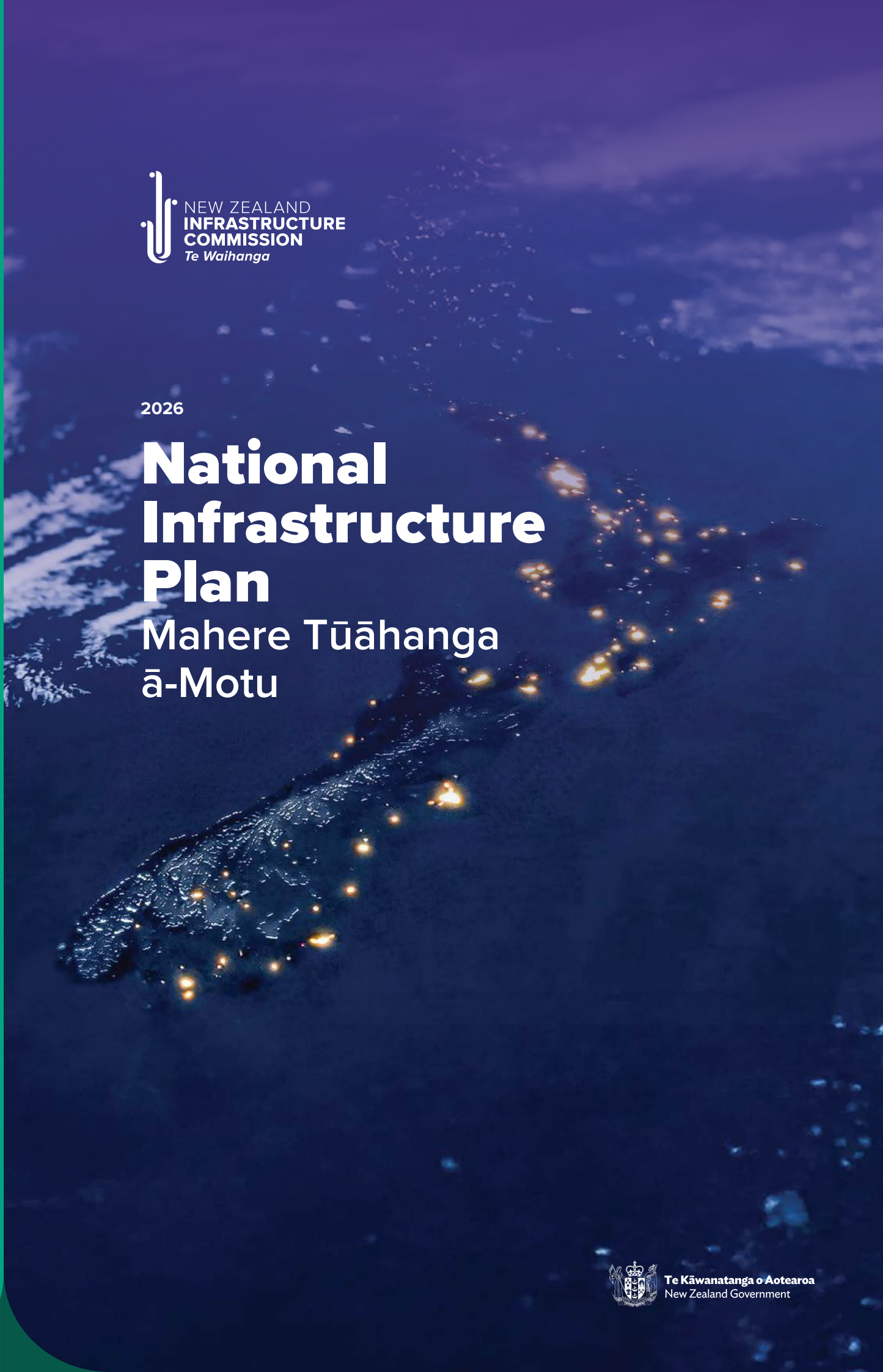
NEW ZEALAND
INFRASTRUCTURE
COMMISSION
Te Waihanga

2026

National Infrastructure Plan

Mahere Tūāhanga ā-Motu



Te Kāwanatanga o Aotearoa
New Zealand Government

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NEW ZEALAND INFRASTRUCTURE COMMISSION *Te Waihanga*

Te Kāwanatanga o Aotearoa
New Zealand Government

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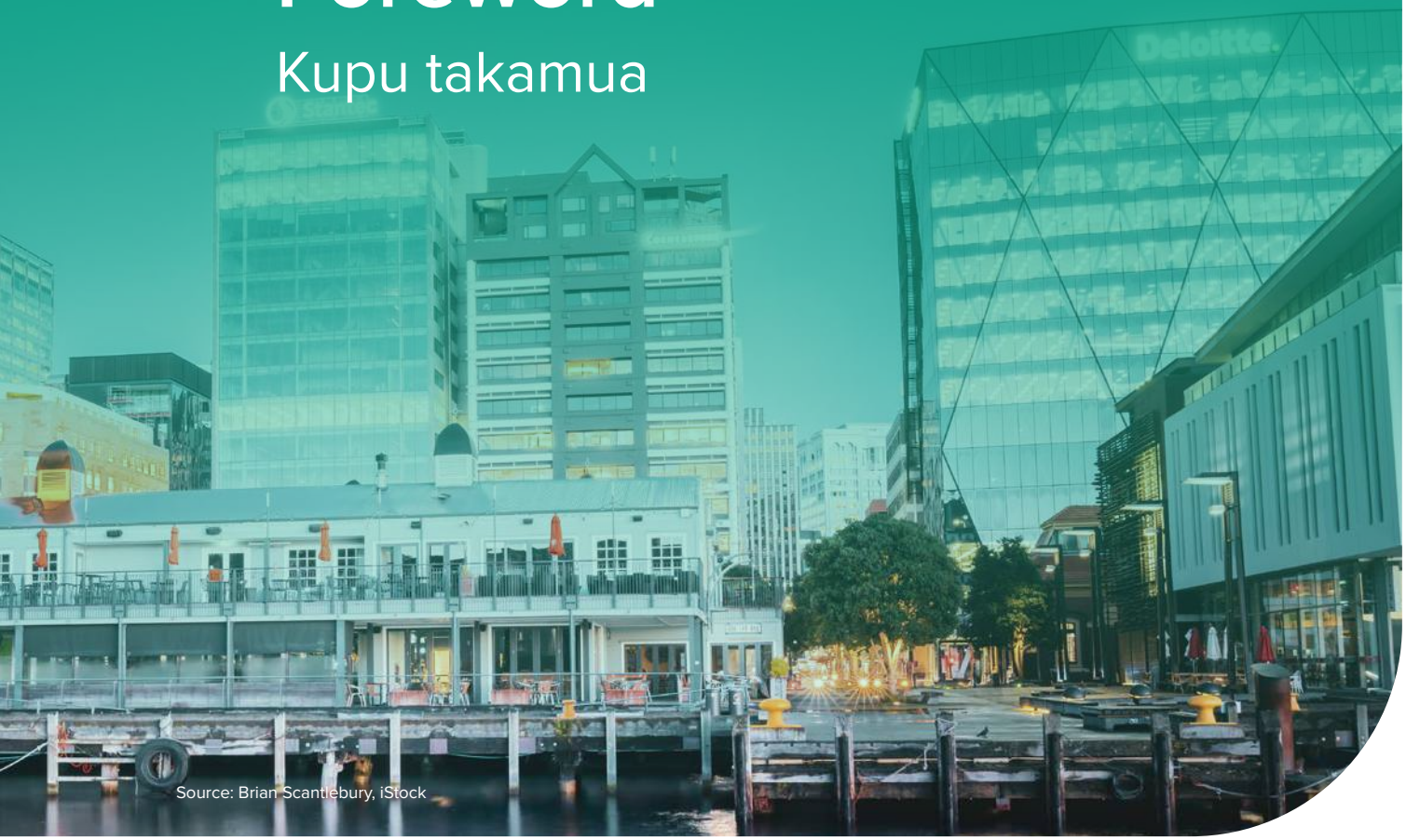


Source: Brian Scantlebury, iStock

New Zealand has delivered world-class infrastructure before. With tremendous innovation, hard work and skill, our ancestors knitted the country together with networks of roads, railway lines, tunnels and bridges. Tapping into the power of the earth, they built pioneering hydro and geothermal power schemes and created a single national grid – connecting the two islands with what was then the longest high voltage link in the world. In recent decades, we have rapidly rolled out new technologies like electronic payment systems and Ultra-Fast Broadband.

New Zealand achieved great things in the past, though under very different circumstances. To navigate the deep technological, economic, demographic and climate-related changes now under way, we will need to do so again. Success will require sustained effort, a willingness to change how we plan, fund, build and maintain infrastructure, and the courage to face hard truths.

Compared to many other high-income countries, for example, New Zealand spends a greater share of gross domestic product on infrastructure but achieves less. This needs to change. If it doesn't, New Zealanders risk missing out on the hospitals, schools, water systems, telecommunications and transport networks they expect and deserve.

When the Commission released the draft National Infrastructure Plan in June 2025, the goal was to test whether we'd identified the right problems and, more importantly, the right solutions to improve performance and deliver better value for money. The response was clear: New Zealanders care deeply about infrastructure, and there was broad agreement with the direction of the draft Plan.

We want to thank everyone who provided feedback – iwi and Māori organisations, local and central government, the private sector, and community and sector groups across New Zealand. Your ideas and expertise have helped shape a clearer, more actionable Plan.

The National Infrastructure Plan sets out recommendations under four main themes:

Planning what we can afford

Looking after what we've got

Prioritising the right projects

Making it easier to build better

Implementing the recommendations outlined in the Plan will ensure the infrastructure system is set up to deliver enduring value for current and future generations. Parts of the Plan will be regularly updated so decision-makers and the public have access to the latest information. The Commission will also monitor progress against our recommended changes.

As well as system-level recommendations, the Commission has used its Forward Guidance – a method for forecasting infrastructure demand over time – to identify 10 areas that require more immediate attention. The Plan also draws on the latest assessments from the Infrastructure Priorities Programme, giving decision-makers a vetted menu of priority projects. And it brings together data on $275 billion of projects currently in planning and delivery across New Zealand, helping to ensure decisions aren't made in isolation.

The Plan sets out a practical, affordable path for delivering the infrastructure New Zealanders need to thrive over the next 30 years, but it won't change anything by itself. Progress depends on the choices we make from here. Stepping up to the task will require us doing things differently. If we continue with the status quo, we'll fall further behind.

And we know progress is possible – because we're already doing it. New Zealand is starting to lift its game. We've seen strong delivery in some areas, including the roll-out of new wind farms at internationally competitive costs. We've collectively built a National Infrastructure Pipeline that is second to none for its coverage and is ramping up the insights available to industry and decision-makers. Through our Forward Guidance, we are now strongly positioned to optimise investment across the infrastructure portfolio, which can help us tackle affordability early – decades before it reaches the point of no return.

There will always be debate about individual priorities and projects. But – as the feedback on the draft Plan made clear – finding common ground isn't just possible, it's essential if we're going to deliver the infrastructure services New Zealanders expect. The National Infrastructure Plan can point the way, but it's up to all of us to take the next steps.

Raveen Jaduram
Board Chair

Geoff Cooper
Chief Executive

Foreword

Kupu takamua

Kua hangaia e Aotearoa ngā tūāhanga tiketike rawa i mua. Nā runga i te mahi auaha, te ihuoneone me te mahi pūkenga, nā ō tātou tīpuna i raranga tahi i te motu nei ki ngā whatunga o ngā huarahi, ngā rerewē, ngā arapoka me ngā arawhiti. Mā te nanao atu ki te mana o te whenua, ka hangaia e rātou ngā kaupapa hiko ā-wai, ā-ngāwhā hoki, me te waihanga i tētahi tukutuku hiko ā-motu kotahi - e hono ana i ngā motu e rua, otirā i taua wā koinā te hononga ngaohiko rōroa rawa o te ao. I ngā ngahurutau tata nei, i tere whakaputaina ngā hangarau hou pēnei i ngā pūnaha utu ā-hiko me te ipurangi Aunui Hohoro.

He nui ngā whakatutukitanga a Aotearoa i te ngā tau o mua, otirā he rerekē te āhua o ngā āhuatanga i aua wā. Hei urungi haere i ngā panonitanga ā-hangarau nui, ā-ōhanga, ā-hangapori, ā-āhuarangi hoki kua tīmata kē, me pērā anō te nui o ngā whakatutukitanga. E angitu ai, me toitū te mahi, me hihiri ki te whakarerekē i ngā whakamaheretanga, te āhua o te tuku pūtea, te hanga me te tiaki i ngā tūāhanga, otirā me te manawanui anō ki te tūtohu ki ngā uauatanga tūturu.

Ina tauritea ki ētahi atu whenua moniwhiwhi-nui, he nui ake te whakapaunga a Aotearoa ki te tūāhanga engari he iti ake ngā whakatutukitanga. Me panoni rawa tēnei. Ki te kore, ko te mōrearea ia, e kore pea a Aotearoa e whiwhi i ētahi hōhipera, kura, pūnaha wai, hangarau whakawhiti kōrero me ngā whatunga tūnuku e tika ana.

I te wā i whakaputaina e te Kōmihana te Mahere Tūāhanga ā-Motu hukihuki i te Hune 2025, ko tō mātou whāinga ko te whakamātau mēnā i tautohua e mātou ngā raru tika, ā, mātua rā, te tautohu i ngā otinga tika ki te whakapai ake i ngā mahi me te kawe i te hua pai rawa mō te moni. He mārama te urupare: He nui te kumanu a te iwi ki te tūāhanga, ā, i kitea te whakaaetanga whānui ki te ahunga o te Mahere hukihuki.

E hiahia ana mātou ki te mihi ki te huhua tāngata i tuku whakaaro mai - ngā iwi me ngā whakahaere Māori, ngā kaunihera me te kāwanatanga, te rāngai tūmataiti tae atu ki ngā rōpū hapori, ā-rāngai hoki puta noa i te motu. Nā ō whakaaro me ō mōhiotanga i hoahoa i tētahi Mahere mārama ake, whaitake ake hoki.

Ka whakatakoto te Mahere Tūāhanga ā-Motu i ngā tūtohu i raro i ngā ariā matua e whā:

Te whakamahere i tā te pūtea e taea ai.

Te whakaarotau i ngā kaupapa tika.

Te tiaki i ngā rawa onāianei.

He whakamāmā i ngā hanganga pai ake.

Mā te whakatinana i ngā tūtohu e takoto ana ki te Mahere e whakarite i te pūnaha tūāhanga ki te kawe i te uara mauroa mō tēnei whakatipuranga me ngā whakatipuranga e whai mai ana. Ka auau te whakahou i ngā wāhanga o te Mahere kia whai āheinga ai ngā kaiwhakatau take me te iwi tūmatanui ki ngā mōhiohio hou. Ka aroturuki hoki te Kōmihana i ngā kokenga, ka tauritea ki ngā tūtohu panonitanga.

I tua atu i ngā tūtohu ā-pūnaha, i whakamahia e te Kōmihana tana Aratohu Angamua - he tikanga hei matapae i te popono tūāhanga i te hekenga o te wā - ki te tautohu i ngā wāhi 10 e hiahia ana i ngā whakataunga wawe. Ka nanao atu hoki te Mahere ki ngā aromatawai hou nā te Hōtaka Whakaarotau Tūāhanga, e tuku ana ki ngā kaiwhakatau take tētahi rārangi kua oti te mātaihia, o ngā kaupapa whakaarotau. Ka whakatōpū hoki i ngā raraunga o ngā kaupapa e $275 piriona te uara e whakamaheretia ana, e kawea ana hoki puta noa i Aotearoa, hei āwhina ki te whakarite i te āhua o ngā whakataunga, kia kore e taratahi te whakatau.

Ka whakatakoto te Mahere i tētahi huarahi whaitake, ngāwari te utu ki te kawe i ngā tūāhanga e tōnui ai te iwi o Aotearoa hei ngā 30 tau e tū mai nei, engari kāore e taea e te Mahere anake te rapu painga. Ka whirinaki ngā kokenga whakamua ki ngā kōwhiringa ka whāia e tātou atu i tēnei rā. Me rerekē ā tātou mahi e tū pakari ai tātou ki te oke i tēnei take nui. Ki te ū tātou ki te huarahi e whāia ana ināianei, ka nui kē atu te hoki whakamuri.

