Based upon information from Statistics New Zealand, this figure could be between $2 and $3 billion per year.
- The following chart shows that projected spending to deliver initiatives in planning and delivery in the Pipeline (blue bars) are significantly below than the Commission's investment demand outlook (black lines) over the 2025–2035 period. This is due to limited contributions by the commercial entities responsible for telecommunications investment.
- The Commission's investment outlook, which is based upon Statistics New Zealand capital investment data, suggests slowly rising investment demand.



This chart compares two different measures of future investment intentions with the Commission's forward guidance on investment demand. The blue bars show project-level investment intentions from the National Infrastructure Plan. The orange bars show the small amount of investment intentions in central government's reporting to the Treasury's Investment Management System. The black lines show the Commission's forward guidance on investment demand.

7.5.8. Key issues and opportunities

- **Rural telecommunications access:** 13% of homes are not connected to fibre broadband. With the eventual withdrawal of Chorus' rural copper network, a mix of fibre, wireless, and satellite technologies will be needed to provide modern telecommunications services to customers not currently served by the fibre network.
- **Governance and regulation:** OECD surveys into regulation in the sector have highlighted potential gaps related to competition in the sector, scope of regulation (only Chorus is price/quality regulated, while LFCs are subject to information disclosure), and the potential for government decisions to directly impact the Commerce Commission.
- **Transparency and information:** There are some publicly available or centralised sources of information on the condition of telecommunications assets. Chorus and LFCs produce reasonably thorough asset age and health information (although short of full asset management plans like electricity and gas) and these are public. Mobile and other network assets are more unknown. There is also comparatively little research on the vulnerability of New Zealand's telecommunication assets to natural hazard risk.

7.6. Education

7.6. Te Mātauranga

7.6.1. Institutional structure

Service delivery responsibilities

- The education sector includes primary and secondary education and tertiary education. It also includes early childhood education, which we discuss but do not include in our analysis of investment demands.
- The Ministry of Education (MoE) owns buildings and land for state schools and kura. School Boards are responsible for day-to-day maintenance and management of their property, with support from MoE regional offices.
- State-integrated and private schools own or lease their land and buildings independently. A small number of schools are currently designated as charter schools. These are publicly funded and operated by a sponsoring organisation (rather than a traditional school Board). The Charter School Agency has oversight of these schools.
- Tertiary education institutions include universities, polytechnics, and wānanga, which are Crown entities, and some private training establishments. These entities own their property and are responsible for meeting their own investment requirements with occasional exceptions.
- Early childhood education services are mainly provided by community-based or commercial entities, with the exception of kindergartens which are run by central government.

Governance and oversight

- MoE oversees primary and secondary school education policy and legislation. Its role in infrastructure provision focuses on operational planning, funding allocation and investment, and major capital works or redevelopment projects. It sets performance frameworks for School Boards, which are responsible for maintaining school property.
- MoE also oversees policy and legislation for tertiary education. The Tertiary Education Commission has an oversight role over tertiary education providers.
- Early learning services must be licensed or certified by MoE.

7.6.2. Paying for investment

- Schools are funded through general taxation with varying degrees of private/household co-funding.
- School Boards prepare a 10-year property plan of priorities, which MoE uses to provide support and funding to ensure buildings and facilities are adequate. MoE supports school Boards to develop their plans.
- School Boards can also seek MoE consent to construct new assets using their own funds. Ongoing responsibilities for operating and maintaining those assets remain with the Board.
- Tertiary institutions are funded through a mix of government funding, student fees and philanthropy. They may sell land with the consent of the Secretary for Education, or through the Crown asset transfer and disposal policy.
- A large share of the cost of early childhood education and care (ECE) is passed through to customers. MoE offers subsidies for ECE which are issued directly to providers, the proceeds of which may be used for infrastructure by the provider.

7.6.3. Historical investment drivers

- Investment in new education infrastructure has historically been driven primarily by population growth and demographic change. Investment demand for primary and secondary schools is highly localised.

- Between the 1950s and 1970s, the number of primary and secondary school students approximately doubled. This led to more than 300 additional schools being built. As student volumes declined in later decades, so did the number of total schools, although not in proportion to the decline in student volumes.
- Significant growth in tertiary student numbers led to significant investment in tertiary education throughout the 1990s and 2000s.
- During periods of slower school rolls growth, investment is more focused on managing maintenance and renewal needs to match demand. Investment has also responded to unplanned renewal needs, such as weathertightness remediation for many school buildings built or modified between 1994 and 2005, and recovery after natural hazard events like the Canterbury earthquakes.

7.6.4. Community perceptions and expectations

- Ageing schools are the third most important infrastructure priority, according to a Te Waihanga survey of over 23,000 New Zealanders.
- Education services in general are very important to New Zealanders, consistently ranking in the top 10 issues.
- Education services are the NZ public's second highest priority for increased government spending, after healthcare services. However, it's unclear whether this relates specifically to school infrastructure as opposed to the overall education system.

7.6.5. Current state of network

New Zealand's difference from comparator country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Education	**+1%**	**-10%**	**+6%**	**+4%**

Comparator countries: *Australia, Chile, Finland, Iceland, Ireland, Norway, USA. Similarity based on: Income, population density, population share aged 5-17, population growth since 1960, exposure to natural hazards, compulsory education ending age. Percentage differences from comparator country averages are based on a simple unweighted average of multiple measures for each outcome. Further information on these comparisons is available in a supporting technical report.* [115]

- New Zealand's spending on education infrastructure, as a share of GDP, is slightly higher than the average comparator country. On a per-student basis, we spend approximately the average.
- The average New Zealand primary and secondary school has 358 students, slightly above the OECD average and near the average comparator countries.
- The overall quality of school infrastructure does not appear to be affecting the quality of education in New Zealand relative to other countries. The share of school principals reporting a lack of, or poor quality, infrastructure affecting students' education is low in New Zealand, in line with comparator countries. However, a recent Ministerial Inquiry into School Property found many school buildings were undermaintained and there was a lack of transparency around investment decisions and prioritisation.

7.6.6. Forward guidance for capital investment demand

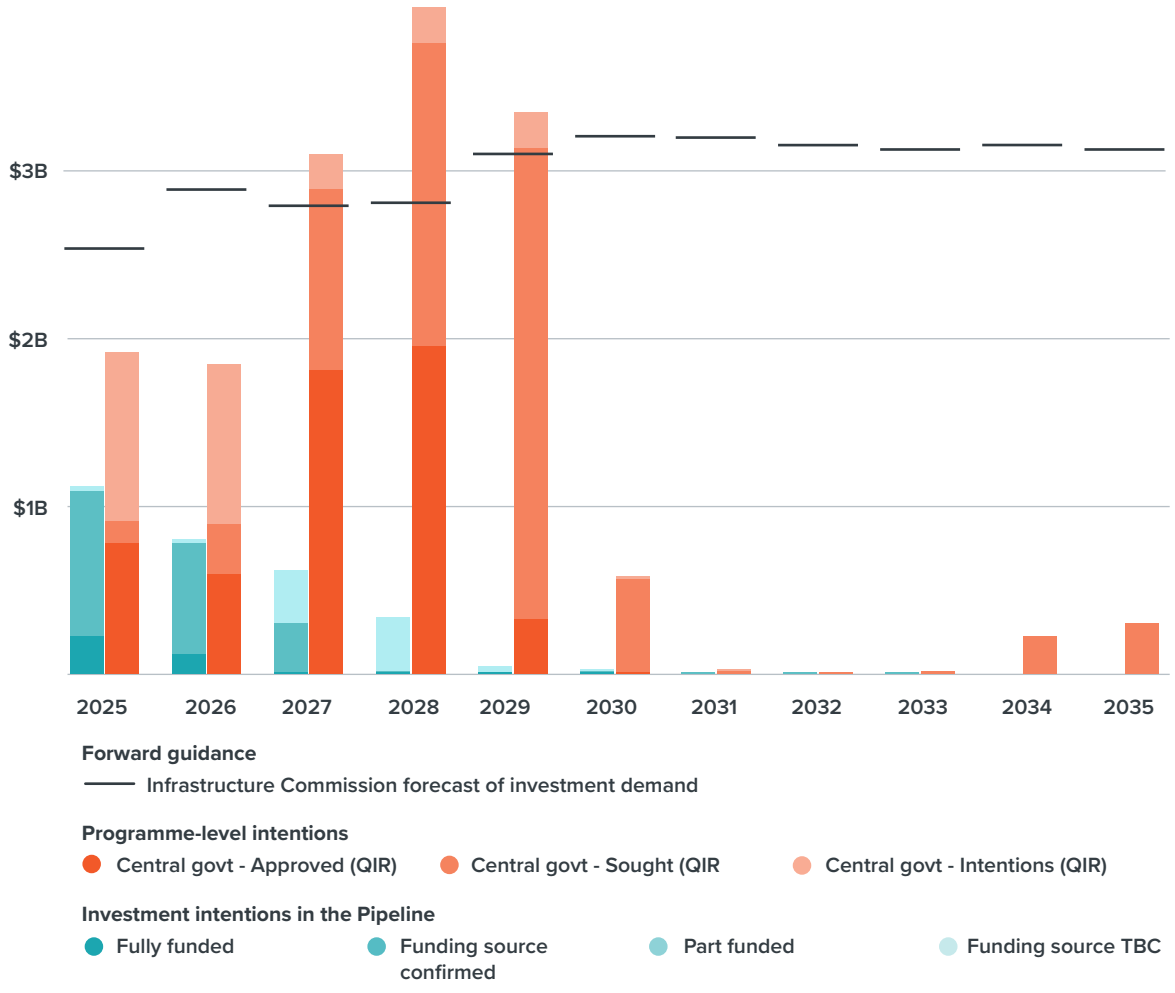
Education	2025-2035	2035-2045	2045-2055	2010-2022 historical average
Average annual spending (2023 NZD)	**$2.9 billion**	**$3.3 billion**	**$3.8 billion**	**$3.0 billion**
Percent of GDP	**0.7%**	**0.7%**	**0.7%**	**1.0%**

This table provides further detail on forward guidance summarised in Section 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report. [116]

- We expect overall education infrastructure investment to increase in dollar terms, but decline as a share of GDP relative to recent years. The primary reason for this is the ageing of our population, which means less demand for school infrastructure overall.
- Demographic trends will raise challenges for the sector about how to optimise renewals and maintenance to meet needs. Many schools built in the 1970s will require renewal, but some will need to be right-sized to meet demographic trends.
- Future demand for schools will increasingly be driven by localised demographic pressures. Māori school-age populations are expected to grow significantly in most regions, while non-Māori school-age populations are expected to decline in most regions. This may increase the relative demand for schools with Māori immersion settings.

7.6.7. Current investment intentions

- Education infrastructure investment has risen in recent years, but the ongoing outlook is less clear.
- The following chart shows that projected spending to deliver initiatives in planning and delivery in the Pipeline (blue bars) and programme-level intentions in central government's reporting to the Treasury's Investment Management System (orange bars) are similar to the Commission's investment demand outlook (black lines) in the late 2020s but decline after that point.
- Education infrastructure appears to have short-term planning horizons, especially for specific projects. This reflects the fact that projects are often small in scale, requiring shorter lead-times to implement. Over the next decade, specific initiatives in the Pipeline are equal to 9% of the Commission's forward guidance on future investment demand.



This chart compares two different measures of future investment intentions with the Commission's forward guidance on investment demand. The blue bars show project-level investment intentions from the National Infrastructure Plan. The orange bars show the small amount of investment intentions in central government's reporting to the Treasury's Investment Management System. The black lines show the Commission's forward guidance on investment demand.

This chart compares two different measures of future investment intentions with the Commission's forward guidance on investment demand. The blue bars show project-level investment intentions from the National Infrastructure Plan, distinguishing based on funding status. The orange bars show an alternative measure of investment intentions based on central government's reporting to the Treasury's Investment Management System, again distinguishing by funding status. The black lines show the Commission's forward guidance on investment demand.

7.6.8. Key issues and opportunities

- **Asset management and investment planning:** A key challenge for the sector is to manage uneven and changing geographic demand for education infrastructure alongside maintaining and renewing existing assets. Making the most efficient use of existing assets will enable funds to be freed up to address concentrated areas of demand.
- **Demographic change:** Areas with high Māori populations are likely to see higher demand for new school infrastructure. While the number of non-Māori student-aged children is expected to decline over the next 20 years, numbers of Māori students are expected to grow by almost 40%. This could provide opportunities to ensure future infrastructure investments in schools and kura with Māori immersion programmes are well-aligned to changing demands.

7.7. Hospitals

7.7. Ngā Hōhipera

7.7.1. Institutional structure

Service delivery responsibilities

- The hospital sector includes both public and private hospitals. In addition, the broader healthcare sector includes primary healthcare services (such as general practitioners) and secondary healthcare services (such as community health providers and specialist services), which are not included in our infrastructure demand analysis.
- New Zealand has recently adopted a model with a single centralised Crown entity (Health New Zealand) that provides public hospital services. Public hospital assets are owned, funded, and managed through the single entity structure.
- In addition, private hospitals are operated by various commercial entities.

Governance and oversight

- The Ministry of Health monitors the performance of Health New Zealand. It is responsible for health policy and planning.
- Oversight tends to operate via budget and performance targets to improve productivity and cost efficiencies.

7.7.2. Paying for investment

Public funding

- The New Zealand government funds around 80% of the cost of health and disability services through taxation. Other costs are met by users. This means that eligible residents can access a wide range of services, including inpatient and outpatient care, mental health services, and long-term care, often free or at a low cost.
- The New Zealand government sets an annual budget for health spending, with Health New Zealand then allocating funding to various services. The central government owned Accident Compensation Corporation (ACC) funds healthcare for accident recovery through an insurance model.
- While most healthcare is publicly funded, a private healthcare system including private hospitals, specialist clinics, and private insurance options exists in parallel. Some healthcare services are also funded by voluntary organisations and private donations, supplementing public funding.