E mārama ana tātou e taea ana te koke whakamua - i te mea kua tīmata kē. Kua tīmata a Aotearoa ki te whakapiki i ā tātou mahi. Kua kitea ngā kawenga pakari i ētahi wāhi, tae atu ki te putanga o ngā pāmu kapohau hou me pai o te utu, ina tauritea ki te ao. Kua whakapikihia ngā rohe whakatū whare ki te taha o ngā tūāhanga, otirā kāore e taea tēnei e te huhua o ngā whenua o te ao. Kua hangaia e tātou he Roma Tūāhanga ā-Motu whakahirahira, mō tōna hōkaitanga, me ngā tirohanga ka tukua ki ngā ahumahi me ngā kaiwhakatau take. Mā roto i te Aratohu Angamua, e whakatau wawe ana mātou i te take whakangāwari utu - i ngā ngahurutau maha i mua o te taenga ki te ara hokinga kore. E pakari ana hoki te whakataunoa me te whakamāmā i ngā pukature whakamahere, kia mārama ake, kia reretahi ake te pūnaha.

Ahakoa pēhea ka tohea tonu ngā whakaarotau me ngā kaupapa takitahi. Engari - pērā i ngā kōrero mārama i puta i ngā whakahoki kōrero mō te Mahere hukihuki - he mea waiwai te rapu i te whakaaro ōrite, ehara noa i te āheinga, mēnā rā ka puta i a tātou ngā ratonga tūāhanga e matapaetia ana e te iwi o Aotearoa. Ko te Mahere Tūāhanga ā-Motu tērā e tohu ana i te ara whakamua, engari kei a tātou katoa te tikanga ki te koke whakamua.

Raveen Jaduram
Board Chair

Geoff Cooper
Chief Executive

Source: Jessie Casson, Getty Images

Ki a koe tētahi kīwai, ki a au tētahi kīwai

For you one handle of the basket and for me the other

Executive summary

Whakarāpopoto Matua

Source: Fraser Tebbutt, Truestock

Our future prosperity depends on infrastructure. New Zealand has built extensive networks of roads, water pipes and power lines – as well as social infrastructure like hospitals, schools and courts – that underpin the economy and support our way of life. But we are up against formidable challenges. Building and maintaining infrastructure is becoming more expensive and climate change is making the risks we face from natural hazard events more severe. Additionally, much of what we've built in past decades is wearing out and needs to be replaced.

We spend a lot on infrastructure, but we don't always get good value. New Zealand invested around 5.8% of gross domestic product (GDP) annually on infrastructure over the past 20 years, making us one of the top spending countries in the Organisation for Economic Co-operation and Development (OECD).[1] Yet we rank towards the bottom for efficiency, or 'bang for buck'. Having a small population spread across challenging terrain doesn't help, but we also put hurdles in our way. Consenting alone costs infrastructure projects $1.3 billion each year.[2] Too often, projects are announced without going through a proper planning process, and maintenance gets routinely deferred in favour of the 'new and shiny'.

Fiscal and demographic trends will make it harder to address our challenges. If New Zealand doesn't change course, net Crown debt is forecast to be 200% of GDP by 2065, or $237,900 per person. The ratio of working-age people to those aged 65-and-over will be closer to two-to-one by then, meaning less income tax revenue and more demand for healthcare.[3] Many local authorities are also approaching their debt limits. These pressures mean we cannot afford to build our way out of every problem. We need to get smarter about how and where we invest.

New Zealanders want us to take better care of what we've got. Through our public engagement, respondents overwhelmingly emphasised the need for improved maintenance and long-term planning of core infrastructure, particularly hospitals, water supply and transport. Respondents highlighted the importance of climate resilience and the need to consider environmental, social and economic outcomes when delivering infrastructure.

The National Infrastructure Plan is a framework to sustainably deliver the infrastructure New Zealand needs over the next 30 years. The current system isn't working as it should. The public and the construction sector are becoming increasingly sceptical about announced project timeframes and budgets due to frequent cost overruns and delays. Decision-makers don't have access to the information they need to run the ruler over competing investments. Many central government agencies don't know enough about the state of their existing infrastructure, or have a plan to look after it for the long term. Fixing the foundations of the system will create the conditions for better sectoral and regional investment planning, setting New Zealand up to better meet today's needs and those of future generations.

Getting it right matters now more than ever. New Zealand is planning more projects than we can afford to deliver. The National Infrastructure Pipeline has information on 11,925 projects worth $275 billion in planning or delivery, spread across all regions (Figure 1). Smaller projects worth less than $100 million make up 98% of the Pipeline by number, but a handful of unfunded megaprojects account for a large share of the total value. Choosing to fund them might crowd out investment for the smaller, deliverable packages of work that contractors and communities depend on. This highlights the need to prioritise projects according to social and economic return and our collective ability to fund the required level of investment.

Four themes for change

As an independent advisor to the Government, the Commission takes a nationwide view to encourage and promote infrastructure development that enhances the wellbeing of New Zealanders. The Plan has a specific focus on improving the performance of the public sector as an asset owner, investor, and rule-setter. It identifies four themes and 16 recommendations that will make a material difference to how we plan, fund and deliver infrastructure in New Zealand.

Planning what we can afford

The National Infrastructure Plan provides a fundable and coordinated view of what we can afford to spend on infrastructure. Our advice on what we should be spending on different types of infrastructure over the next 30 years is called Forward Guidance (Table 1). New Zealand can expect to invest between 5% and 7% of GDP on capital infrastructure projects every year, but the spending mix must change as our demographics and economy change. Increased investment in health and electricity will need to be balanced out by proportionately less spending on sectors where there will be less demand over the long term.

How we price and fund different types of infrastructure matters. Network infrastructure such as roads, telecommunications and water should be funded by users. This would free up general taxes to pay for social infrastructure such as hospitals and schools. In transport, this requires reforming the investment and funding system to ensure spending commitments are in line with what we recover from users.

New Zealand spends more on land transport than any other infrastructure class, yet current investment plans exceed what can be sustainably funded by users. Without stronger prioritisation, this risks displacing investment in other sectors and increasing pressure on general taxes. Reform is needed to better align transport investment with what users can fund, supported by clearer and more independent oversight to ensure spending is focused on maintaining existing networks and delivering new projects only where they respond to demand and provide clear value for money.

Our Forward Guidance for a sustainable investment mix

Table 1: **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	1.3%	1.0%	↓	Decarbonisation, slowing income and population growth
Electricity and gas	Commercial sector	User charges	0.8%	1.3%	↑	Decarbonisation, renewals
Water and waste	Local government	User charges and rates	0.6%	0.5%	↓	Renewals and natural hazards
Telecommunications	Commercial sector	User charges	0.7%	0.7%		Renewals, stable outlook
Social infrastructure						
Education – primary/secondary	Central government	Taxes	0.4%	0.3%	↓	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	0.3%	0.3%		Renewals and population growth
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:** 'Forward Guidance on Infrastructure Investment'. New Zealand Infrastructure Commission. (2026).

Looking after what we've got

Most of the infrastructure we will need for the next 30 years already exists. Being good guardians, or kaitiaki, will require spending as much as 60 cents in every dollar of infrastructure investment to replace or rebuild our existing assets as they wear out.[4]

New Zealand ranks fourth to last in the OECD at asset management, the practice of looking after our existing infrastructure.[5] Leaky hospitals, mouldy army barracks and deferred maintenance across the public sector are symptoms of a wider system failure. To address this, central government agencies should be required to develop long-term asset management and investment plans that set out how they will maintain their existing assets and what new, demand-driven investments might be possible under different funding scenarios. Agencies also need to be aware of the risks that could damage or disrupt their infrastructure, including natural hazard

events such as earthquakes and floods, and threats such as cyber-attacks or espionage. Building more resilient infrastructure can have economic and social benefits, but investments need to be cost-effective and proportionate to the value and criticality of the services and assets being protected.

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, and that we avoid diverting maintenance spending into new capital investment to the cost of future generations.

Prioritising the right projects

Central government agencies need to 'think slow and act fast' when they're planning new investments. This means considering and testing a range of options – including low-cost or non-built solutions – before identifying a preferred way forward. Investments seeking Budget funding should have robust business cases and be consistent with what agencies have been signalling in their long-term plans.

The existing assurance system to scrutinise projects and long-term plans is fragmented and inconsistent. This makes it harder for decision-makers to make the most strategic investments. The Commission's Infrastructure Priorities Programme (IPP) aims to help by producing a vetted 'menu' of proposals by examining whether they're affordable, deliverable and aligned with strategic priorities. Other tools, including an assurance process to check whether long-term asset management and investment plans are credible and fundable, are needed to ensure we're investing our scarce resources in the best way possible.

Keeping infrastructure investment affordable requires changing how we approach large projects. With more megaprojects in planning than the country can realistically fund or deliver, providers should prioritise low-cost, incremental upgrades over waiting for expensive, fully formed solutions. This is especially important in health and transport, where megaprojects threaten to crowd out other priorities like essential maintenance and renewals. Our Forward Guidance suggests we can maintain and gradually improve these networks, but in transport we won't be able to deliver the full pipeline of major road and rapid-transit projects without significant – and likely unacceptable – rises in user charges. A more disciplined approach to prioritising, sequencing, and sizing major projects, grounded in strong analysis of need, cost, and asset performance, will help keep investment programmes sustainable and high value.

Making it easier to build better

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 develop 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.

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: for example, limitations on concerts mean stadiums cannot generate the revenue to cover depreciation and poor transport pricing means we spend a lot to build roads to handle peak capacity instead of trying to spread use throughout the day. A key area for improvement is the resource management system, which has significant impacts on how we build, maintain and operate all types of infrastructure.

Better spatial planning is needed to coordinate land use and infrastructure and shape how our cities and regions grow. Effective regional spatial plans need statutory weight, alignment with other planning processes, and real influence over infrastructure funding and sequencing – they can't just be regional wish lists.

Ten priorities for the decade ahead

Applying the four themes in this Plan will lead to more balanced and affordable infrastructure investment over the next 30 years. Getting there will take time, but the 16 recommendations (listed on page 15) provide a clear pathway to a stronger and more enduring infrastructure investment system. At the same time, New Zealand faces acute pressures across a range of sectors and regions. Using our Forward Guidance – a method for forecasting infrastructure demand over time – the Commission has identified 10 priority areas requiring attention over the next decade. The key actions set out for each area should be progressed in tandem with the wider, system-level changes:

1. **Lift hospital investment for an ageing population:** Increase investment as a share of GDP to address ageing population demands and maintenance backlogs through clear long-term planning. (page 52)
2. **Complete catch-up on renewals in the water sector and restore affordability:** Sector affordability can be restored through national guidance on demand management, resourcing the economic regulator and providing assurance over investment proposals. (page 54)
3. **Implement time-of-use charging and fleetwide road user charges:** This is essential for improving the efficiency of our urban road networks, particularly in congested cities. (page 62)
4. **Prioritise and sequence major land transport projects:** Restore affordability by timing major road and rapid transit investments based on demonstrated demand and cost benchmarking, while using low-cost and targeted improvements first to lift network performance. (page 66)
5. **Manage assets on the downside:** Actively plan for declining demand scenarios arising from changing demographics, technology and climate change, and explore asset recycling opportunities within portfolios to maintain value and affordability. (page 80)
6. **Prioritise adequate maintenance and renewals:** Central government agencies must prioritise adequate funding to prevent asset deterioration and costly reactive fixes. (page 86)
7. **Identify cost-effective flood risk infrastructure:** Climate change will intensify flooding and impact infrastructure, requiring effective community risk management approaches. (page 90)
8. **Commit to a durable resource management framework:** New Zealand needs a durable legislative framework with spatial planning and national standards that can evolve through incremental amendments. (page 113)
9. **Commit to upzoning around key transport corridors:** This will lead to more efficient use of water and other networks and maximise the value of transport infrastructure investments. (page 116)
10. **Take a predictable approach to electrify the economy:** Achieving electrification and net zero carbon targets requires predictable market rules and policy settings rather than non-commercial government investment in electricity supply. (page 122)

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.

It's time to come together and 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, or 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 in the decades to come.

Change will not be easy. It will require courage, collaboration and a shared determination to think and act differently. The alternative – sticking with the status quo – is to accept a future where we fail to deliver the infrastructure services New Zealanders need and expect.

Recommendations for long-term system shifts

Planning what we can afford

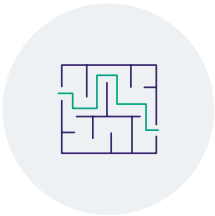
1. **Needs-based capital allowances:** Ensure fiscal strategy and capital allowances are informed by the Commission's independent assessment of long-term needs and agencies' infrastructure asset management and investment plans. (page 59)
2. **Land transport funding and oversight:** Reform the land transport funding and investment oversight system to ensure financial sustainability and enhance economic and social outcomes by aligning investment expectations with available revenue and strengthening efficiency and accountability in delivery. (page 71)

Looking after what we've got

3. **Long-term investment planning:** Introduce legislative requirements for capital-intensive central government agencies to prepare and publish long-term investment and asset management plans aligned with the Government's fiscal strategy. (page 92)
4. **Predictable Government funding signals:** Extend the horizon over which Governments plan their infrastructure funding intentions and communicate these intentions to agencies and the public. (page 92)
5. **Multi-year budgeting:** Adopt multi-year budgeting arrangements that leverage and reinforce high-quality infrastructure planning, delivery and asset management practices. (page 93)
6. **Asset management performance reporting:** Require, through legislation, capital-intensive central government agencies to report on asset information and asset management performance, including progress against their investment and asset management plans. (page 93)

Prioritising the right projects

7. **System-wide assurance:** Establish a consolidated assurance function that provides Ministers with a system-wide view of infrastructure planning, delivery, and asset management performance and risk. (page 103)
8. **Asset management assurance:** Establish an assurance function for capital-intensive central government agencies covering asset management and investment planning activities. (page 103)
9. **Investment readiness assurance:** Strengthen investment assurance by applying a transparent, independent readiness assessment to major government-funded investment proposals. (page 104)
10. **Project information coordination:** Require all infrastructure providers to maintain up-to-date data in the National Infrastructure Pipeline and strengthen arrangements for improving data quality over time. (page 107)