7.7.3. Historical investment drivers

- Investment in health infrastructure is driven by population and demographics, income and standards growth, and changes in medical technologies and clinical services delivery methods.
- Investment in health infrastructure as a share of GDP peaked in the period between 1960 and 1980. At first, much of this investment was likely in response to population growth, as hospital capacity increased markedly over the period. Over time, expenditure appeared to shift towards improving the quality of existing facilities, which may be a response to medical innovations.
- Health infrastructure is part of a system of inputs, along with doctors, nurses, medications, and delivery systems, that lead to better health outcomes. Often, hospital capacity and operational spending is needed to deliver health services, but at times other spending can substitute for hospital capacity. For instance, more emphasis on primary care may reduce the need for hospitals.

7.7.4. Community perceptions and expectations

- The health system (healthcare and health infrastructure) is a consistent concern and enduring top priority for New Zealanders, across a range of surveys and over time.
- While overall, New Zealanders would prefer to spend more efficiently, rather than more, on public services and infrastructure, health is perhaps the main exception. Most New Zealanders support spending more to improve health services.

- While most surveys do not speak to the relative importance of healthcare services versus infrastructure, ageing hospital infrastructure was identified as a priority concern in one recent survey.

7.7.5. Current state of network

New Zealand's difference from comparator country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Health	**-24%**	**-10%**	**-2%**	**-13%**

Comparator countries: *Australia, Denmark, Iceland, Norway, Sweden, United Kingdom. Similarity based on: Income, population aged 4 and below, and 65 and above, urban population, public coverage of core set of services. Percentage differences from comparator country averages are based on a simple unweighted average of multiple measures for each outcome. Further information on these comparisons is available in a supporting technical report.* [117]

- Our benchmarking analysis focused largely on health infrastructure measures, rather than overall health system measures. Across most metrics we gathered, New Zealand falls towards the lower end of its comparator countries.
- New Zealand's infrastructure spending per capita is below average relative to comparator countries.
- New Zealand has a relatively low number of hospital beds, although this may reflect how countries deliver healthcare. We also appear to have comparatively low amounts of some medical equipment, like PET scanners or gamma cameras.
- There is some evidence of deteriorating quality of assets. While building envelopes of hospitals are mostly in good to average condition, sitewide infrastructure is in poorer condition, and the average age of hospitals is high compared to the United Kingdom (which was the only comparator country which had comparable hospital age data).

7.7.6. Forward guidance for capital investment demand

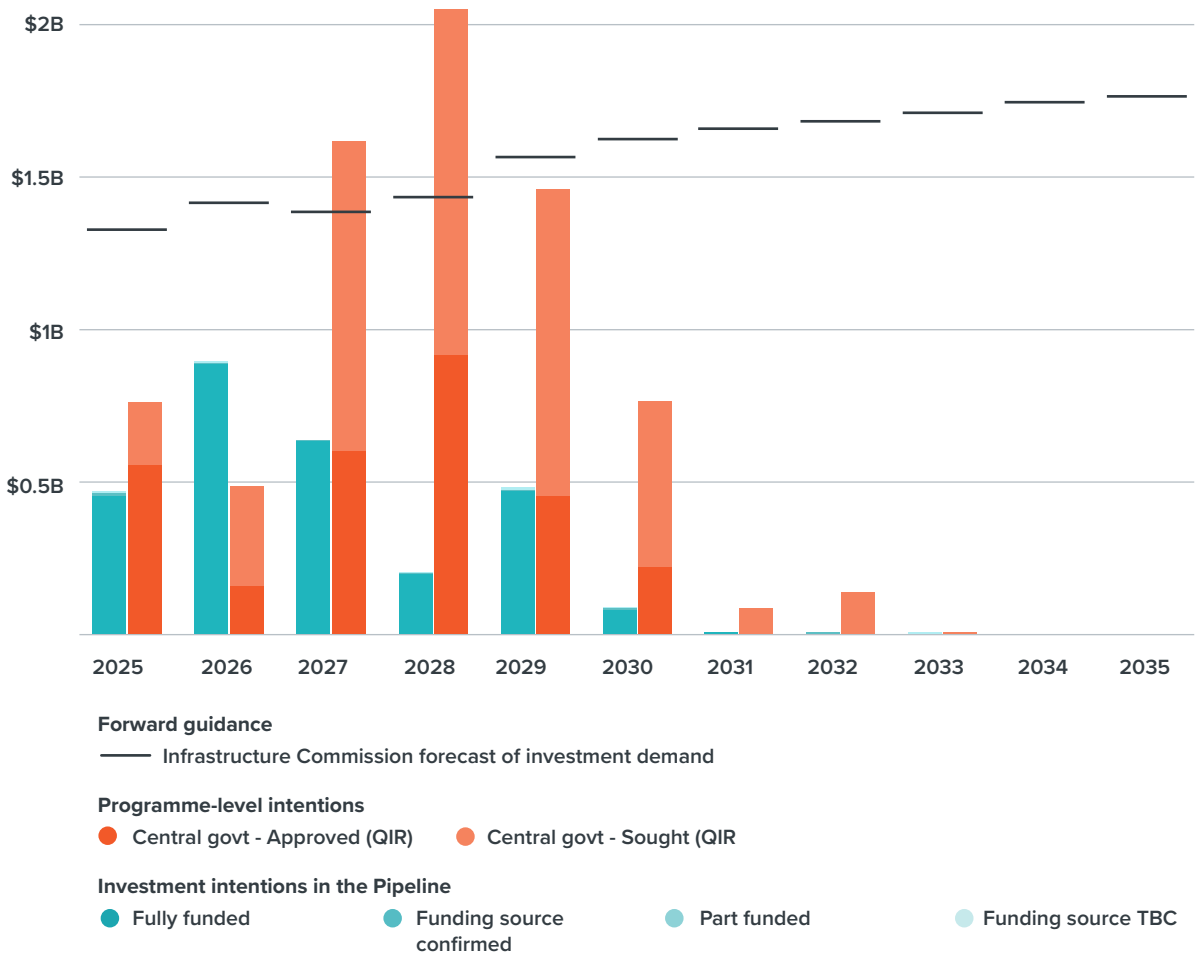
Hospitals	2025-2035	2035-2045	2045-2055	2010-2022 historical average
Average annual spending (2023 NZD)	**$1.5 billion**	**$1.9 billion**	**$2.1 billion**	**$0.8 billion**
Percent of GDP	**0.4%**	**0.4%**	**0.4%**	**0.2%**

This table provides further detail on forward guidance summarised in Section 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report. [118] *Our investment outlook is primarily focused on hospital infrastructure and fixed assets therein, rather than other infrastructure such as general practitioner offices or community health centres.*

- We anticipate a significant uplift in investment to meet growing needs of an ageing population. Barring a change to the delivery of healthcare or major medical innovations, population ageing is expected to put upward pressure on hospital demand.
- Renewals of existing stock built during the boom period will also contribute to rising investment requirements over the next 20 years.
- There is also a need to increase investment to catch up from low levels of investment from the 1990s to the 2010s.