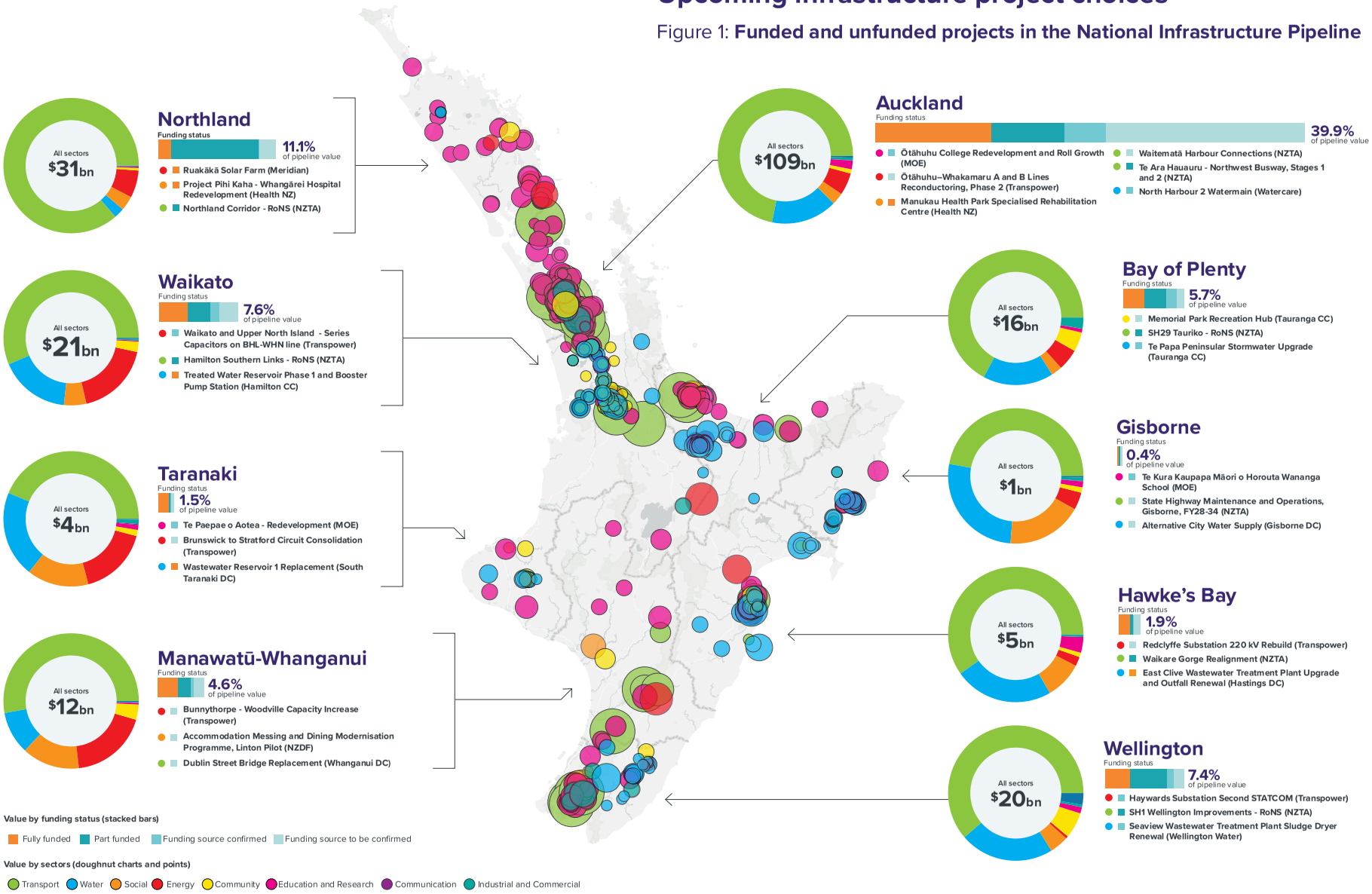


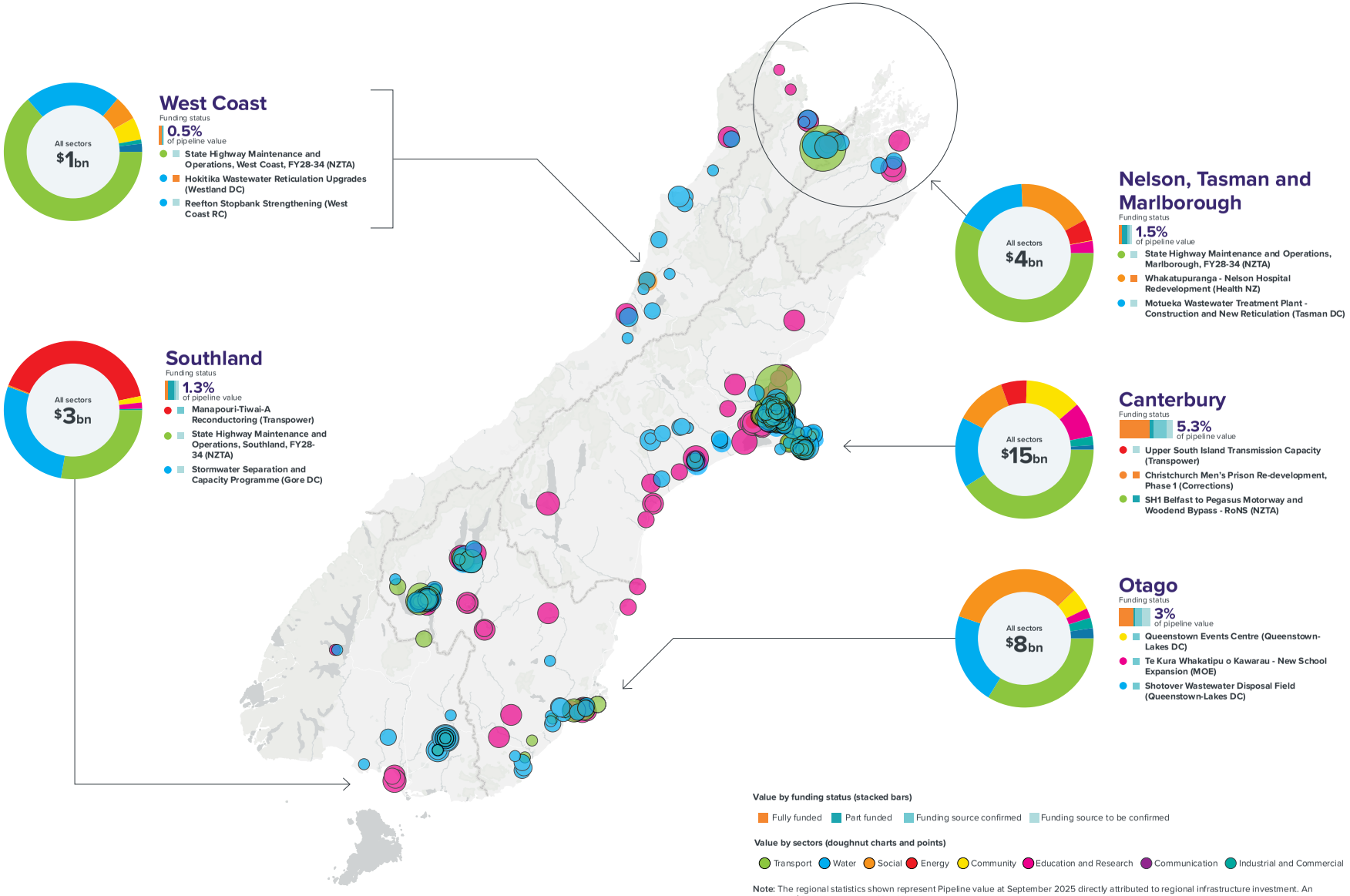
Making it easier to build better

11. **Stable resource management framework:** Commit to maintaining a stable legislative framework for resource management that enables infrastructure development while managing environmental impacts. (page 118)
12. **Integrated spatial planning:** Ensure spatial planning within the resource management system aligns infrastructure investment with land-use planning and regulation. (page 118)
13. **Optimised infrastructure use:** Set land-use policies to enable maximum efficient use of existing and new infrastructure. (page 119)
14. **Accelerated electricity investment:** Establish clear, consistent, and coordinated government policies to accelerate electricity infrastructure investment that supports economic growth and emissions reduction. (page 125)
15. **Coordinated workforce development:** Align workforce development planning and policy with infrastructure investment and asset management plans and the Commission's independent view of long-term needs. (page 130)
16. **Public sector project leadership:** Strengthen public sector project leadership through a consistent, system-wide approach to appointing, developing, and supporting infrastructure leaders. (page 130)

Upcoming infrastructure project choices

Figure 1: **Funded and unfunded projects in the National Infrastructure Pipeline**





Note: The regional statistics shown represent Pipeline value at September 2025 directly attributed to regional infrastructure investment. An additional $23 billion or about 8% of Pipeline value is attributed to programmes across NZ and is not represented. The showcased projects represent a cross-section of initiatives spanning our sectors and regions that are in scoping and planning stages. Only 12.5% of initiatives are submitted with geospatial coordinates and able to be mapped. For updated information, consult the National Infrastructure Pipeline (https://tewaihanga.govt.nz/the-pipeline/search-the-pipeline).

New Zealand Infrastructure Commission, Te Waihanga

1 Finding common ground: The context for long-term infrastructure decisions

Te kimi āhuatanga ōrite: Te horopaki mō ngā whakataunga tūāhanga tauroa

Source: nazar_ab, Getty Images

Summary

- Infrastructure supports our wellbeing, drives productivity and economic growth, and helps achieve broader social and environmental goals. But these benefits come with significant and lasting costs, and investment decisions are often irreversible, so they need to be future-focused and grounded in clear long-term need.
- A range of public and private organisations are involved in providing New Zealand's infrastructure. Public owners tend to balance multiple outcomes (such as health, education and mobility), while private and corporate owners largely focus on achieving commercial returns and maintaining the value and performance of their assets. Effective economic regulation of commercial providers fosters better asset management and investment practices.
- Maintaining and renewing existing assets is our greatest investment challenge. It should account for as much as 60 cents in every $1 of capital spending, reflecting the scale and age of our networks.
- Looking after what we've got is made more challenging by infrastructure-damaging natural hazard events, like earthquakes and extreme weather, and malicious threats like cybersecurity breaches that make infrastructure harder to operate and more costly to insure.
- We also need to keep building new and improved infrastructure in response to our growing population, changing demographics, technological shifts and the need to decarbonise the economy.
- New Zealanders pay for infrastructure in three main ways: user charges, local government rates and central government taxation. Households face tightening affordability constraints as costs rise and the population ages.
- Despite high levels of spending, New Zealand often struggles to get value for money from its infrastructure investments. Underlying drivers of poor value include fragmented planning, regulatory inefficiencies, complex approval processes and suboptimal use of existing assets.
- Fiscal pressures on both central and local government mean future investment will need to be more targeted, efficient and prioritised.

Infrastructure is about services

Infrastructure is a means to an end. We build water pipes to move water to people who need it. We build swales and wetlands to protect our properties against flooding. We build new roads and other networks to service the new subdivisions providing warm, safe housing. It isn't the concrete and steel we value, but what infrastructure allows us to do – how it connects us and improves our lives.

Our economy depends on interdependent infrastructure services. We commute on transport networks built and maintained by generations of New Zealanders. These networks open up land for housing and business, connect communities to jobs and services, and link producers to the ports that connect us to global markets. Roads and rail lines move the goods that fill our supermarket shelves. And those supermarkets, in turn, rely on electricity generated by power stations – many built decades ago – to keep the lights on and food chilled.

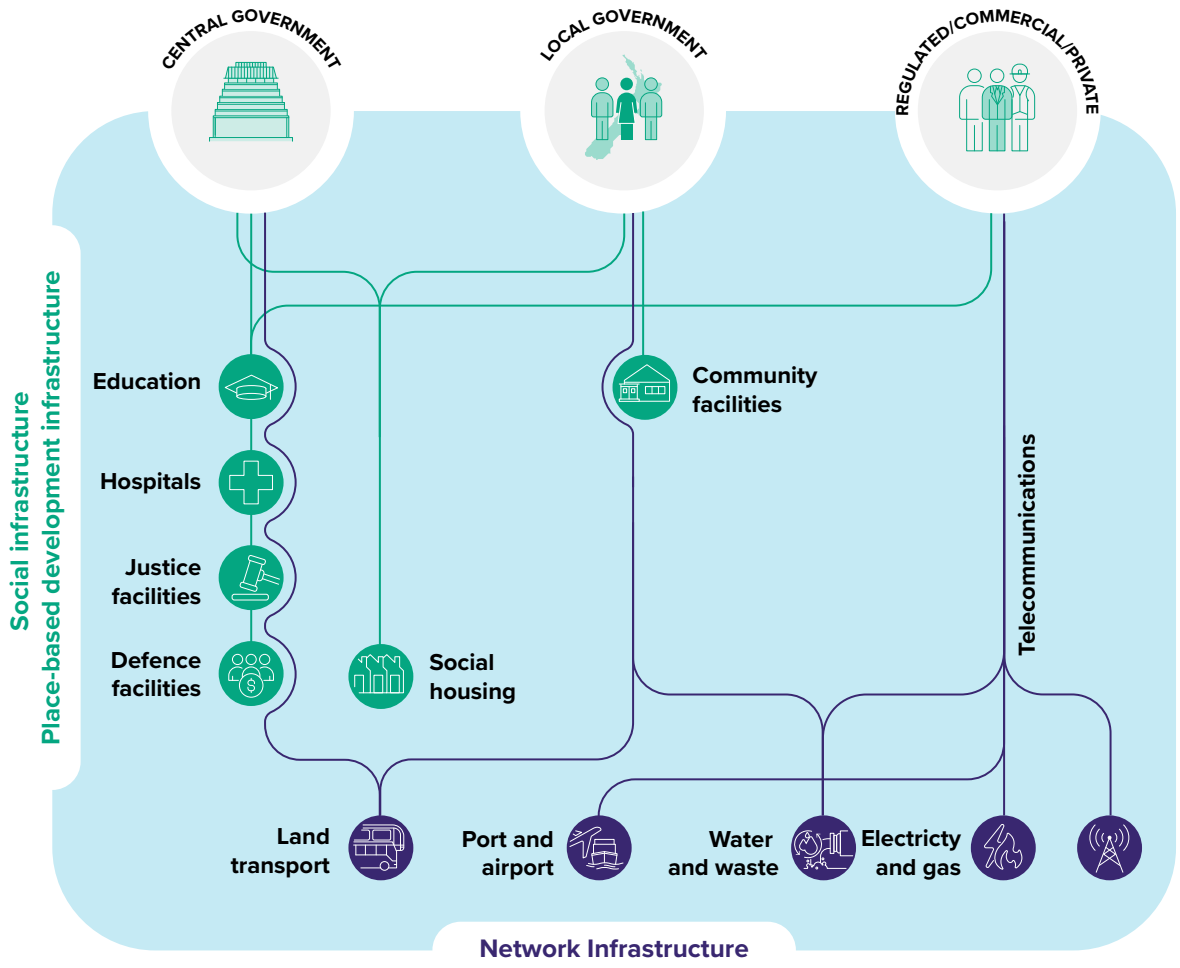
Infrastructure also supports wider social and environmental goals. The 2022 New Zealand Infrastructure Strategy, which this Plan builds on, outlines a vision where our infrastructure drives higher living standards, contributes to a strong economy, enables our culture and society to thrive, and integrates into and supports te taiao, the natural world. The recommendations in the Strategy, Rautaki Hanganga o Aotearoa, remain relevant (see Appendix Two). During the development of this Plan, we heard from New Zealanders about the importance of taking an intergenerational, inclusive approach to planning and delivering new infrastructure.

We rely on many types of infrastructure

There are many types of infrastructure (Figure 2). When we say 'infrastructure', we mean the networks that provide our water and wastewater, internet, electricity and transport choices. The term also includes social infrastructure, like hospitals, schools and courts. 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 and spiritual hubs such as marae. It can also include place-based development infrastructure intended to boost economic activity, like convention centres or business incubators.

Infrastructure includes many layers of connected assets and networks

Figure 2: **Mapping different types of infrastructure**



Source: New Zealand Infrastructure Commission. (2025).

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 like airports and ports. Infrastructure providers have a variety of governance, decision-making processes and funding models. As an autonomous Crown entity, the Commission advises the Government of the day on how the infrastructure system is performing. Other government infrastructure agencies include Crown Infrastructure Delivery, which assists other agencies with project management and delivery, and National Infrastructure Funding and Financing, a Crown-owned company established to connect private capital with public infrastructure projects.

There's a role for everyone. Local government and commercial entities are responsible for over half of New Zealand's infrastructure investment (Figure 3). 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.[6] Iwi and Māori entities are involved in infrastructure as investors, asset owners, and suppliers.

To get it right, we need the public sector to step up. Central government is New Zealand's largest owner and funder of infrastructure. It accounts for 45% of our total stock of infrastructure and almost half of all infrastructure investment each year.[7] Central government also sets the 'rules of the game' for other sectors – including the oversight and governance arrangements that shape how local government and commercial entities operate. For example, the Commerce Commission regulates monopoly providers of commercial infrastructure that is funded from user revenues.

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 part of the overall Public Finance System. But while it sets rules for itself, it doesn't always live by those rules. Around half of all proposals for investment in the last three Budgets did not have complete business cases. Half of all capital-intensive agencies have self-reported that they do not have robust, comprehensive asset registers in place or adequate plans for looking after existing infrastructure.

The Māori-Crown relationship plays an important and evolving role in infrastructure. Te Tiriti o Waitangi/The Treaty of Waitangi (The Treaty) underpins this relationship, which should give effect to trust-based partnerships between government infrastructure providers and iwi. Exercising their role as kaitiaki, iwi are also becoming increasingly active as infrastructure investors and developers.

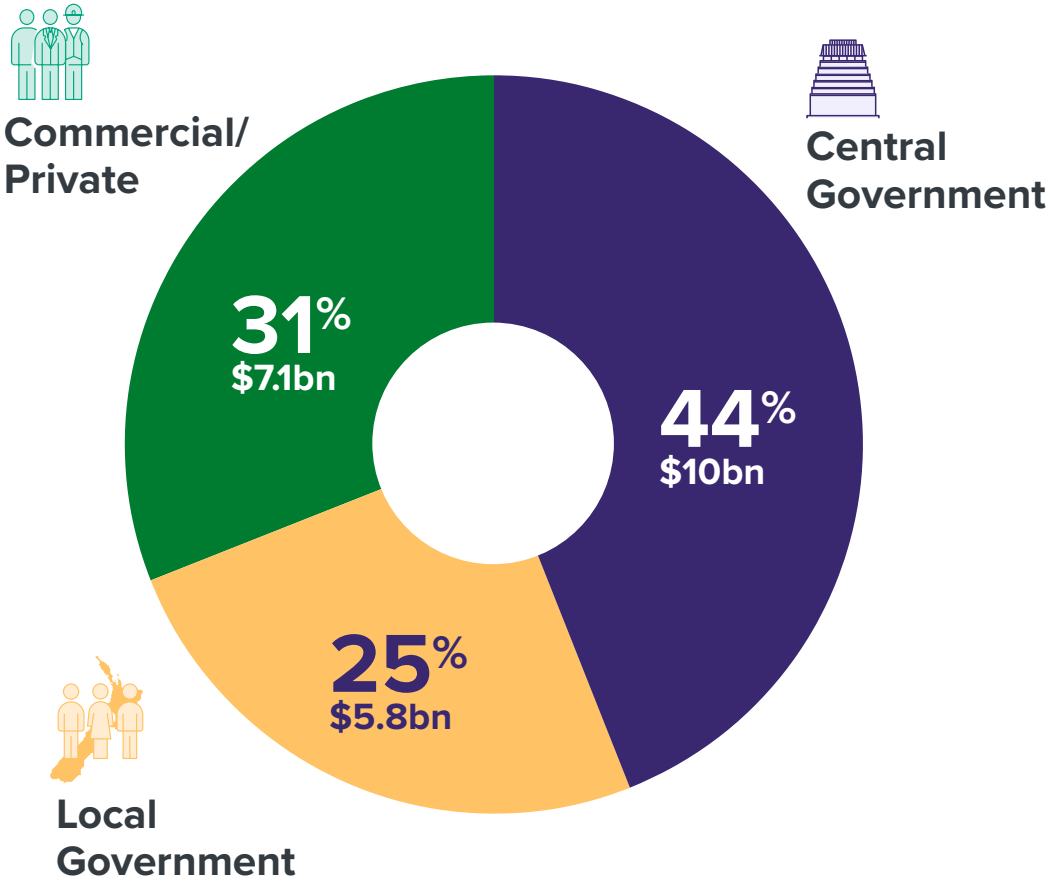
There is ongoing discussion regarding what the Treaty requires for infrastructure projects. But there appears to be consensus between mana whenua groups, the New Zealand courts and infrastructure providers that it obliges both Māori groups and government infrastructure providers to:

- 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. 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 mātauranga (knowledge) as a factor that can add value to projects.