7.7.7. Current investment intentions

- Investment intentions for health infrastructure are based on information available as of 31 March 2025. No information on long-term intentions was submitted to the Treasury in June 2024. Subsequently, Health New Zealand released their Health Infrastructure Plan in April 2025 indicating a need for $20 billion investment in health infrastructure over 10 years.
- The following chart shows that projected spending to deliver initiatives in planning and delivery in the Pipeline (blue bars) and programme-level intentions in central government's reporting to the Treasury's Investment Management System (orange bars) are lower than the Commission's investment demand outlook (black lines) over the 2025–2035 period.
- Information in the Pipeline appears focused on fully funded initiatives and does not indicate work in planning. These initiatives account for only 17% of expected investment demand over the period.



This chart compares two different measures of future investment intentions with the Commission's forward guidance on investment demand. The blue bars show project-level investment intentions from the National Infrastructure Plan, distinguishing based on funding status. The orange bars show an alternative measure of investment intentions based on central government's reporting to the Treasury's Investment Management System, again distinguishing by funding status. The black lines show the Commission's forward guidance on investment demand.

7.7.8. Key issues and opportunities

- **Asset management and investment planning:** As the main funder and provider for health, central government has an opportunity to improve the quality of asset management in the sector. This will be critical as needs in the sector grow. Procurement and financing options that embed asset management (like PPPs or structured leases) may be an opportunity to improve asset management for new hospitals.
- **Coordination:** Given the growing needs in the sector, there is a requirement for investment plans initiated by Health New Zealand to be connected to wider Budget processes managed by the Treasury.
- **Project appraisal:** As many hospitals prepare for renewal, ensuring their replacements are right-sized and not overdesigned will help to manage pressure on funding availability.
- **Efficient regulation and funding:** Medical innovation introduces considerable uncertainty in health investment. Historically, these innovations have reduced the need for health infrastructure (such as breakthrough medications), but also increased them (scanning machines). Regulation and funding needs to be able to adapt.
- **Equity:** Access to equitable health services is a top priority for New Zealanders, yet there are inequities in accessing health infrastructure between different locations and for different groups.

7.8. Public administration and safety

7.8. Ngā whakahaere me te haumaru tūmatanui

7.8.1. Institutional structure

Service delivery responsibilities

- The public administration and safety sector is a broad category that includes central and local government administration buildings, courthouses, prisons, and defence infrastructure.
- Central government provides justice and corrections services and supporting infrastructure. Service and infrastructure providers include the New Zealand Police (police buildings), Corrections (correctional facilities), and Ministry of Justice (courts).
- Central government also provides defence services and supporting infrastructure. Decisions are jointly made by the New Zealand Defence Force (NZDF) and Ministry of Defence. NZDF leads infrastructure and ICT delivery.
- Individual central government departments are responsible for procuring their administration buildings, with some centralised support, these are largely leased. For local government, this is the responsibility of the council, to the extent they own the buildings they use (as opposed to leasing office space).

Governance and oversight

- Relevant ministries are responsible for policy and planning. Oversight tends to operate via budget and performance targets to improve productivity and cost efficiencies.

7.8.2. Paying for investment

- Funding of central government administration buildings, justice buildings, corrections, emergency services and defence comes from general taxation. The Ministry of Justice collects minimal revenue from filing fees, largely used for operating expenditure.
- Funding for local government administration buildings is funded through rates.

7.8.3. Historical investment drivers

- Investment in public administration and safety infrastructure is driven by several different factors.
- Public administration buildings will have standard renewal requirements. They may also require investment to become more resilient to natural hazards or to bring them up to modern standards.
- Justice and Corrections infrastructure are tied to population-driven demands, as a larger population will require greater capacity to process criminals. Policy decisions around sentencing and managing of court backlogs influence perceived requirements for prison capacity.
- Defence investment is a function of foreign policy, geopolitical risks, and renewals of existing assets deemed important for New Zealand's defence capability. Defence capability also plays an important role in responses to natural hazard events.

7.8.4. Community perceptions and expectations

- It is difficult to separate the public's views on infrastructure aspects of public administration, safety, and defence relative to the services they provide.
- For instance, a 2016 survey showed that 62% of New Zealanders think we should spend more or much more on police and law enforcement. However, it's unclear whether this relates specifically to physical infrastructure as opposed to the overall law enforcement system.
- New Zealanders' views about whether to spend more or less on justice and defence infrastructure are mixed, and vary over time. This may make planning infrastructure investments, which require a degree of consistency in public agreement, challenging.
- For example, a 2025 survey showed that 50% of New Zealanders agreed we should spend more on defence. However, in a different 2016 survey, only 20% said we should spend more or much more on defence.

7.8.5. Current state of network

- Public administration and safety is a large and diverse sector. As of 2022, it was composed of over $30 billion worth of assets (excluding land). Some sectors within it are significant; defence and corrections infrastructure are worth over $9 billion and $4 billion respectively (both of which are bigger networks by value than the whole rail network).
- These networks include several different types of assets, including specialised buildings (courts, police stations, and prisons in justice; medical facilities, family housing, and barracks in defence estate), airport and port infrastructure (in the defence estate), land transport and water infrastructure (for both justice and defence), supporting telecommunications and ICT assets, and other specialised assets (e.g., weapons ranges).
- To date, no international benchmarking of public administration and safety networks has been completed, although this is identified as an area for future work. This is due to the lack of consistent international comparison data on infrastructure in this sector, but also because this sector includes different and distinct types of infrastructure (administration buildings, justice buildings, prisons, and defence infrastructure).