Central government, local government, and the commercial sector play key roles

Figure 3: **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).

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

Infrastructure is not free – someone has to pay for it. There are upfront costs for new assets, as well as ongoing costs to maintain, renew, replace and occasionally decommission things like roads and pipes. We fund infrastructure through three main sources: user charges, local government rates, and central government taxes. Financing (or 'when we pay') can spread out the cost of new assets over time, but one way or another, the cost is ultimately borne by New Zealanders.

New Zealand spends more than most on infrastructure. Over the last 20 years, New Zealand spent an average of 5.8% of GDP per year on infrastructure, putting us towards the upper end of OECD countries.[8] In 2022, we spent almost $5,000 for every person in the country (in 2025 NZD).[9]

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 we get relatively poor 'bang for buck' for our spend, meaning fewer kilometres of road, rail or pipe per dollar than many other countries (Figure 4).[10]

New Zealand has a small population spread over a large and geologically challenging land area. We have a similar population to Greater Sydney, but our 5.3 million people are spread over an area around 21 times larger.[11] Because we don't have as many people in any given area, we can't always afford to build infrastructure to the same standard as more densely populated countries.

But we also make things difficult for ourselves. Compared to other high-income countries, it's costly to build complex public infrastructure projects in New Zealand.[12] We sometimes make premature decisions about projects, leading to cost overruns. We also make it difficult to make the best use of our existing assets. For instance, the lack of time-of-use charging means we build city motorway networks to cater for peak demand; rigid land-use rules prevent apartments being built around rapid transit lines; and the absence of water metering means we're not getting as much value out of our existing infrastructure as we could.

Our regulatory system is complex. We have 1,175 land-use zones across 67 territorial authorities. Japan – which has more than 20 times the population of New Zealand – has 13. We spend $1.3 billion every year just on consenting infrastructure and the cost of managing traffic during construction has surged in recent times.

In future, renewing and maintaining existing assets will be our greatest investment challenge. Many of the buildings and infrastructure networks built in New Zealand after the Second World War are now wearing out. Rebuilding or replacing these assets will take up as much as 60 cents in every dollar of infrastructure investment, reflecting how much infrastructure we already have.[13] Protecting existing assets from natural hazard events and other threats will also drive investment. Climate change will increase the cost and frequency of some natural hazard events, like flooding and extreme weather. Insuring infrastructure against natural hazard events and other risks is also getting more costly, further constraining budget choices.

New capital investment will also be necessary. New Zealand needs to keep building and improving infrastructure in response to its growing and ageing population, economic growth and international trade, technology changes, and the need to provide affordable and reliable electricity to decarbonise the economy. But these trends will impact some sectors differently than others. As our population ages, for instance, we are likely to need relatively more hospitals and healthcare services, and relatively fewer new classrooms in schools.

The future is uncertain. New technologies such as artificial intelligence could fundamentally change how people use infrastructure. We may be forced to borrow more to build back after an earthquake or another unpredictable event. Population and productivity growth could be faster or slower than predicted, affecting both how much new infrastructure we need and how easy it will be to pay for it. Often, these uncertainties add to infrastructure costs, although we can take actions to mitigate some of these costs.

> "We need to fix the leaks, not just keep buying bigger mops."
>
> **Helmut Modlik – Tumu Whakarae, Te Rūnanga o Toa Rangatira**

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

Figure 4: **Public capital investment and investment efficiency scores for selected OECD countries**

Public capital investment as a share of GDP, 2010–2019

Country	Spend	Rank in OECD
New Zealand	5.4%	1
Norway	5.2%	2
Sweden	4.2%	9
Canada	4.1%	12
Finland	4.0%	13
Australia	3.5%	20
Denmark	3.5%	22
United Kingdom	2.8%	28
Iceland	2.7%	29
Ireland	2.2%	37
Costa Rica	2.1%	38

Estimated efficiency scores as at 2019

Rank in OECD	Efficiency score	Country
1	100%	Israel
8	98%	United Kingdom
18	92%	Denmark
26	89%	Sweden
27	89%	Finland
29	88%	Australia
30	87%	Canada
34	84%	Ireland
36	82%	Iceland
37	81%	New Zealand
38	79%	Norway

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. As a result, it is close to, but not the same as, more comprehensive measures of infrastructure investment that we have for New Zealand. **Source:** Adapted from 'Investment gap or efficiency gap? Benchmarking New Zealand's investment in infrastructure'. New Zealand Infrastructure Commission. (2021). Data sourced from the International Monetary Fund.

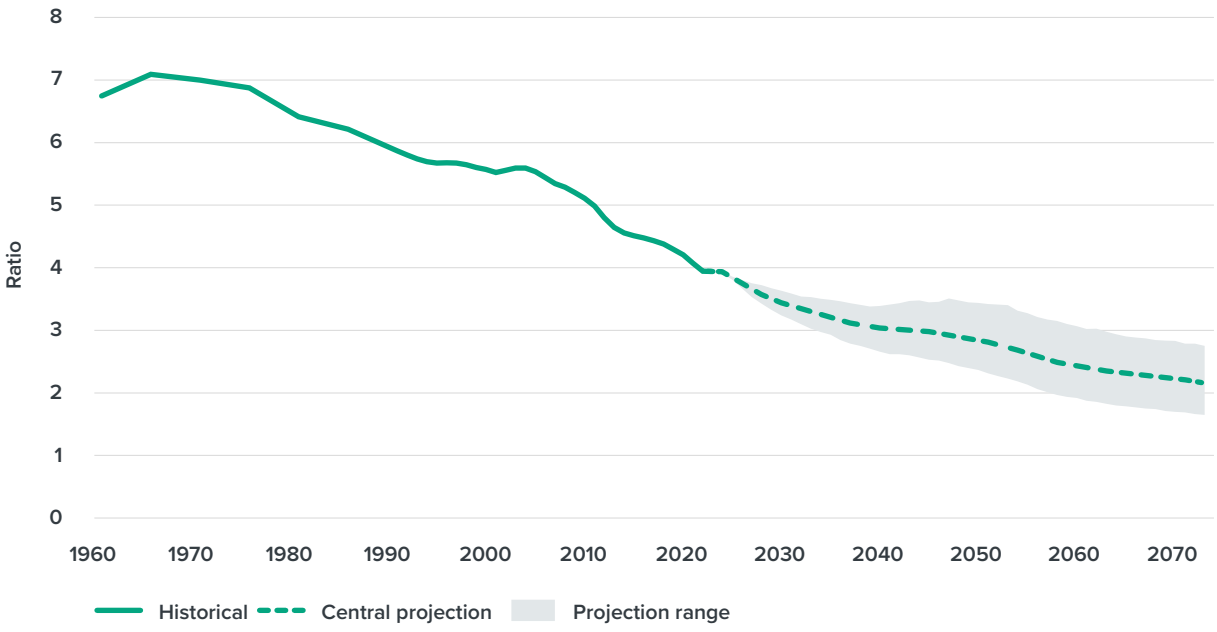
An ageing population and poor productivity mean money's getting tighter

Economic and demographic changes will make it harder to pay for investment in the future. While costs are rising to build and maintain infrastructure, economic growth is forecast to slow and the population is ageing. In the early 1960s, 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 be as low as two-to-one, meaning significantly increased healthcare and other benefit costs and fewer workers to pay the taxes needed to fund it (Figure 5). This trend is more baked in and certain than other future projections, and not unique to New Zealand.

Productivity growth has been slow. Growth in the amount of goods and services produced per worker has slowed in recent decades.[14] New technologies such as artificial intelligence may help to make firms and workers more productive, but if labour productivity growth remains weak in coming decades this will be mirrored by lower income growth. This will make it harder for households to afford to pay the taxes, rates and user charges needed to fund infrastructure investment.

New Zealand's population is ageing

Figure 5: **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).

Central and local government are feeling the squeeze

Central and local government face fiscal pressures. This will make it harder to sustain current per capita investment, let alone spend more. Central government has been running structural budget deficits.[15] If policy settings don't change, the Treasury has warned that net Crown debt per New Zealander will increase sevenfold, from $34,600 today to $237,900 per person by 2065 (in 2025 NZD).[16] Net debt as a share of GDP would go from 42.7% to 200% under this scenario, with interest repayment costs rising accordingly (Figure 6).

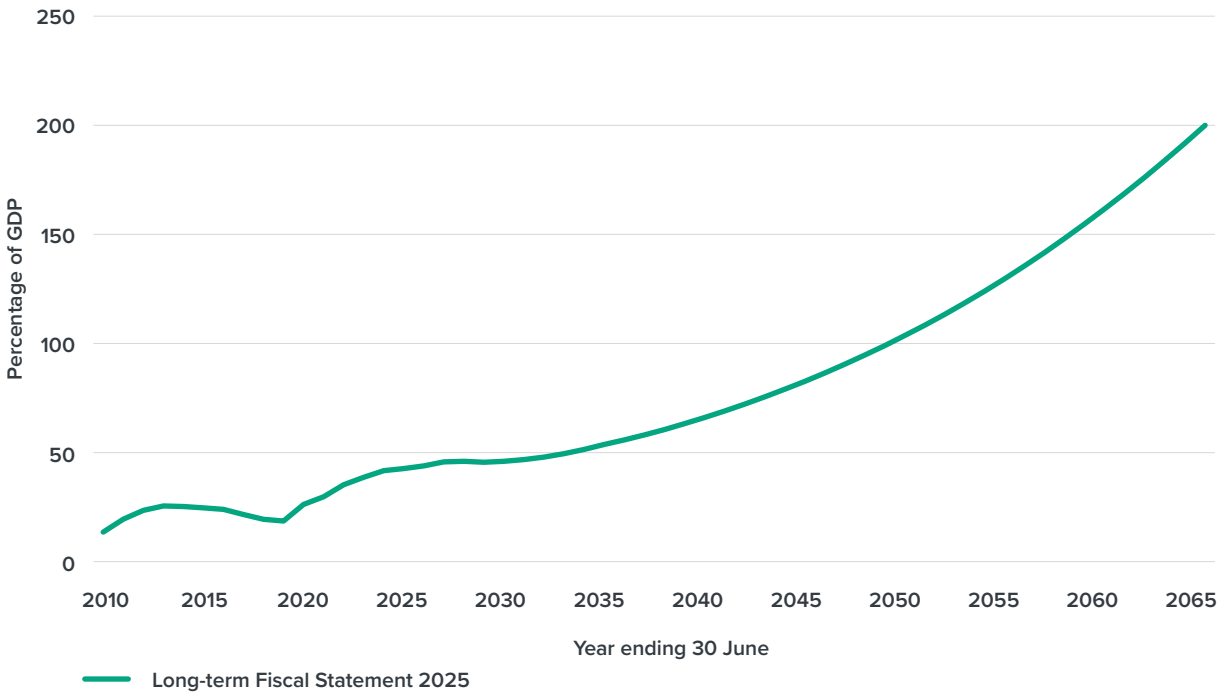
In the short term this has been driven by several shocks. Government spending on these shocks, which include things like the Global Financial Crisis, the Canterbury earthquakes, and the COVID-19 pandemic, has averaged about 10% of GDP per decade.[17] New Zealand's Crown debt to GDP ratio is above the 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 hazard events. In the long term, the fiscal trend is driven by hard-to-reverse changes like the 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 7). International credit rating agencies have downgraded bond ratings for many councils. Although the ratings are still high by global standards, this will manifest in increased borrowing costs and challenges financing further investment.[18]

Infrastructure funding will likely come under pressure. We cannot take it for granted that New Zealand will continue to have one of the highest government infrastructure investment rates 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 development by vastly lifting the bar on project quality, and prioritising the projects that households and businesses will be willing to pay more for.

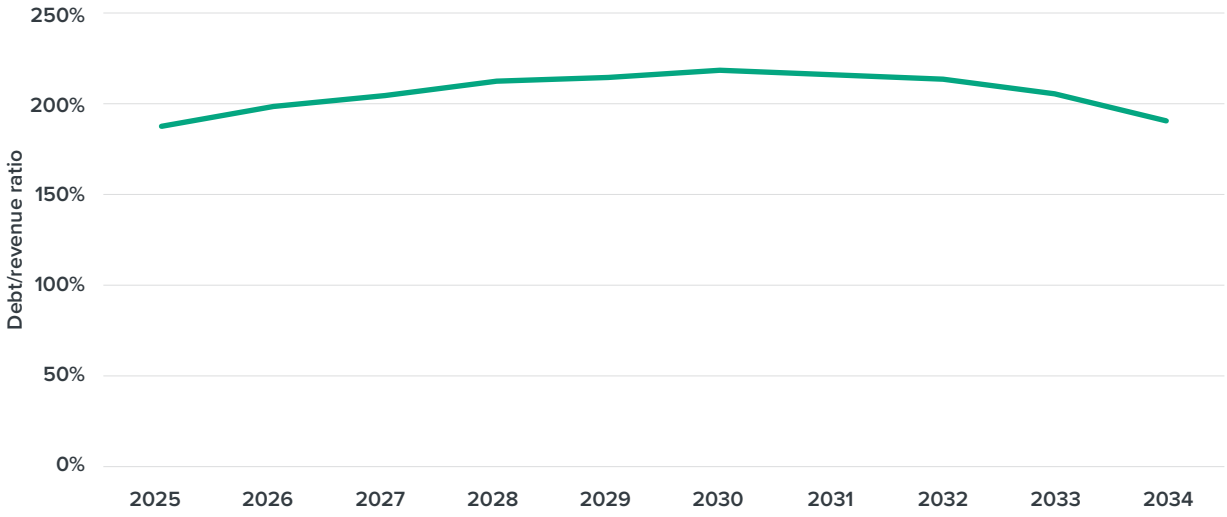
Both central and local government face fiscal constraints

Figure 6: **New Zealand net core Crown debt projection assuming no change to fiscal policy**



Source: From the Treasury's September 2025 'He Tirohanga Mokopuna - Long-term Fiscal Statement' report.

Figure 7: **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).

Households also face affordability constraints

Investment is ultimately constrained by what infrastructure users are willing and able to pay. Understanding community perspectives is essential to ensuring that the right infrastructure is delivered, in the right places, and at the right price. If communities do not value the services an investment would provide, they are unlikely to support the higher costs required to fund it.

Household affordability constraints will bite harder as our population ages. More people will be on fixed incomes, reducing their ability to absorb rising costs. More broadly, New Zealanders are concerned about the cost of living and inflation, which has been a priority issue in recent years. This makes building the social licence for increased charges needed to fund new investment more challenging. Increases in one area, like water or electricity, will make it harder for people to afford increases in other sectors.

There are mixed views about paying more to increase infrastructure spending. While we are not always happy with the quality of our existing infrastructure, several representative surveys over the past decade found that most New Zealanders do not support increased spending on public infrastructure if it required them to pay higher taxes or charges to fund it (Figure 8).[19]

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. New Zealanders appear to prioritise ensuring that the money already being spent on infrastructure is being spent well, and that the charges they pay are transparent and fair.

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

Figure 8: **Public preferences for paying more for infrastructure**

Should we increase spending to improve infrastructure in New Zealand, even if that means higher taxes or costs for consumers?

40%

Strongly agree/ tend to agree

32%

Neither agree nor disagree

28%

Strongly disagree/ tend to disagree

Note: Findings are based on the Global Infrastructure Index (Ipsos & GIIA, 2024), which was one of the surveys analysed by the Commission. It 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).

There's broad public support for improvement

The Commission has a legislative mandate to build broad public support for the Plan and its approach, which aims to enhance the wellbeing of New Zealanders. To test this, we sought feedback on the themes and recommendations in the draft Plan. More than 2,700 responses were received from individuals and organisations, including a representative online survey of 1,001 New Zealanders, 1,557 general public responses to an online survey, and 122 written submissions.

There was broad support for the Plan's direction. Respondents emphasised the need for long-term investment planning, better coordination between central and local government, improved accountability and transparency, stronger asset management, and a focus on affordability and efficiency. Many respondents highlighted the importance of climate resilience, equitable and sustainable funding, and prioritising both environmental and social outcomes alongside basic infrastructure.

Taking a long-term, needs-based approach was seen as critical, particularly to reduce investment instability and policy shifts. Some respondents linked workforce retention to the predictability of the infrastructure pipeline, arguing that project cancellations undermine confidence and drive talent offshore. Others called for cross-party consensus on evidence-based investment decisions and on nationally important projects.

There was a strong alignment with the recommendations in the draft Plan. Even on more debated issues – such as closing the transport funding gap and moving towards a user-pays approach to network infrastructure – most respondents were supportive. Many agreed that direct beneficiaries should contribute more but cautioned against funding mechanisms that were overly rigid or likely to hit lower-income households hardest. To guard against this, there was some support for pricing models that charge heavier users more and targeted protections for people less able to pay.

The Commission also engaged with some iwi and Māori organisations on the draft Plan and on its broader work programme. A key message was the importance of Te Tiriti o Waitangi and the need to embed Treaty settlement obligations and iwi perspectives into national policy and regulation relating to infrastructure. Iwi and Māori participants emphasised the need for genuine, ongoing partnership and expressed concern that engagement around infrastructure projects can be short term and transactional.

Iwi and Māori are increasingly taking on a strategic role in infrastructure investment and long-term whenua (land) development. Māori groups have sought to be involved in regional spatial planning in their rohe, or tribal lands, and for these processes to take an intergenerational approach. Protecting te taiao (the natural environment) and the need to better look after existing infrastructure were also strong themes in the feedback.

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 our spend. We need to understand the condition of the infrastructure we already have and what's needed to keep it working. We need to plan, understand and account for the needs of current and future generations. We need project leaders who can successfully plan and design projects. We need to be able to protect land for future infrastructure projects through spatial planning and consent infrastructure projects efficiently. We need clients, construction firms and the wider workforce to work together to drive productivity. We need pricing that optimises how we build and use infrastructure.

A consistent investment approach is important, even if projects change over time. A 'stop-start' approach to infrastructure planning can undermine market confidence and add costs for ongoing investment programmes and large projects. We need to prevent policy churn and market volatility by making sure our investments are targeting the right problems with solutions that are affordable and deliverable. This means prioritising projects with the greatest benefits.

Infrastructure lasts for generations. Every new project represents an ongoing future commitment. Getting it right means leaving a positive legacy for future generations. Getting it wrong means leaving our children and grandchildren with assets that aren't worth the debt repayments. If that happens, it will cut into their ability to fund their own priorities.

The Plan builds on a vision

The Commission delivered the New Zealand Infrastructure Strategy (Rautaki Hanganga o Aotearoa) in 2022. The Strategy outlines a vision for New Zealand where infrastructure lays a foundation for people, places and businesses to thrive for generations. Progress has already been made against some of the 68 recommendations in the Strategy (see Appendix Two), including in the areas of critical infrastructure resilience and demand management.[20]

The National Infrastructure Plan builds upon the Commission's ongoing work. Since delivering the Strategy, the Commission has continued to refine the National Infrastructure Pipeline, which now captures data on nearly 12,000 initiatives – a greater share of national activity than many comparable overseas tools. We developed the Infrastructure Priorities Programme to provide a standardised, independent tool for assessing project readiness. And we continued to develop our evidence base, publishing papers on a range of topics from pricing and asset management to a deep dive looking at 150 years of infrastructure investment in New Zealand.

In 2024, the Minister for Infrastructure asked the Commission to develop this Plan. We were asked three questions: What infrastructure will New Zealand need, and what should we spend over the next 30 years? What investment is planned over the next 10 years? And where are the gaps between what we need and what is currently planned – and how can they be closed?

The Plan lays out an approach for investment that can meet New Zealand's long-term needs. In it, we outline what a sustainable level and mix of infrastructure investment would look like over the next 30 years based on known demand drivers and grounded by what New Zealand has historically been willing to invest. We have worked with infrastructure providers to refine the Pipeline, allowing us to contrast our Forward Guidance with what's being planned in the next decade to get a sense of any 'gaps'.

Infrastructure must serve different needs in different places, and trade-offs are unavoidable. Spending heavily in one area limits what can be invested elsewhere. Even so, there is broad agreement on core priorities such as maintaining and renewing what we already have, strengthening resilience to natural hazards, and investing in our hospital system.

Not every major project will attract consensus, but that need not prevent progress. Political contestability is normal, and priorities will shift over time. What matters is staying focused on the fundamentals – looking after existing assets, delivering projects well, planning efficiently, and being transparent about costs and outcomes.

The Strategy established the overarching vision for where we need to go. With its 16 clear system-level recommendations and 'key actions' to address 10 specific priority areas, the Plan provides the pathway to get there.

2 Lots of projects, not enough money: New Zealand's infrastructure ambitions

He huhua ngā kaupapa, he iti rawa te moni: Ngā whāinga tūāhanga awhero nui o Aotearoa

Source: GordonImages, Getty Images

Summary

- The National Infrastructure Pipeline (the Pipeline) is New Zealand's national dataset of infrastructure initiatives, capturing information on projects across the planning and delivery stages.
- The Pipeline, which is updated quarterly, has tracked 27,600 initiatives across their lifecycles, and grown to include 129 contributing organisations (including all major central government agencies, almost all councils, and many private providers).
- As of September 2025, the Pipeline – which assists with project coordination and sequencing – contained nearly 12,000 initiatives worth a combined $275 billion across every sector and region.
- Most initiatives are small: 96% of projects have an expected cost of under $50 million, and 98% are under $100 million. These projects account for 22% of the total value of the Pipeline, while 44 megaprojects with expected costs of more than $1 billion make up 52% of the total value.
- The Pipeline illustrates the magnitude of the choices in front of us and assists decision-makers to consider options for prioritising and sequencing investment options. More than two-thirds of initiatives by value ($193 billion out of $275 billion) are not yet fully funded, and many of these are large transport megaprojects.

The National Infrastructure Pipeline provides a system view of upcoming initiatives

Since 2020, the Commission has worked with public and private infrastructure providers to build a picture of infrastructure investment activity and lift transparency around upcoming projects. The National Infrastructure Pipeline has grown from 21 contributing organisations to 129, including all major central government agencies, almost all councils, and a significant share of private providers. As of September 2025, the Pipeline included information on nearly 12,000 initiatives in delivery and planning with a combined value of $275 billion. This makes it one of the most comprehensive project pipeline tools in the OECD, covering a greater share of activity in the market than similar tools in the UK, Ireland, and Australia.

The Pipeline shows infrastructure planning activity happening across the system, bringing together a forward view that spans every sector and region. By consolidating this information in one place, it enables the Government, infrastructure providers, the construction market, and investors to see what's coming, coordinate planning and activity, build the right capability, and make better long-term choices. The Pipeline highlights the complexity of infrastructure planning and underscores the challenge of allocating limited resources efficiently.

Project funding commitments vary depending on project scale and the planning horizon. While discussion often centres on a handful of megaprojects worth more than $1 billion, most projects are smaller. Of the 12,000 initiatives in the Pipeline, 96% have an expected cost of less than $50 million, and 98% have an expected cost of less than $100 million. Together, these groups account for 22% of the total value of the Pipeline. At the other end of the scale, 44 megaprojects make up 52% of the total value (Figure 9). The smaller initiatives are less complex, have shorter planning horizons, and represent a higher proportion of committed funding by value than their larger and more complex counterparts.

Information in the Pipeline is constantly evolving and improving. The Pipeline has tracked 27,600 initiatives across their lifecycles. Project information is updated quarterly, offering a timely picture of activity to inform decisions and drive coordination across the system. Most change is observed with projects in the planning stages and ahead of funding commitments, which is the opportune time to consider how projects can be sequenced to improve delivery outcomes. As participation has grown and the capability of contributors has improved, the Pipeline has evolved to capture richer information on things like procurement and construction timeframes.

Pipeline data highlights trade-offs in funding decisions

Smaller initiatives provide a steady flow of work for the construction sector. These 'bread and butter' projects with expected costs under $100 million, like building a new classroom, upgrading an intersection or repairing a stopbank, are more likely to have confirmed funding sources and can often be delivered quickly. Their repeatable nature supports ongoing work programmes that build capability and productivity across the sector.

Many large projects in the Pipeline are not fully funded. Over two-thirds of the total value of projects in the Pipeline – $193 billion out of $275 billion – do not yet have full funding commitments. Most of this value comes from a small number of central government-led transport megaprojects worth more than $1 billion. Because of their scale, decisions about whether and when to fund them will shape what else we can afford to build. Even over multiple decades, it won't be possible to build them all without significant repercussions.

Maintenance and renewal programmes remain under-represented. Only about 30% of the total value of the Pipeline relates to maintenance and renewal initiatives – lower than what we would expect given the size and age of New Zealand's existing assets. This highlights that we may not be seeing all investment needs that require funding. This likely reflects how infrastructure providers plan and budget for maintenance and renewals.

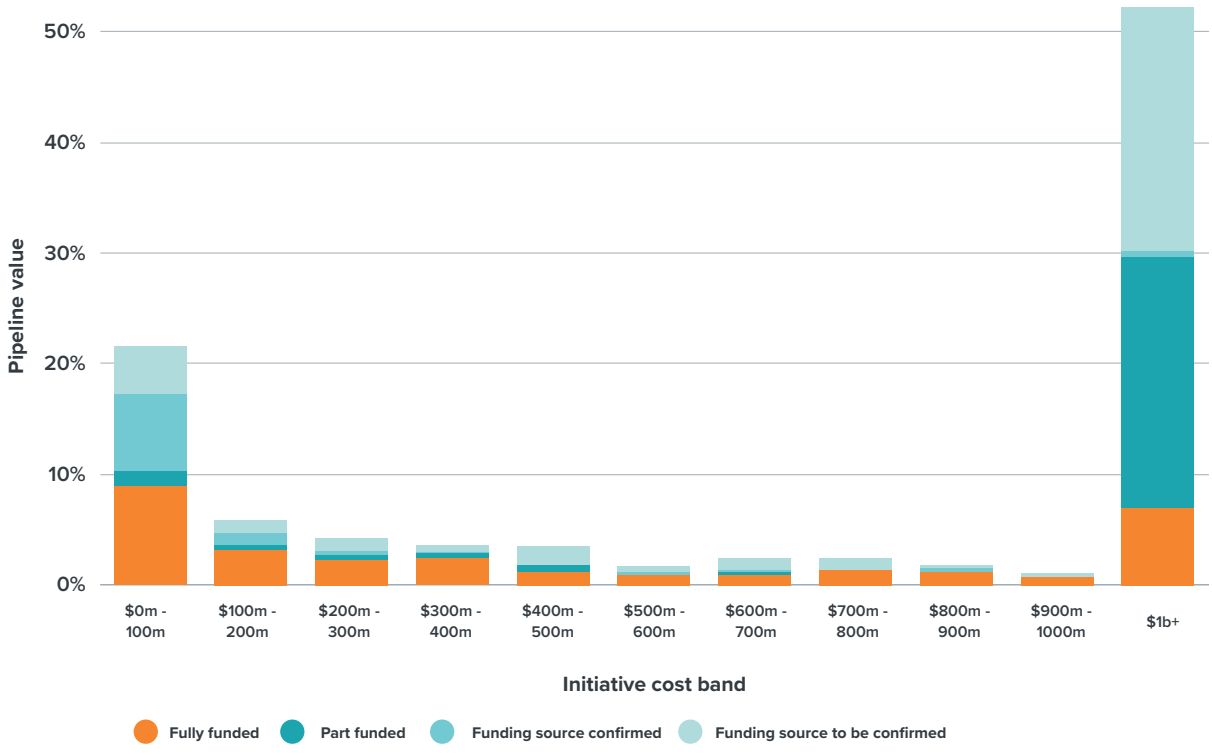
We can't pay for it all – we will have to choose

Long-term infrastructure planning requires more than lists of projects. Central and local government providers are looking ahead, but the full set of ambitions may not be affordable or deliverable without stronger prioritisation. Information in the Pipeline reinforces the need for prioritisation, coordination, and sequencing across providers and regions. Decision-makers need to take a wider system view to help balance trade-offs and make disciplined investment choices.

The National Infrastructure Plan aims to fix the front-end problems that prevent reliable long-term planning. This includes establishing a clearer view of funding requirements, embedding strong asset management and investment planning at the agency level, applying consistent assurance to prioritise the right projects, and clarifying how central government can support better outcomes across the system. Over time, better front-end planning can shift the balance in the Pipeline – leading to fewer speculative projects, and more well-prepared investments with clear funding paths.

Larger initiatives account for a significant proportion of projected spending but are largely unfunded

Figure 9: **Distribution of initiatives in the Pipeline by expected project cost, as of September 2025**

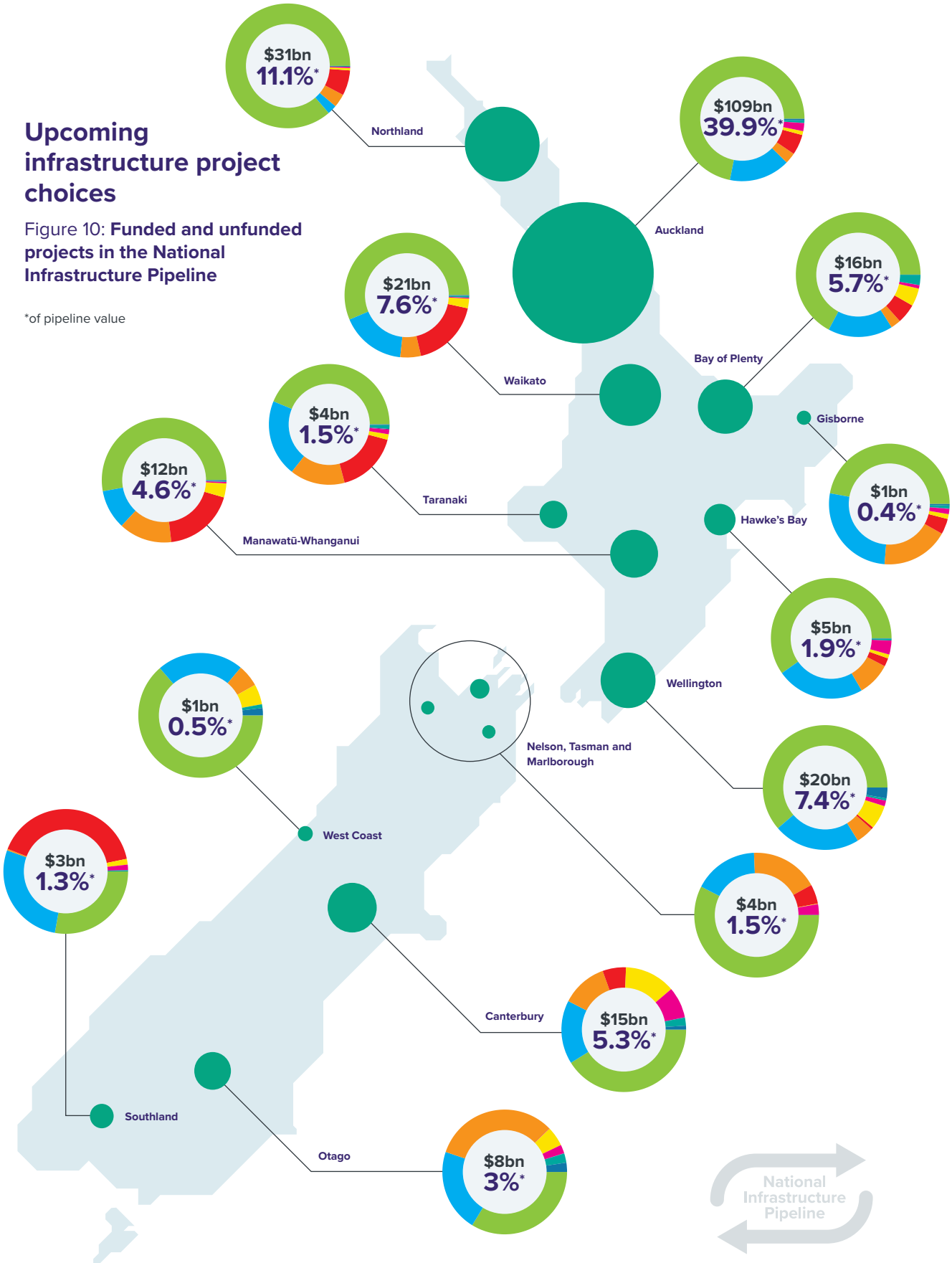


Source: National Infrastructure Pipeline, September 2025. New Zealand Infrastructure Commission. (2025).