7.8.6. Forward guidance for capital investment demand

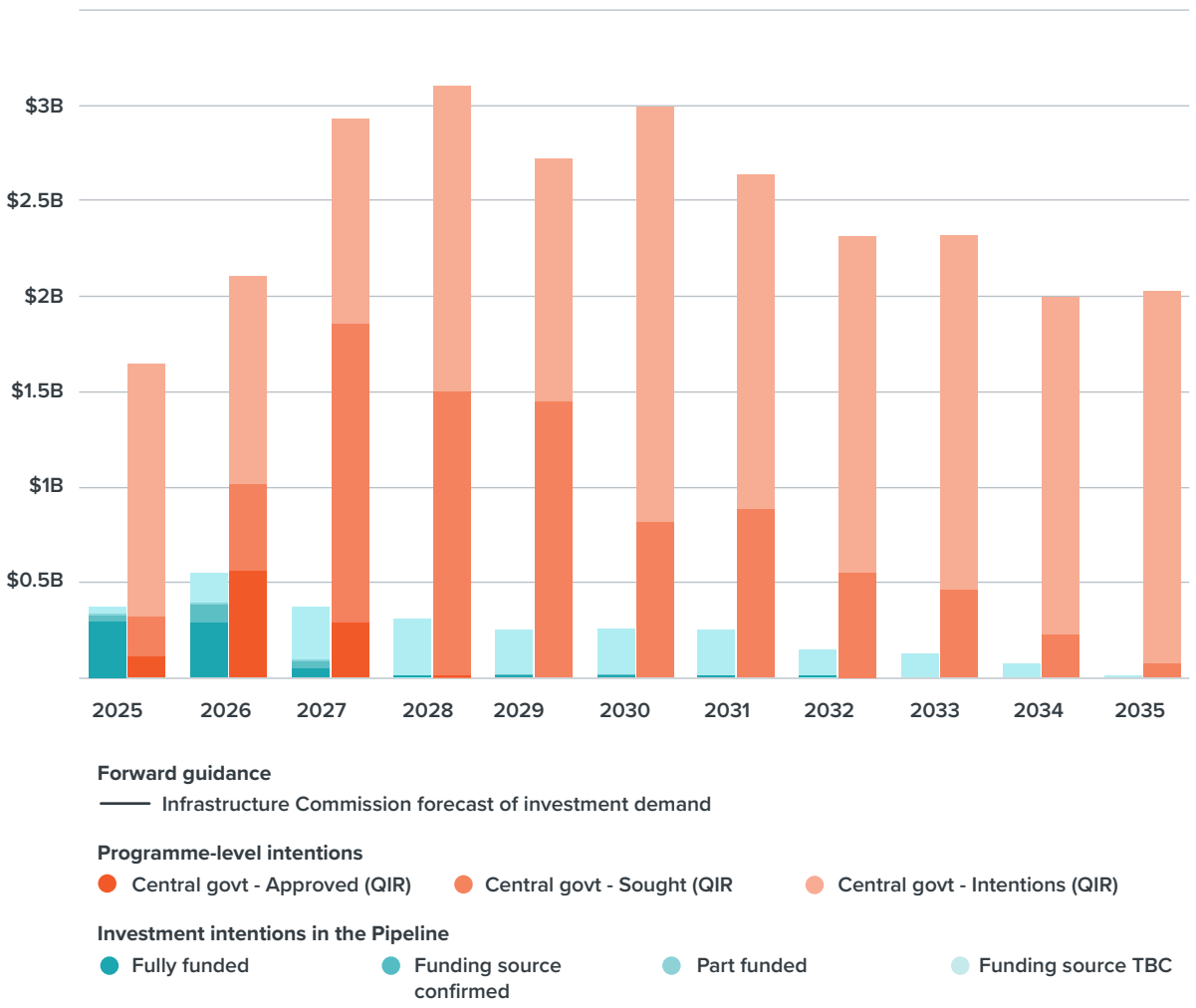
Public administration and safety	2025-2035	2035-2045	2045-2055	2010-2022 historical average
Average annual spending (2023 NZD)	**$3.3 billion**	**$3.8 billion**	**$4.3 billion**	**$2.8 billion**
Percent of GDP	**0.8%**	**0.8%**	**0.7%**	**0.2%**

This table provides further detail on forward guidance summarised in Section 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report. [119]

- Our outlook for this sector is largely stable, with investment levels settling at close to the long-term trend. However, demand for justice, corrections, and defence is hard to predict. Policy and geopolitical factors play an outsized role in determining investment needs. As such, our investment outlook for this sector is subject to considerable uncertainty.
- Over the next 10 to 20 years, we expect a rising focus on renewal and replacement of infrastructure built between the 1950s to the 2000s. There is a need for significant asset renewal and maintenance across justice infrastructure and defence estate, to maintain the condition of existing infrastructure and replace end-of-life assets.
- Demand for new infrastructure associated with population and income growth is expected to be relatively modest. The impact of policy and geopolitical factors is harder to forecast.

7.8.7. Current investment intentions

- We are currently working to align definitions of the sector within our Pipeline, the Treasury's Investment Intentions data, and our own investment outlook.
- Here, we present information for justice, corrections, and emergency services, but this excludes public administration buildings. We estimate that the value of these assets equates to roughly a third of total asset values within Public Administration and Safety.
- The following chart shows projected spending to deliver initiatives in planning and delivery in the Pipeline (blue bars) and programme-level intentions in central government's reporting to the Treasury's Investment Management System (orange bars) over the 2025–2035 period.
- Investment intentions and funding sought outweighs approved and funded projects.



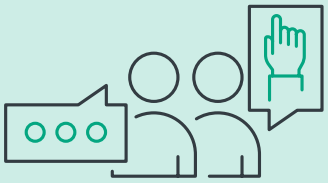
This chart compares two different measures of future investment intentions. The blue bars show project-level investment intentions from the National Infrastructure Plan, distinguishing based on funding status. The orange bars show an alternative measure of investment intentions based on programme-level data from central government's reporting to the Treasury's Investment Management System, again distinguishing by funding status. It does not show a comparison with the Commission's forward guidance on investment demand as work is ongoing to working to align data definitions.

7.8.8. Key issues and opportunities

- **Asset management:** According to the Commission's report 'Taking care of tomorrow today: Asset management state of play', defence asset management practices appear reasonably well-developed, while justice and public safety had more room for improvement. Development of long-term asset management and investment plans is a key opportunity for the sector.
- **Transparency and accountability:** Central government, as the funder and oversight role in this sector, has an opportunity to provide more transparency around its maintenance and renewal requirements.
- **Project appraisal and evaluation:** Central government evaluation of projects being submitted for budgetary funding could be improved.

8 We want to hear from you

Kei te hiahia mātau ki te rongo kōrero i a koe



The draft National Infrastructure Plan reflects our thinking on how the final Plan will look. It also incorporates feedback we've received over the past year, including through our 'Testing our thinking' discussion document published in 2024.

The draft Plan, however, is still a draft. We are keen to get your feedback, what have we got right or are there issues you think we've missed? Your feedback will help inform the final Plan.

You can share your views through our feedback form between 25 June and 5.00pm 6 August 2025.

LINK

Submissions will be published on our website after the closing date. The names and details of organisations that submit will be published, but all personal and commercially sensitive information will be removed.

We will deliver the final Plan to the Minister for Infrastructure in late 2025. Following delivery of the final National Infrastructure Plan, the Government is required to respond to the National Infrastructure Plan within 180 days, providing it to the House of Representatives.

End note

[1] Eddington, R. (2006). *The Eddington Transport Study. Main Report: Transport's Role in Sustaining the UK's Productivity and Competitiveness,* London: HMSO. Glaeser, E., & Poterba, J.M. (2021). Introduction to 'Economic Analysis and Infrastructure Investment'. Chicago, IL: University of Chicago Press.

[2] See, for example, The Treasury. (2025). Te Ara Mokopuna 2025 – Consultation on the draft content of the Treasury's Long-term Insights Briefing. Chapter 4. **https://www.treasury.govt.nz/sites/default/files/2025-04/te-ara-mokopuna-consultation-draft-content-ltib-2025.pdf**

[3] Glaeser, P & Poterba, J.M. (2021) *Introduction to 'Economic Analysis and Infrastructure Investment'.*

[4] Schedule 4A companies are established when the objectives sought (which could be a mixture of social and commercial objectives) might be best supported by joint ownership. The Crown may not own all shares at the start or it may wish to reduce its shareholding in future.

[5] A council-controlled organisation is at least 50% owned or controlled by a council.