Upcoming infrastructure project choices

Figure 10: **Funded and unfunded projects in the National Infrastructure Pipeline**

*of pipeline value



Value by sector (doughnut charts and points)

Transport | Water | Social | Energy | Community | Education and Research | Communication | Industrial and Commercial

Source: Jodie Gibson, Truestock

3 Planning what we can afford: Forward Guidance for infrastructure investment

Te whakamahere i tērā ka taea e te pūkoro: He Aratohu Angamua mō te haumitanga tūāhanga

Source: Chellyar, Getty Images

Summary

- New Zealand's infrastructure measures up well compared to countries with similarly small, dispersed populations, but we often achieve poorer value for money relative to how much we spend.
- The Forward Guidance produced by the Commission suggests infrastructure spending will increase from just over $20 billion a year to more than $40 billion by the 2050s, averaging around 6% of GDP annually.
- A growing share of spending will need to go towards renewing and maintaining existing assets as they wear out.
- Trends such as the ageing population and decarbonisation will drive proportionately higher investment in health and energy, while land transport and education spending is expected to moderate as demand stabilises.
- Funding network infrastructure like water and transport on a user-pays basis will enable more resources to be invested in social infrastructure such as hospitals and schools.
- Pricing should recover the full lifecycle costs of network infrastructure, guide efficient use and investment and distribute benefits fairly.
- The land transport funding system is unsustainable, with the most recent three-year plan requiring $12.8 billion of Crown loans and grants that could have gone to other priority areas, reflecting investment ambitions that significantly exceed user revenues.
- The system should return to a model where the cost of maintaining, renewing and enhancing the existing network is predominantly met by users. Coupled with strong independent oversight, transport providers should be given more independence to make investment choices and align investment with actual demand.
- Stronger assurance, value-for-money tests, and prioritisation of renewals are needed to improve efficiency and close the long-term transport funding gap.
- Overall household infrastructure costs should remain affordable under the Forward Guidance, though the mix of charges will change over time.

3.1. Aligning investment with long-term needs

Te tīaroaro i te haumitanga ki ngā matea tauroa

Context

New Zealand already has a lot of infrastructure. There have been many boom-and-bust cycles, but over the past 150 years we've almost always invested between 5% and 7% of GDP annually to build the assets that underpin our way of life.

New Zealanders benefit from these investments every day. A large proportion of our electricity generation is renewable thanks to hydroelectric power stations. The roads built by our ancestors allow us to travel and move goods to some of the most remote parts of the country. Our towns and cities have a built legacy of water networks, schools, hospitals and much more.

International benchmarking suggests the infrastructure we have measures up well. The Commission compared how much New Zealand has invested in different infrastructure sectors relative to other countries with challenging terrain and small, dispersed populations. We also looked at how the quality and quantity of our assets compares, and how well they get used.

New Zealand may have an investment efficiency issue, but we see no signs of across-the-board deficits in the physical amount of infrastructure we have. New Zealand has roughly as much electricity generation, water and wastewater pipes and roads per person as our peer countries (Figure 11).[21,22] In some cases, like fixed-line broadband networks and school infrastructure, we have more or better-maintained infrastructure. Conversely, more people die on our roads, our households are among the highest users of water in the OECD, and we may have gaps in mobile broadband and railway track maintenance relative to our peers.

How New Zealand's infrastructure measures up

Figure 11: **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, ESP	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

Note: 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).

The challenge is to keep our existing infrastructure going while also investing in new assets to meet demand. According to our analysis of International Monetary Fund figures, New Zealand invested more on public infrastructure as a proportion of GDP than any other OECD country between 2010 and 2019.[23] Future fiscal constraints and megatrends like an ageing population and slowing productivity growth will mean maintaining this infrastructure, and building more infrastructure, could strain affordability if we don't plan well.

The Commission's Forward Guidance sets out what an affordable level and mix of infrastructure investment could look like over the next 30 years. It provides an independent view of a sustainable investment path – much as central bank forecasts guide expectations about future interest rates. This makes it most useful for helping to prioritise funding between sectors over the medium to long term. Our Guidance should inform fiscal strategy, asset management and investment planning, spatial planning, and workforce development policy. Rather than predicting exact spending, it offers a strategic benchmark to show what is affordable, when pressures may emerge, and how different choices shape the investment outlook.

We produced our Forward Guidance based on several drivers of demand for infrastructure. The projections are based on how we've invested in the past, how fast existing infrastructure assets are wearing out, how rapidly network demand might grow given national-level population and economic projections, what costs we can expect to incur from natural hazard events, and how fast construction prices may rise based on historical trends.

Our Forward Guidance is achievable. It illustrates what an affordable level of future investment looks like across different sectors, allowing decision-makers to use it as a benchmark against which to assess current agency plans. This helps keep value for money front of mind, ensuring investment is directed toward the most impactful and cost-effective projects rather than exhaustively planning initiatives we may never be able to afford. We consider the approach outlined in our Forward Guidance to be affordable, as the forecast investment levels align with what New Zealanders have historically been willing to spend on infrastructure.

Source: Chellyar, Getty Images

New Zealand Infrastructure Commission, Te Waihanga

Understanding Forward Guidance

Figure 12: **The eight drivers of demand we considered to produce our Forward Guidance, as well as specific examples**

Investing in existing assets

Maintenance and renewal of existing infrastructure

For every $1 New Zealand invested in new/improved infrastructure in recent decades, 60 cents of existing assets wore out.

Resilience to natural hazards

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

Central government spent at least $33 billion responding to and addressing natural hazards between 2010 and 2025, and many public assets are uninsured.

Investing in new or improved assets

Population growth and demographic change

NZ's population is forecast to grow from 5.3 million to between 6 million and 7.3 million by mid century.

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.

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 30%.

Decarbonising our economy

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

Technology change

We rolled out Ultra-Fast Broadband to 1.8 million homes and business in just over a decade.

Other cost drivers

Construction price inflation

Infrastructure construction prices have risen 50% faster than general inflation over the last 25 years.

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

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.

Figure compiled by the NZ Infrastructure Commission. Endnotes for '**Maintenance and renewals of existing infrastructure**'[24], '**Resilience to natural hazards**'[25,26], '**Population growth and demographic change**'[27,28,29], '**Economic development and changing standards**'[30], '**Technology change**'[31], '**Decarbonising our economy**'[32], '**Construction price inflation**'[33,34], and '**Shortage of existing infrastructure**'[35].

Strategic direction

Infrastructure spending grows within a clear and affordable long-term fiscal strategy

Demand for infrastructure investment will increase over the next three decades (Figure 13). To meet demand, annual capital investment will need to increase from just over $20 billion today to more than $40 billion by the 2050s (in 2025 NZD terms). This includes all types of infrastructure investment, regardless of ownership arrangements. We provide a sectoral breakdown below (Table 2).

While the total spend on infrastructure will increase, the 'share of our wallet' spent on investment is expected to remain stable. Our analysis indicates infrastructure investment will need to average around 6% of GDP annually over the next 30 years. Spending could be slightly higher or lower, depending on what scenario happens. The Commission expects this to reasonably occur within the range of 5% to 7% of GDP (Figure 14).[36] This is within the bounds of what New Zealand has been willing to invest in the past, so we consider our Forward Guidance to be realistic and sustainable.

The balance of investment will need to shift. Rising investment demand reflects the need to renew and replace existing infrastructure, as well as building new or improved infrastructure in response to population growth and demographic changes, economic growth and decarbonisation needs. Spending will also be driven by the need to make existing infrastructure more resilient to natural hazard events. It is already the single biggest driver of investment, but we expect spending on renewals to become relatively more important as existing infrastructure wears out and demand drivers for new infrastructure, such as population growth, slow overall across the country.

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 (Box 1). Significant technological advances have created these opportunities in the past, as well as demand for entirely new classes of infrastructure. Examples include the roll out of Ultra-Fast Broadband or the electrification of New Zealand in the 1920s.

The Government, advised by the Treasury, should use our Forward Guidance to inform how it sets capital allowances for new infrastructure spending. This process, which happens through the annual Budget cycle, is one of the key levers for Governments to achieve their fiscal strategy – a plan for managing public finances, including debt levels. Our Forward Guidance provides a benchmark the Government can use to inform its intended capital spending levels and to prioritise infrastructure spending between sectors, subject to top-down constraints like the need to pay down debt. The Commission will provide updated versions of our projections to the Treasury, as the chief financial advisor to the Government.

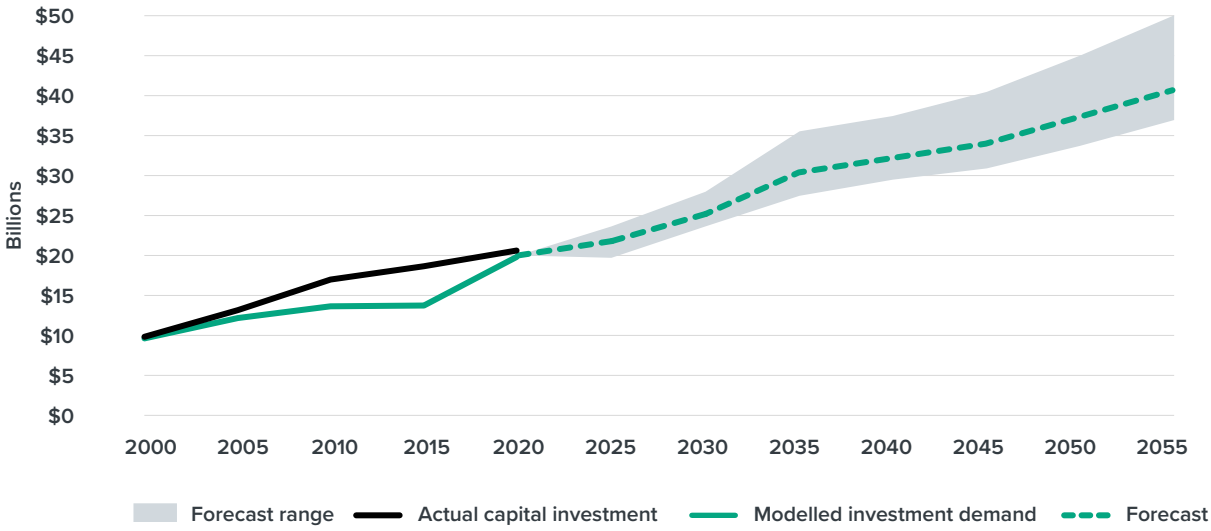
Infrastructure investment is expected to rise over the next 30 years

Figure 13: **Historical and forecast demand for infrastructure investment, in 2025 NZD**

Panel A: Total infrastructure capital investment demand

Total Infrastructure Investment

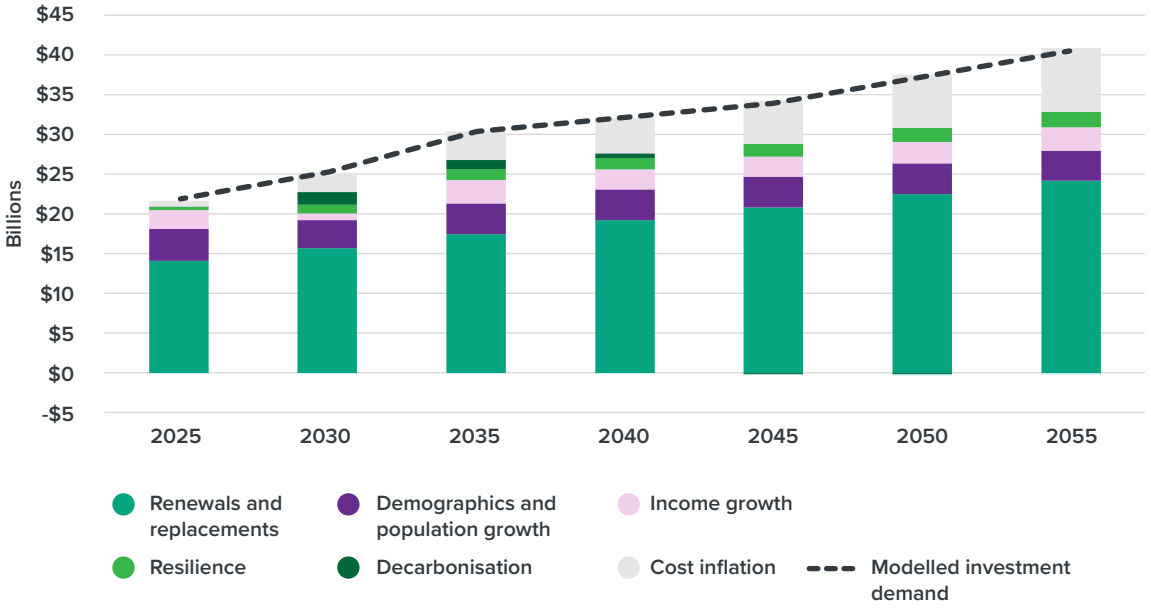
Average annual investment required, in 2025 NZD



Panel B: Composition of capital investment demand

Total Investment Forecast

Modelled average annual investment required, 2025–2055



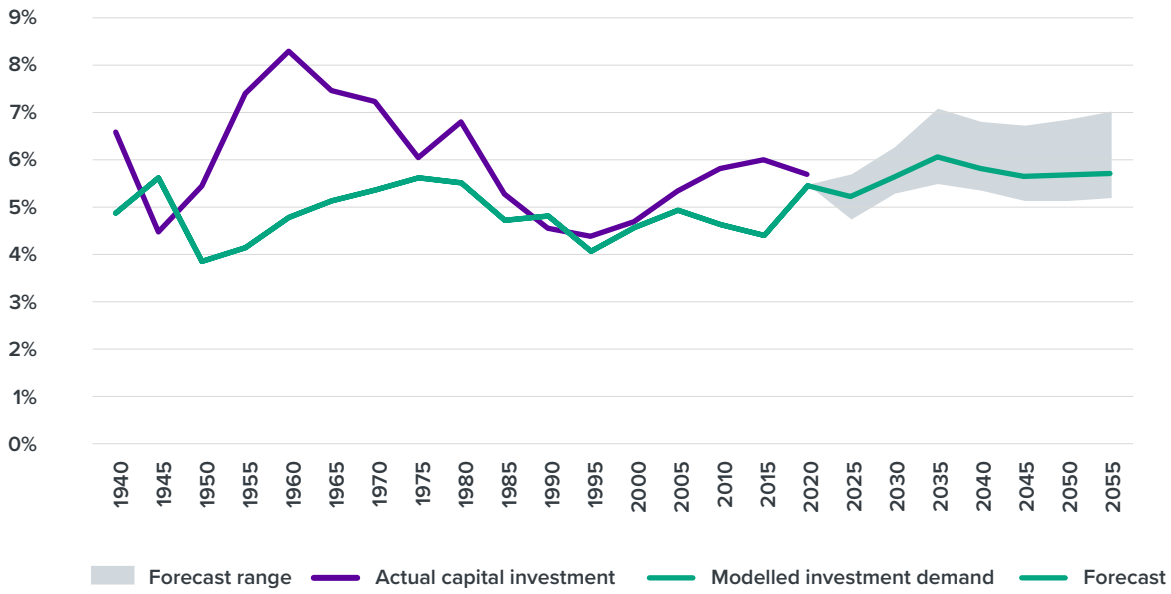
Note: These figures include capital investment but exclude operational spending on maintenance. **Source:** 'Forward Guidance on Infrastructure Investment'. New Zealand Infrastructure Commission. (2026).

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

Figure 14: **Historical and forecast demand for infrastructure investment, as a share of GDP**

Total Infrastructure Investment

Actual and modelled investment, as a share of GDP



Source: 'Forward Guidance on Infrastructure Investment'. New Zealand Infrastructure Commission. (2026).

Box 1

How infrastructure can boost economic growth

Infrastructure investment is important for sustaining and expanding economic activity. Networks of pipes, roads, ports and other assets move raw materials to factories and finished goods to markets, forming the backbone of production. Beyond supporting industry, infrastructure enables housing growth, supports job creation, and enhances wellbeing by keeping people connected, mobile, and entertained. Most importantly, high-quality infrastructure can underpin future economic growth by improving productivity – where we get better at making and doing things with the resources we have.