[6] New Zealand Infrastructure Commission. (2024). *Build or maintain? New Zealand's infrastructure asset value, investment, and depreciation, 1990–2022.* **https://tewaihanga.govt.nz/our-work/research-insights/build-or-maintain**

[7] New Zealand Infrastructure Commission. (2025). *Invest or insure? Preparing infrastructure for natural hazards.* **https://tewaihanga.govt.nz/our-work/research-insights/invest-or-insure**

[8] Sapere. (2025). Commissioned by Insurance Australia Group New Zealand. *Natural hazards-related public spending in New Zealand.* **https://www.iag.co.nz/content/dam/corporate-iag/iag-nz/nz/en/documents/corporate/natural-hazards-public-spending-nz.pdf**

[9] Stats NZ. (2024). National population projections: 2022(base)–2073. **https://www.stats.govt.nz/information-releases/national-population-projections-2022base2073/** Note: These figures reflect the range from the 2.5th percentile to the 97.5th percentile of the projection range. On 4 June 2025 the National population projects: 2024(base)–2078 were published by Stats NZ and will be used to inform the final National Infrastructure Plan.

[10] Stats NZ. (2024). National population projections: 2022(base)–2073.

[11] The Treasury. 'Long-term fiscal model'. **https://www.treasury.govt.nz/publications/treasurys-stewardship-reports/long-term-fiscal-position/long-term-fiscal-model**

[12] Climate Change Commission, EB4 scenario.

[13] Ministry of Business, Innovation and Employment data.

[14] Stats NZ. Capital Goods Price index growth versus Consumer Price Inflation growth, 2000Q1 to 2025Q1.

[15] Beca Limited. (2024). Commissioned by Electricity Networks Aotearoa. *Report on findings: Assessment of costs of carrying out works in the road corridor for electricity distribution businesses.* **https://www.ena.org.nz/our-work/news/traffic-cones-are-increasing-the-price-of-power/document/1537**

[16] New Zealand Infrastructure Commission. (2024). *Build or maintain? New Zealand's infrastructure asset value, investment, and depreciation, 1990–2022.* Wellington: New Zealand Infrastructure Commission. **https://tewaihanga.govt.nz/our-work/research-insights/build-or-maintain**

[17] This includes network and social infrastructure and some other public capital investment. It excludes private housing investment, but includes infrastructure to support housing development and central and local government investment in social housing.

[18] City of Sydney. (December 2023). The city at a glance. **https://www.cityofsydney.nsw.gov.au/guides/city-at-a-glance**

[19] New Zealand Infrastructure Commission. (2022). *The lay of the land: Benchmarking New Zealand's infrastructure delivery costs.* **https://tewaihanga.govt.nz/our-work/research-insights/the-lay-of-the-land-benchmarking-new-zealand-infrastructure-delivery-costs**

[20] New Zealand Infrastructure Commission. (2024). *Taking care of tomorrow today: Asset management state of play.* **https://tewaihanga.govt.nz/our-work/research-insights/taking-care-of-tomorrow-today**

[21] New Zealand Infrastructure Commission. (2024). *Paying it forward: Understanding our long-term infrastructure needs.* **https://tewaihanga.govt.nz/our-work/research-insights/paying-it-forward-understanding-our-long-term-infrastructure-needs**

[22] New Zealand Infrastructure Commission. (2023). Protecting land for infrastructure: How to make good decisions when we aren't certain about the future. **https://tewaihanga.govt.nz/our-work/research-insights/protecting-land-for-infrastructure-how-to-make-good-decisions**

[23] Sapere. (2021). Commissioned by the New Zealand Infrastructure Commission. *The cost of consenting infrastructure projects in New Zealand.* **https://tewaihanga.govt.nz/our-work/research-insights/the-cost-of-consenting-infrastructure-projects-in-new-zealand**

[24] New Zealand Infrastructure Commission. (2023). *Who's working in infrastructure? A baseline report.* **https://tewaihanga.govt.nz/our-work/research-insights/who-s-working-in-infrastructure**

[25] New Zealand Infrastructure Commission. (2025). *Delivering better value and better outcomes: A discussion document on changing practices in infrastructure delivery.* **https://tewaihanga.govt.nz/our-work/research-insights/delivering-better-value-and-better-outcomes**

[26] New Zealand Infrastructure Commission. (2024). *Network infrastructure pricing study.* **https://tewaihanga.govt.nz/our-work/research-insights/network-infrastructure-pricing-study**

[27] Sense Partners. (2023). Commissioned by Business New Zealand. The future of workforce supply. https://businessnz.org.nz/wp-content/uploads/2023/03/updated-11am-The-future-of-workforce-supply-Sense-Partners-PDF.pdf

[28] The Treasury. (2024). *Productivity by the numbers 2013 to 2023.* https://www.treasury.govt.nz/publications/pcrp/productivity-numbers-2013-2023

[29] The Treasury. 'Long-term fiscal model'.

[30] S&P Global. (2025). 'Various rating actions taken on New Zealand councils on lower institutional framework assessment'. https://disclosure.spglobal.com/ratings/en/regulatory/article/-/view/type/HTML/id/3338977

[31] Ipsos & GIIA. (2024). Global Infrastructure Index (Global Summary). https://giia.net/sites/default/files/2024-10/Global%20Infrastructure%20Index%202024_2.pdf

[32] New Zealand Infrastructure Commission. (2024). *How is our infrastructure tracking? Monitoring progress against New Zealand's first Infrastructure Strategy.* https://media.umbraco.io/te-waihanga-30-year-strategy/evlebwwp/how-are-we-tracking-final.pdf

[33] 'Peer' countries vary between sectors, reflecting different factors that are relevant for different networks, but often include the Scandinavian countries, Canada, and Chile.

[34] New Zealand Infrastructure Commission. (2025). *The Infrastructure Needs Analysis Forecast: Results and modelling technical report.* https://tewaihanga.govt.nz/our-work/research-insights/infrastructure-needs-analysis

[35] New Zealand Infrastructure Commission. (2024). *Buying time: Toll roads, congestion charges, and transport investment.* https://tewaihanga.govt.nz/our-work/research-insights/buying-time-toll-roads-congestion-charges-and-transport-investment New Zealand Infrastructure Commission. (2025). *Paying it back: An examination of the fiscal returns of public infrastructure investment.* https://tewaihanga.govt.nz/our-work/research-insights/paying-it-back-an-examination-of-the-fiscal-returns-of-public-infrastructure-investment

[36] Nicholson Consulting. (2025). Commissioned by the New Zealand Infrastructure Commission. *Analysing the Impact of Long-term Drivers on Māori: Phase 2 Report.* https://tewaihanga.govt.nz/our-work/research-insights/infrastructure-needs-analysis

[37] New Zealand Infrastructure Commission. (2023). *How much do we pay for infrastructure? Household expenditures on infrastructure services.* https://tewaihanga.govt.nz/our-work/research-insights/household-expenditure-on-infrastructure-services

[38] This is addressed in previous modelling commissioned by Electricity Networks Aotearoa. (2022). *Total household energy costs NZ.* https://www.ena.org.nz/our-work/publications/document/1521

[39] The Treasury. (last updated December 2023). 'Gateway review findings' https://www.treasury.govt.nz/information-and-services/state-sector-leadership/investment-management/investment-management-system-reporting/gateway-review-findings

[40] OECD. (2023). OECD Infrastructure Governance Indicators. https://www.oecd.org/en/publications/oecd-infrastructure-governance-indicators_95c2cef2-en.html

[41] BERL. (2024). Commissioned by the Ministry of Business, Innovation and Employment. *Te Ōhanga Māori 2023.* https://www.mbie.govt.nz/assets/te-ohanga-maori-2023-report.pdf

[42] Around 5% of GDP in a scenario with lower bound impacts from population and economic growth to around 7% of GDP in a scenario with upper bound impacts from population and economic growth.