Infrastructure can lead to productivity growth in several ways. It:

- **Helps our cities grow and expand.** Bigger, denser cities are more productive because they bring people and businesses closer together. Density allows for more efficient use of infrastructure, for businesses to specialise, and for new ideas and innovations to spread more easily.
- **Speeds up the adoption of new technologies.** Many new technologies can only be adopted when the enabling infrastructure is in place. For example, access to Ultra-Fast Broadband has allowed businesses and people to adopt new ways of working that depend on faster internet access.
- **Helps high productivity industries and firms grow.** Overall productivity can be increased by shifting resources to higher productivity industries and firms. As a small island nation, we need to enable our industries and firms to compete for market share internationally.

Where and when should we make these investments?

Investing in infrastructure can support productivity and economic growth, but it isn't a panacea. Other investments – including education, research and development, and business investment – can be just as, if not more, impactful. This makes it important to recognise the trade-offs involved when using infrastructure for economic growth and properly assess projects to ensure their impact.

New infrastructure investment can lift productivity growth when it alleviates a bottleneck where demand exceeds supply. Infrastructure can equally act as a drag on growth if the benefits we get from it are outweighed by high debt, maintenance and other costs, or if public investment crowds out private investment.[37] This makes it essential to choose high-quality projects.

Bottlenecks are most likely to occur under two conditions: significant technological innovation that drives demand for entirely new infrastructure networks or when demographic shifts – such as rapid population growth and urbanisation – happen faster than our existing infrastructure can keep up. When this happens, new and improved assets can unlock latent demand and enable new activity.[38]

This occurred when New Zealand electrified in the 1920s. Electricity was a growing technological innovation, and the benefits were large and clear. It meant shifting from candles, coal stoves and iceboxes to electric lights and refrigerators. People were more than willing to pay for those transformational benefits.

To finance the development of these distribution networks, local power boards issued £12.8 million in loans that were then paid back by electricity users. This is equal to NZD$1.7 billion in 2024 dollars, or around $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 15). This would be the equivalent of current Auckland residents voting overwhelmingly for a $2.9 billion piece of infrastructure, paid for solely by residents.

Figure 15: **Results of electricity power board referendums in selected areas, 1918–1931**

Auckland
200,000
population
$1,450
Average loan value per resident
89%
voting in favour

Southland
68,000
population
$3,030
Average loan value per resident
94%
voting in favour

Tauranga
12,000
population
$1,490
Average loan value per resident
74%
voting in favour

All power boards
994,000
population
$1,610
Average loan value per resident
85%
voting in favour

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

Where are the bottlenecks today?

New Zealand has existing, mature infrastructure networks. Consistent with our Forward Guidance, network growth should generally be balanced with demand growth and the priority should be on cost-effectively maintaining and renewing existing assets. This will support economic growth by ensuring that infrastructure is available where and when it's needed, without burdening firms and workers with excess costs. Sometimes, specific investments into areas such as ports, electricity supply, or urban water and transport infrastructure are needed to support growing sectors of the economy.

Governments also have options for more precise interventions. They can:

- **Keep an eye out for the next dominant telecommunications technology.** Telecommunications is an area of persistent technological change, with new infrastructure networks making past networks redundant. The key focus in telecommunications will be monitoring what the next dominant network is likely to be and removing barriers to its rapid adoption.
- **Consider small investments to unlock growth in high-productivity industries.** For example, rapid advancements in rocket technology mean that remote parts of New Zealand's East Coast can now support an emerging space and advanced aviation industry. Infrastructure investments in Mahia and Kaitorete alleviated access bottlenecks and allowed the industry to grow. Importantly, these investments followed the needs and locations of the industry. Speculatively building a rural road is unlikely to result in the development of a spaceport. But if a world leading rocket company is wanting to invest, the returns on infrastructure investment can be large.

Infrastructure investment is often discussed as a way of boosting the economy during a downturn. However, international research and domestic experience show major projects are seldom timely economic stimulus, often providing stimulus after the downturn has passed and increasing inflationary pressures.[39] Stable, predictable investment in maintenance and renewal can provide baseline activity that supports the industry and economy during a downturn.

The investment mix evolves to reflect shifting national needs

The mix of investment will change in the future. Long-term trends and policy goals will boost demand for some types of infrastructure and reduce it for others (Table 2). For example, an ageing population will reduce relative demand for education services across the country and the school and university infrastructure needed to support it, but increase the relative demand for healthcare services and 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 due to demographic and other changes. If we rebalance investment towards sectors with growing investment needs our infrastructure budget should remain affordable.

The mix of investment between and within sectors will change

Table 2: **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	1.3%	1.0%	↓	Decarbonisation, slowing income and population growth
Electricity and gas	Commercial sector	User charges	0.8%	1.3%	↑	Decarbonisation, renewals
Water and waste	Local government	User charges and rates	0.6%	0.5%	↓	Renewals and natural hazards
Telecommunications	Commercial sector	User charges	0.7%	0.7%		Renewals, stable outlook
Social infrastructure						
Education – primary/secondary	Central government	Taxes	0.4%	0.3%	↓	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	0.3%	0.3%		Renewals and population growth
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:** 'Forward Guidance on Infrastructure Investment'. New Zealand Infrastructure Commission. (2026).

More funding goes into electricity and health to meet growing demand

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 and other health services 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.[40]

Source: Thomas Coker, Unsplash

Lift hospital investment for an ageing population

Forward Guidance: Between 2010 and 2022, New Zealand spent around 0.2% of GDP per year on health infrastructure. We expect this to rise to around 0.4% for the next 30 years, driven by the need to renew the ageing hospital estate and expand capacity to meet the needs of an older population.

What's the problem?

The health system is already under strain. Health New Zealand/Te Whatu Ora manages more than 1,200 buildings, with an average building age of 47 years.[41] Low levels of investment and inconsistent asset management practices mean many hospitals are in poor condition and no longer meet modern clinical standards. Large parts of the network are nearing the end of their usable lives and will need to be rebuilt or remediated.

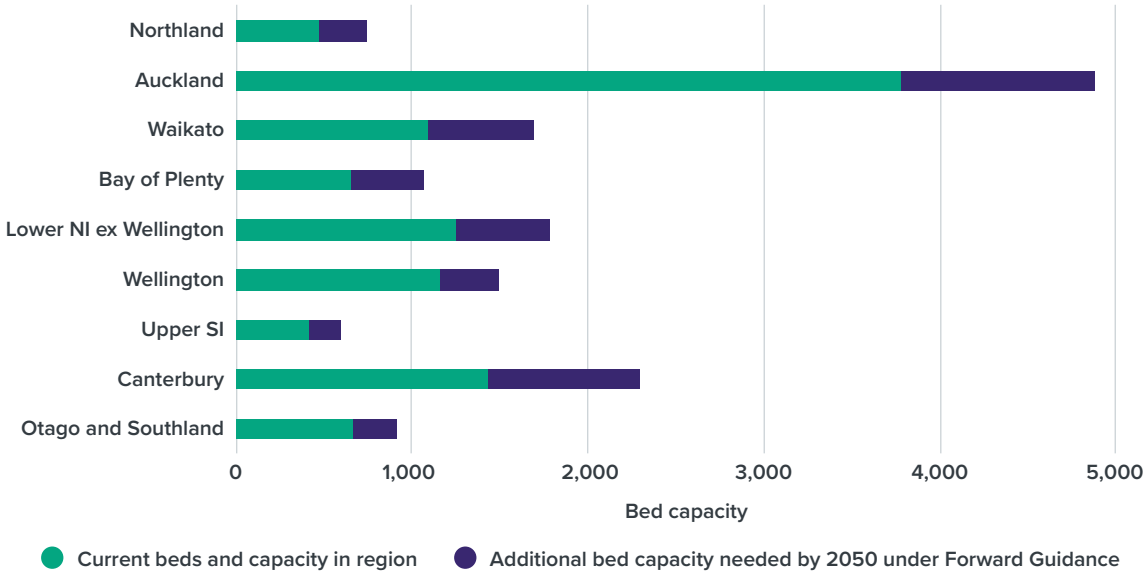
Demand pressures are also rising. The number of New Zealanders aged 65 and over is projected to grow from around 900,000 in 2025 to more than 1.5 million by the early 2050s. Older people use more healthcare, meaning we face a growing capacity shortfall. Under current models of care, Health New Zealand projects that around 4,900 additional hospital beds may be needed by 2043 to meet demand.

Balancing hospital renewal and expansion will be one of New Zealand's most significant public investment challenges. Through the Infrastructure Priorities Programme, the Commission has endorsed the need to investigate upgrades to Tauranga, Palmerston North and Hawke's Bay hospitals. However, all regions will need more investment, with the greatest pressure coming in large centres. For instance, our Forward Guidance projects we will need 1,100 additional beds and other health facilities in Auckland alone by 2050 under current models of care. This is the equivalent of building a second Auckland City Hospital, the largest in the country.

If we can deliver new capacity at affordable costs consistent with past projects and international benchmarks – and make greater use of non-hospital care options – we can meet healthcare needs while preserving affordability. Doing so will require disciplined sequencing, strong oversight of major projects, and consistent funding for maintenance and renewal.

Figure 16: **Hospital capacity (beds and facilities) needs by region, 2025–2050**

Expected growth in hospital beds and capacity under forward guidance



Note: Estimated increase in bed capacity includes physical beds and allows for additional healthcare facilities to support them, such as administrative space, parking, and utility buildings. **Source:** 'Forward Guidance on Infrastructure Investment regional modelling'. New Zealand Infrastructure Commission. (2026).

Key actions

- **Shift demand where possible to non-hospital care.** Resourcing primary care providers and expanding community-based and lower-cost service options can help reduce pressure on inpatient beds and defer expensive hospital builds.
- **Use Forward Guidance to anchor capital planning.** The Government should assess Health New Zealand's Health Infrastructure Plan for alignment with sustainable long-term investment levels and ensure its fiscal strategy considers the funding requirements necessary to deliver on the Plan.
- **Direct limited capital to the highest-need regions and projects.** Demand projections, cost benchmarking and the Infrastructure Priorities Programme should guide decisions about where funding will have the greatest impact.
- **Improve value from major projects.** Health New Zealand should use standardised designs, strengthen project governance, and partner strategically with industry. Digital tools should be prioritised where they improve productivity or reduce operating pressure.
- **Ring-fence dedicated renewals funding.** Decision-makers should protect capital set aside for rebuilding or remediating deteriorated assets from operational cost pressures, with clearer separation between clinical service funding and asset funding.

Spending slows in water, land transport and education as these sectors stabilise

Growing investment in health and electricity 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 resulting from an ageing population.

- **Land transport:** Investment in land transport (road, public transport, and rail) has been elevated over the past 20 years. An ageing population is expected to reduce travel demand in most areas of the country, while income growth will put limits on investments to enhance the service levels of the network. Decarbonising our economy may also shift the mix of land transport investment, if it reduces demand for roads and increases demand for public transport and active modes like walking and cycling. A lower relative level of capital investment means we could 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:** We expect overall investment demand for education infrastructure to moderate as the population ages. We note, however, there are likely to be significant regional variations in demand, with greater pressures in areas like Auckland, Waikato and Canterbury.
- **Water and waste:** After completing a period of 'catch-up' investment to renew pipes in poor condition and improve drinking water quality and wastewater network performance, we expect water and waste investment requirements to moderate over the medium to long term.

Complete catch-up on renewals in the water sector and restore affordability

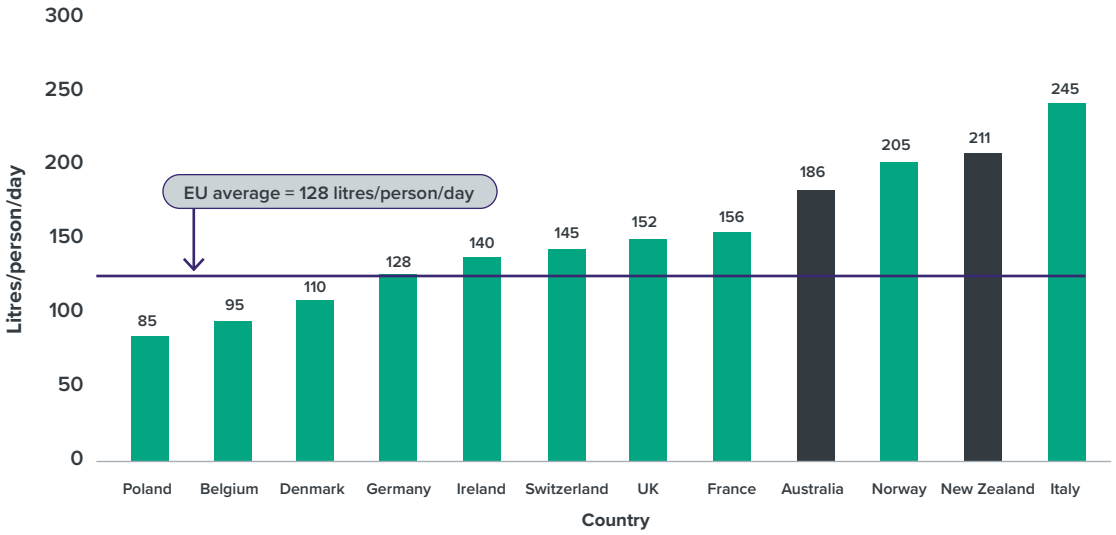
Forward Guidance: Between 2010 and 2022, New Zealand spent around 0.6% of GDP per year on water and wastewater infrastructure. We expect this to moderate to around 0.5% of GDP over the next 30 years as we complete catch-up renewals to lift asset condition and meet water quality standards.

What's the problem?

New Zealanders use more water and invest more in water-related infrastructure than almost any other high-income country. Over the next 10 years, councils are planning to spend close to $50 billion renewing and expanding their water networks.[42] Household bills are expected to double in some instances. For context, we estimate that New Zealand spent about $50 billion cumulatively on water and wastewater infrastructure from 1885–2012, even after adjusting for inflation.

New Zealanders value access to clean, safe drinking water, which is considered a taonga in Te Ao Māori. However, sustaining our current, historically high levels of investment will be unaffordable for some communities and come at the expense of other local priorities, such as parks and libraries.

Figure 17: **International residential water consumption (litres/person/day)**



Source: https://tewaihanga.govt.nz/our-work/research-insights/valuing-water-sustainable-water-services-and-the-role-of-volumetric-charging. **European data:** Europe's water in figures: An overview of the European drinking water and waste water sectors (2017 Edition). **Australian data:** Australian Bureau of Statistics. **New Zealand data:** Water New Zealand.

For a period of almost 20 years from the mid-1970s, New Zealand spent less on water infrastructure than the rate of depreciation, meaning our pipes and treatment plants wore out faster than we replaced them. Councils are now dealing with a legacy of broken pipes, sewage overflows and leaks, as well as a need to invest to meet quality standards set by Taumata Arowai. What they're planning to spend on repairs and replacements is largely in line with our Forward Guidance, but councils are also contemplating significant investments on water infrastructure to support housing growth or improve service levels.

Through the Infrastructure Priorities Programme, the Commission has endorsed the need to investigate water and wastewater infrastructure needs in several urban areas, while emphasising the importance of exploring lower-cost and non-built solutions, including managing demand through volumetric charging. Water service entities are increasingly exploring options to address investment affordability challenges. For example, one North Island council had to consider cheaper options after it consulted its community on a $640 million wastewater treatment plant, which would have cost households at least $1,000 a year once it came into effect.[43]

Key actions

- **Encourage councils and water services providers to consider installing water meters and adopting volumetric pricing.** This can moderate demand, help identify leaks, and defer the need for costly new investment.
- **Ensure regulatory coordination.** The Commerce Commission, the Water Services Authority – Taumata Arowai and regional councils will need to work together to ensure the safety, quality, environmental compliance and value for money of water sector investments.
- **Encourage councils to submit water investment proposals for assessment through the Infrastructure Priorities Programme.** This will ensure all options, including low-cost and non-built solutions, are considered before projects go ahead.

Sectors that are harder to predict are watched closely to guide future planning

Demand for new justice and defence infrastructure is inherently difficult to predict. While the need to maintain and renew existing justice and defence estate infrastructure has been clearly identified, future growth is shaped by policy choices and geopolitical developments that are far harder to forecast. To support long-term planning, the Commission has developed indicative guidance for these sectors based on 100-year trends in overall central government spending in these areas (see Appendix One). This represents the level of investment needed to maintain and renew current assets while allowing for population-driven pressures and reasonable improvements in service standards. The Commission will continue to refine and expand its Forward Guidance for these and other sectors.