[43] Koi Tū Centre for Informed Futures. (2024). 'Community Panel on time-of-use charging in Auckland'. Community Panel on Time-of-Use Charging in Auckland – Koi Tū: The Centre for Informed Futures

[44] Complex Conversations. University of Auckland. Citizens' Assembly | Complex Conversations

[45] New Zealand Infrastructure Commission. (2024). *State of Play: Māori engagement in infrastructure. Huihuinga kaiwhakarato – hanganga Māori.* https://tewaihanga.govt.nz/our-work/research-insights/maori-engagement-in-infrastructure-research

[46] New Zealand Government. (2024). 'Government getting local government back to basics'. https://www.beehive.govt.nz/release/government-getting-local-government-back-basics

[47] Other relevant legislation includes the State Sector Act 1988, Public Audit Act 2001, Crown Entities Act 2004, and State-Owned Enterprises Act 1986.

[48] They must also provide other economic and fiscal information through financial reporting, Economic and Fiscal Updates and statutory reports with specific purposes (such as the long-term fiscal statement).

[49] The Treasury. (2023). *A guide to the Public Finance Act.* https://www.treasury.govt.nz/sites/default/files/2023-11/guide-pfa-nov23.pdf

[50] The requirements of the Investment Management System must be followed by government departments. Crown entities and Public Finance Act 1989 Schedule 4A companies must treat the Circular as an expression of government policy.

[51] Cabinet Office. (2023). CO (23) 9 'Investment Management and Asset Performance in Departments and Other Entities'. https://www.dpmc.govt.nz/sites/default/files/2023-09/co-23-09-investment-management-asset-performance.pdf This is the latest update to the Circular, following earlier versions in 2019, 2015, and 2010.

[52] The Treasury. (Last updated December 2024). 'Infrastructure agencies'. https://www.treasury.govt.nz/information-and-services/nz-economy/infrastructure/infrastructure-agencies

[53] NZ Transport Agency Waka Kotahi. (2024). *National Land Transport Programme 2024–27.* See page 5. https://www.nzta.govt.nz/assets/planning-and-investment/nltp/2024/docs/2024-27-national-land-transport-programme.pdf

[54] The Treasury. (2025). https://www.treasury.govt.nz/sites/default/files/2025-04/oia-20250162.pdf

[55] In effect, government is providing 'insurance' or 'income smoothing' services in areas where markets are incomplete.

[56] The Treasury. (2024). *Funding and Financing Framework Guide.* https://www.treasury.govt.nz/publications/guide/funding-and-financing-framework

[57] Under the National Code of Practice for Utility Operators.

[58] Sapere. (2021). Commissioned by the New Zealand Infrastructure Commission. *The cost of consenting infrastructure projects in New Zealand.*

[59] In 2023 The Natural and Built Environment Act and Spatial Planning Act were passed into legislation, then repealed. The Government has announced that the Resource Management Act 1991 will be replaced with two new Acts that clearly differentiate between land-use planning and natural resource management, while putting a priority on the enjoyment of private property rights.

[60] Parliamentary Commissioner for the Environment. (2023). *Are we building harder, hotter cities? The vital importance of urban green spaces.* **https://pce.parliament.nz/publications/are-we-building-harder-hotter-cities-the-vital-importance-of-urban-green-spaces/**

[61] NZIER. (2024). Commissioned by Local Government New Zealand. *Cost impact of central government reforms.* **https://www.lgnz.co.nz/news/media-releases/government-cost-on-councils-impacting-rates/**

[62] *NZ Herald.* 24 March 2025. Opinion by Stephen Batstone and David Reeve. 'Why more generation won't solve New Zealand's energy woes'.

[63] The $6.9 billion is an estimate of economic surplus from Distributed Energy Resources uptake, net present value 2021–2050. See Sapere. (2021). Commissioned by the Electricity Authority. *Cost-benefit analysis of distributed energy resources in New Zealand.* **https://www.ea.govt.nz/documents/1742/Sapere_CBA.pdf**

[64] 'Dry year risk' refers to our greater reliance than most countries on hydroelectricity generation and the limits on our storage capacity to cope in a dry year.

[65] Renewable sources such as wind and solar generation are intermittent because they vary depending on weather conditions, so firming refers to other types of more reliable generation such as gas or coal-fired peaking plants or other techniques and technologies that support a more reliable power supply.

[66] Ministry of Business, Innovation and Employment. (Last updated April 2025). 'Review of electricity market performance'. **https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-consultations-and-reviews/review-of-electricity-market-performance**

[67] Electricity Authority. (2025). 'Energy Competition Task Force'. **https://www.ea.govt.nz/projects/all/energy-competition-task-force/**

[68] This could include factors such as improvements in battery technology, solar panels, new geothermal approaches, smart energy technologies, and many more.

[69] Transpower. (2024). *Monitoring Report October 2024.* **https://static.transpower.co.nz/public/uncontrolled_docs/FINAL%20-%20Monitoring%20Report%20-%20October%202024.pdf?VersionId=1Q0o6rSAOyirxxqBjy03P_ZQo_lq6eQx**

[70] By 'agencies' we mean departments (as defined in the Public Finance Act 1989), statutory Crown entities, Crown entity companies, and Crown entity subsidiaries (as defined in the Crown Entities Act 2004), and companies listed in Schedule 4A of the Public Finance Act 1989. See: The Treasury. (Last updated November 2022). 'Types of companies and entities'. **https://www.treasury.govt.nz/information-and-services/company-and-entity-performance-advice/portfolio-companies-and-entities/types-companies-and-entities**

[71] New Zealand Parliament. (2023). 'Chapter 42 – Public Finance'. **https://www.parliament.nz/en/visit-and-learn/how-parliament-works/parliamentary-practice-in-new-zealand-2023-by-chapter/chapter-42-public-finance/**

[72] See s9 of the Land Transport Management Act 2003.

[73] In Budget documents, these are described as 'operating allowances' and 'capital allowances'.

[74] The Treasury. (2025). 'Fiscal strategy model'. **https://www.treasury.govt.nz/publications/fsm/fiscal-strategy-model-befu-2025**

[75] New Zealand Infrastructure Commission (2025). From plans to projects: *An assessment of how central government plans, funds, and manages infrastructure.* Add link when published.

[76] Cabinet Office. (2023). CO (23) 9 'Investment Management and Asset Performance in Departments and Other Entities'. Note: Previous versions of the Circular also included long-term planning requirements, but the details of these requirements changed over time.

[77] New Zealand Infrastructure Commission (2025). *From plans to projects: An assessment of how central government plans, funds, and manages infrastructure.* **https://tewaihanga.govt.nz/our-work/research-insights/from-plans-to-projects**

[78] The Treasury. (Last updated February 2025). 'Quarterly Investment Reporting'. **https://www.treasury.govt.nz/information-and-services/public-sector-leadership/investment-management/investment-management-system-reporting/quarterly-investment-reporting**

[79] Health New Zealand. (2025). Health Infrastructure Plan. **https://www.tewhatuora.govt.nz/publications/health-infrastructure-plan**

[80] New Zealand Defence Force. (2025). *2025 Defence Capability Plan.* **https://www.defence.govt.nz/assets/publications/Defence-Capability-Plan-25.pdf**

[81] Large capital investments that are funded through agencies' ongoing operating funding allowances are also required to seek Cabinet approval, but they may not necessarily receive comparable review through the Treasury's Investment Panel prior to doing so.

[82] The Treasury. (2024). Investment Panel Advice – Budget 2022. **https://www.treasury.govt.nz/sites/default/files/2022-09/b22-t2022-76-4610105.pdf**

[83] New Zealand Infrastructure Commission. (2025). *From plans to projects: An assessment of how central government plans, funds, and manages infrastructure.*

[84] New Zealand Infrastructure Commission. (2025). *Delivering better value and better outcomes: A discussion document on changing practices in infrastructure delivery.* **https://tewaihanga.govt.nz/our-work/research-insights/delivering-better-value-and-better-outcomes**

[85] New Zealand Infrastructure Commission. (2025). *From plans to projects: An assessment of how central government plans, funds, and manages infrastructure.*

[86] Based on the OECD Infrastructure Governance Indicator on asset life cycle management.

[87] New Zealand Infrastructure Commission. (2024). *Taking care of tomorrow today: Asset management state of play.*

[88] Cabinet Office. (2023). CO (23) 9 'Investment Management and Asset Performance in Departments and Other Entities'. Note: Previous versions of the Circular also included similar requirements.

[89] New Zealand Infrastructure Commission. (2024). *Build or maintain?* Based on data from NZ Transport Agency Waka Kotahi.

[90] The Treasury. (2022). *He Puna Hao Pātiki: 2022 Investment Statement.* See page 43. **https://www.treasury.govt.nz/sites/default/files/2022-03/is22-hphp-v2.pdf**

[91] Under the Public Finance Act 1989, agencies are required publish annual reports with information on asset valuations, depreciation expenses and capital and operating spending. However, they are not required to provide more detailed breakdowns of actual or planned spending on maintenance and renewals.

[92] Office of the Minister for Infrastructure. Cabinet, Economic Policy Committee. (2025). **https://www.treasury.govt.nz/sites/default/files/2025-05/cabinet-paper-exp-25-sub-0049-improving-asset-management-processes-and-practices-in-new-zealand.pdf**

[93] Office of the Auditor-General. (2025). *Observations from our audits of councils' 2024-34 long-term plans. Part 2: Trends in councils' financial and infrastructure strategies.* **https://oag.parliament.nz/2025/long-term-plans/part2.htm**

[94] The Treasury. (2024). *Half Year Economic and Fiscal Update.*

[95] Office of the Auditor-General. (2013). *Insuring public assets.* **https://oag.parliament.nz/2013/insuring-public-assets**

[96] National Emergency Management Agency. (2024). 'Response, other response and recovery claims following an emergency event'. **https://www.civildefence.govt.nz/cdem-sector/guidelines/claims-factsheets/response-other-response-and-recoveryclaims-following-an-emergency-event** Note: The Crown's contribution is for 60% of costs above a threshold calculated based on the affected council's net capital value (Section 33.7).

[97] Office of the Auditor-General. (2013). *Insuring public assets.*

[98] Reflects the most recent information provided to the National Infrastructure Pipeline by contributors, primarily during the March 2025 update process and is subject to change. All information, including dates shown for these initiatives in planning phases are indicative and subject to change based on further planning as the project and funding commitments evolve. Initiatives without a full funding commitment recorded include those with part funding, funding source confirmed (but not committed), and funding source to be confirmed.

[99] The accuracy of the information in the Pipeline depends upon the quality of contributor submissions. Contributors should ensure their information is keep up to date in the National Infrastructure Pipeline, including through their submissions for September 2025 quarter which will be drawn from to inform the final Plan.

[100] New Zealand Infrastructure Commission. (2025). *Getting to what we need: Public agreement and community expectations around infrastructure.* **https://tewaihanga.govt.nz/our-work/research-insights/getting-what-we-need**

[101] New Zealand Infrastructure Commission. See 'Our work' and 'Discover the Strategy' and 'Performance monitoring' **https://tewaihanga.govt.nz/our-work**

[102] New Zealand Infrastructure Commission. (2025). *Infrastructure Needs Analysis: Summary of results and findings.* **https://tewaihanga.govt.nz/our-work/research-insights/infrastructure-needs-analysis**

[103] New Zealand Infrastructure Commission. (2024). *Taking care of tomorrow today: Asset management state of play.*

[104] New Zealand Infrastructure Commission. (2025). *Benchmarking our infrastructure: Technical report.* **https://tewaihanga.govt.nz/our-work/research-insights/infrastructure-needs-analysis**

[105] New Zealand Infrastructure Commission. (2025). 'Transport sector performance'. **https://tewaihanga.govt.nz/our-work/performance-monitoring/transport-sector-performance**

[106] New Zealand Infrastructure Commission. (2025). *The Infrastructure Needs Analysis Forecast: Results and modelling technical report.*

[107] New Zealand Infrastructure Commission. (2025). *Benchmarking our infrastructure: Technical report.*

[108] New Zealand Infrastructure Commission. (2025). 'Water sector performance'. **https://tewaihanga.govt.nz/our-work/performance-monitoring/water-sector-performance**

[109] New Zealand Infrastructure Commission. (2025). *The Infrastructure Needs Analysis Forecast: Results and modelling technical report.*

[110] New Zealand Infrastructure Commission. (2025). *Benchmarking our infrastructure: Technical report.*

[111] New Zealand Infrastructure Commission. (2025). 'Energy sector performance'. **https://tewaihanga.govt.nz/our-work/performance-monitoring/energy-sector-performance**

[112] New Zealand Infrastructure Commission. (2025). *The Infrastructure Needs Analysis Forecast: Results and modelling technical report..*

[113] New Zealand Infrastructure Commission. (2025). *Benchmarking our infrastructure: Technical report.*

[114] New Zealand Infrastructure Commission. (2025). 'Telecommunications sector performance'. **https://tewaihanga.govt.nz/our-work/performance-monitoring/telecommunications-sector-performance**

[115] New Zealand Infrastructure Commission. (2025). *The Infrastructure Needs Analysis Forecast: Results and modelling technical report.*

[116] New Zealand Infrastructure Commission. (2025). *Benchmarking our infrastructure: Technical report.*

[117] New Zealand Infrastructure Commission. (2025). *The Infrastructure Needs Analysis Forecast: Results and modelling technical report.*

[118] New Zealand Infrastructure Commission. (2025). *Benchmarking our infrastructure: Technical report.*

[119] New Zealand Infrastructure Commission. (2025). *The Infrastructure Needs Analysis Forecast: Results and modelling technical report..*

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