Investment reflects the needs and priorities of different regions and communities

Our forecasts focus on overall national 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.

The Commission has carried out high-level regional modelling to understand how infrastructure networks in different parts of the country might grow and evolve over time. Without more detailed information on the value and condition of assets by region, we can't say exactly what investment will be required when. But we can take our Forward Guidance – which says infrastructure spending will increase from just over $20 billion a year now to more than $40 billion in the 2050s – and show what that would mean for the value of different infrastructure networks by region.

Every region will have more infrastructure in 2050 than it does today, but this growth won't be evenly distributed around the country. The dollar value of infrastructure networks in fast-growing parts of the country like Auckland will increase at a greater pace than slow-growing regions over the next 30 years. This isn't to say places like the West Coast won't require new investment, just that the overall value of their infrastructure networks will grow more slowly. For these regions, maintaining and renewing their existing assets will take on even greater importance.

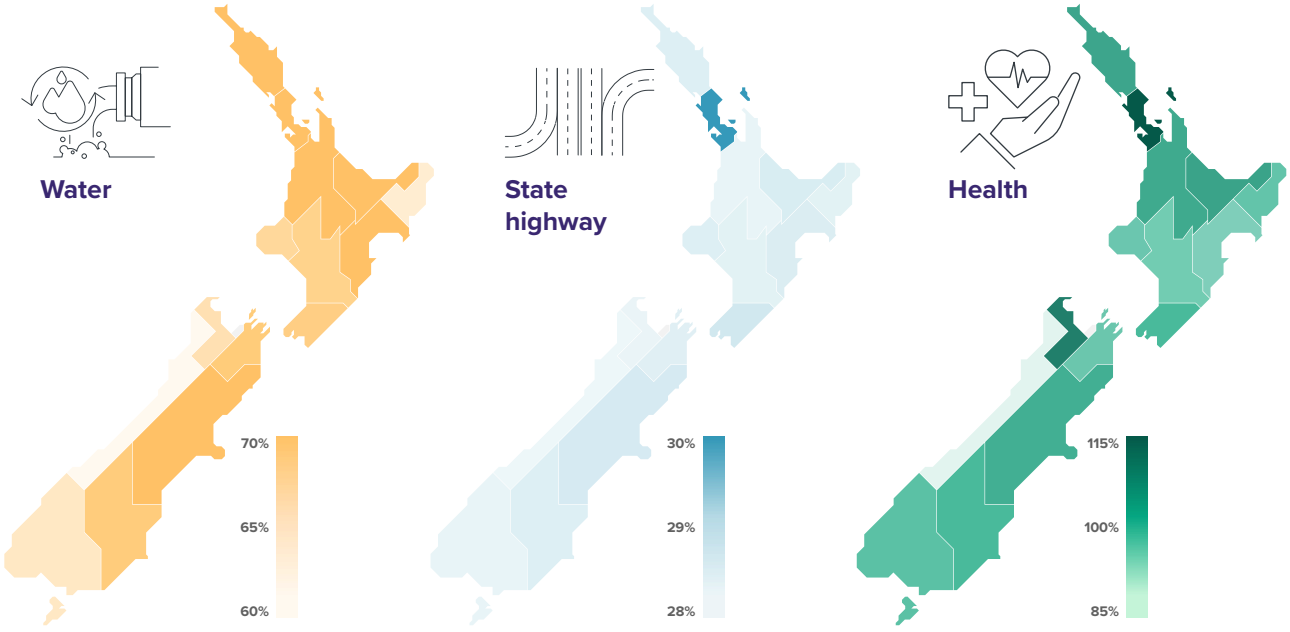
Some infrastructure networks will need to grow faster to accommodate rapidly growing demand. This is particularly true of hospitals, where every region is expected to have growing demand. For some regions, like Nelson and Tasman, the demand for new health facilities will mostly be driven by a population that is ageing faster than the rest of the country. However, in regions like Auckland, the Waikato, and Canterbury, more health facilities will be needed to serve not just ageing populations, but a growing population in general.

Even in sectors where our Forward Guidance suggests investment will moderate, there will be regional hotspots. In education, for instance, investment as a share of GDP is expected to decline over the next 30 years as the number of school-age tamariki (children) plateaus. But in regions such as Northland and the East Coast of the North Island, our regional modelling shows rising demand. These areas have large Māori populations, who have a younger age profile – 27.2 years on average, compared with the national average of 38.1. More tamariki means greater demand for education infrastructure (Figure 18).

Not all infrastructure demand is driven by population growth. State highways, for example, have historically been built to connect towns and cities rather than to match local population growth. Our Forward Guidance supports this, as it shows similar growth in regional highway networks despite differing population trends. Tourism is another important driver: regions with high seasonal visitor numbers face growing pressure on infrastructure, often with small resident populations to support the required investment.

Forward Guidance suggests networks will expand more rapidly in some regions

Figure 18: **Expected regional variation in infrastructure network growth, 2025 to 2050**



Note: Percentage changes indicate the estimated increase in the value of the infrastructure network in regional areas.
Source: 'Forward Guidance on Infrastructure Investment'. New Zealand Infrastructure Commission. (2026).

Box 2

Drivers of demand for future investment needs may affect Māori differently

The infrastructure needs of Māori communities often differ from those of the wider population. While our forecasts present an overall picture of future investment needs, the outlook for Māori diverges in important ways.

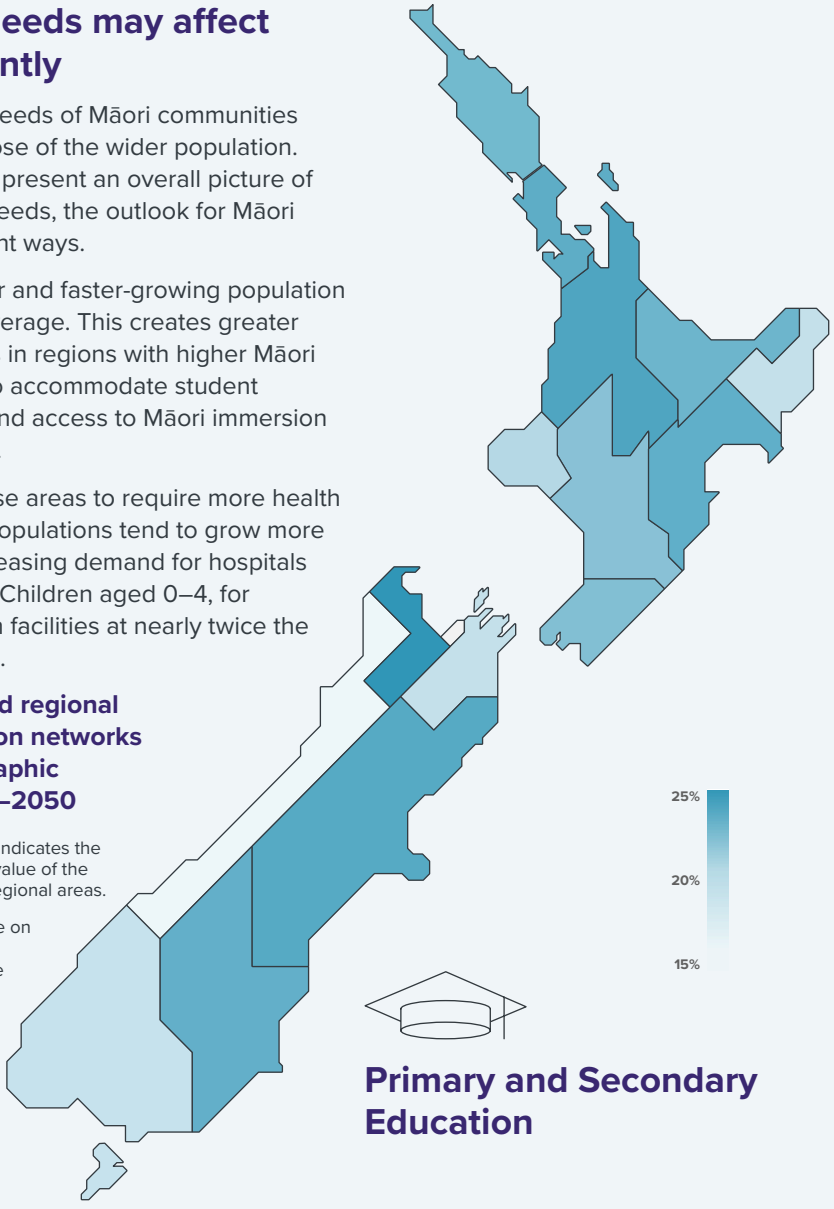
Māori are a younger and faster-growing population than the national average. This creates greater demand for schools in regions with higher Māori populations, both to accommodate student growth and to expand access to Māori immersion education and kura.

We also expect these areas to require more health facilities. Younger populations tend to grow more quickly overall, increasing demand for hospitals and other services. Children aged 0–4, for example, use health facilities at nearly twice the rate of 40-year-olds.

Figure 19: **Expected regional growth in education networks based on demographic projections, 2025–2050**

Note: Percentage change indicates the estimated increase in the value of the infrastructure network in regional areas.

Source: 'Forward Guidance on Infrastructure Investment'. New Zealand Infrastructure Commission. (2026).



Many marae are in hazard-prone locations, which can affect access and resilience. While our existing analysis can begin to show these impacts, further work is needed to understand them fully.

Finally, some infrastructure decisions can limit the ability of Māori to exercise kaitiakitanga (guardianship) over te taiao (the natural environment) or disrupt connections to whenua (land), both of which are central to Māori wellbeing.

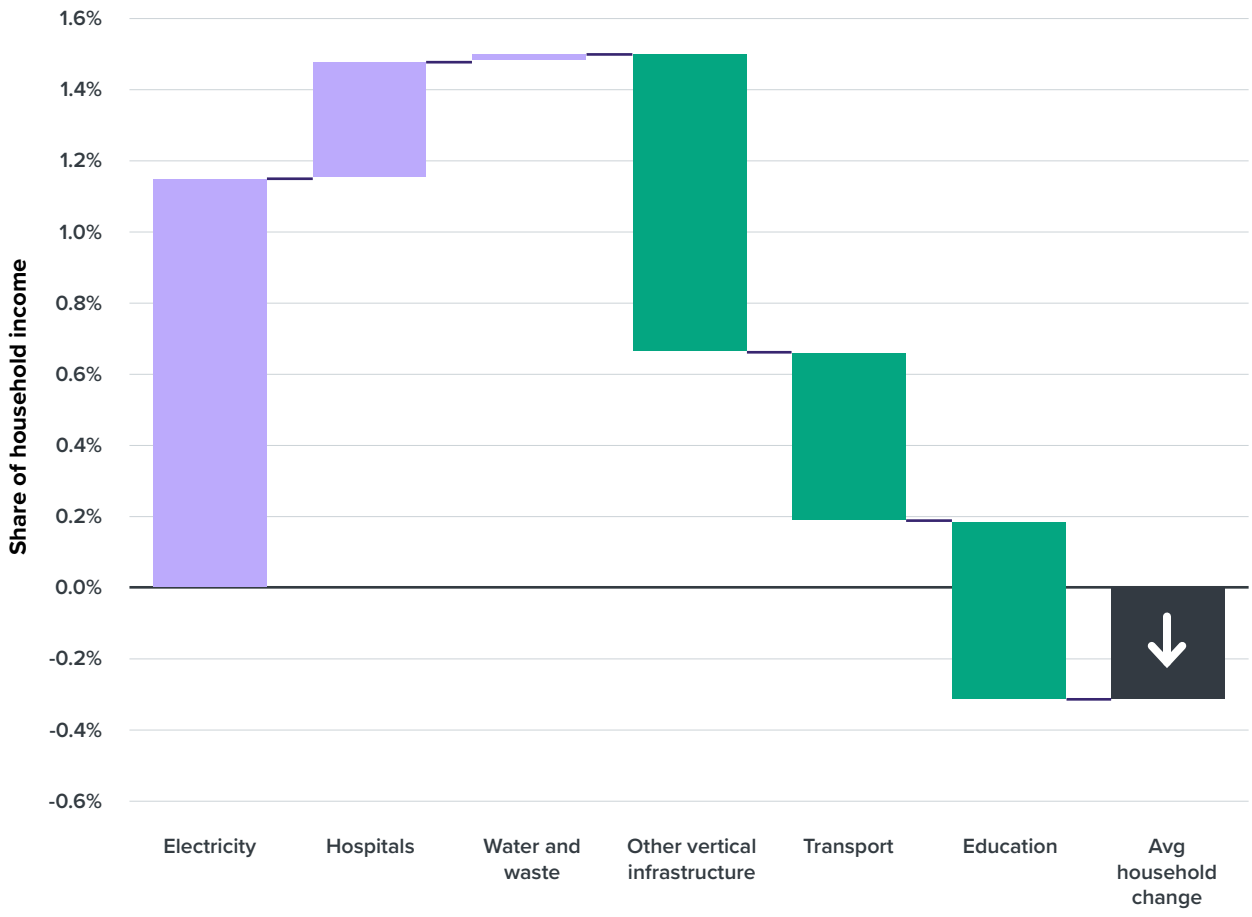
Spending decisions take household costs and living pressures into account

We have choices about how we fund and finance infrastructure investment. But New Zealanders will ultimately still have to pay. Households will meet some costs through taxes, rates, or user charges. Other costs 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 the impact of different scenarios on household budgets (Figure 20).

If implemented, our Forward Guidance would require households to pay slightly lower levels of charges and taxes in the medium term than they have in recent years. However, the composition will change. We expect higher electricity charges to fund new generation required to meet our decarbonisation targets in the next 10 to 15 years. Critically, to ensure the long-run affordability of this increase in investment, central government will need to pull back investment levels in land transport and education in response to lower overall demand. 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.[44,45]

Changes in investment will impact household budgets

Figure 20: **What our Forward Guidance would mean for the average household budget, 2035–2040, as a share of household income**



Note: Changes in cost are relative to expenditure on infrastructure services in 2019. Source: New Zealand Infrastructure Commission analysis and modelling. **Source:** New Zealand Infrastructure Commission. (2025). Household costs of infrastructure model guide: Effects of sector-level infrastructure investment programs for household budgets" Crow Advisory, Prepared for the Infrastructure Commission, September 2025.

Recommendation 1

Needs-based capital allowances

Ensure fiscal strategy and capital allowances are informed by the Commission's independent assessment of long-term needs and agencies' infrastructure asset management and investment plans.

Responsible agencies: The Treasury, New Zealand Infrastructure Commission, capital-intensive agencies

Timeframe: 2026 onwards.

Implementation Pathway

This could be implemented by:

- The Commission providing the Treasury with periodic forecasts of central government infrastructure needs.
- Incorporating these forecasts into fiscal strategy advice and decisions on future capital and operating allowances.
- Using agency asset management and investment plans to inform indicative allocation of future capital allowances across sectors and agencies.

3.2. Using the right tools to pay for infrastructure

Whakamahia ngā utauta tika ki te utu i ngā tūāhanga

Context

New Zealand currently invests just over $20 billion a year on infrastructure. This covers capital investment in new and existing assets, not the ongoing costs of maintenance or debt repayments. While finance can help spread the cost of projects over time, New Zealanders still ultimately pay for the hospitals, schools, water systems, telecommunications, and transport networks that support our way of life. User charges, taxes and rates are the three main ways we do this.

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 and excess capacity.

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 take public transport, 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.

Strategic direction

Funding and pricing tools are optimised for different infrastructure services

Infrastructure funding and pricing should ensure we get enough investment in all sectors. Different types of infrastructure require different approaches (Figure 21). We distinguish 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 the defence estate.

Network infrastructure should fund itself by charging people who benefit directly from it. This doesn't necessarily mean that every piece of a network needs to 'pay its own way'. For instance, low-traffic roads might return less in user revenues than they cost to maintain, and urban public transport services that make it possible not to drive might require ongoing cross-subsidies from other network users. Subsidies are appropriate if there are broader benefits or equity considerations, but the network as a whole should cover its costs.

Social infrastructure generally needs to be funded from general taxes or local government rates. This gives people consistent and equitable access to services, like education and healthcare, that are needed to participate in society.[46] Other examples of social infrastructure, like social housing, courts, prisons and the defence estate, provide broader societal benefits. For instance, courts are necessary to uphold the rule of law. Public funding of social infrastructure doesn't necessarily imply ownership, as leasing or contracting out may be a more cost-effective way to provide public services.

Place-based development infrastructure should generate enough revenue to pay for itself. This category includes things like convention centres, business accelerator precincts, irrigation schemes and stadiums that are intended to jump-start new economic activity. Revenue generation is essential for 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.

When network infrastructure and place-based development infrastructure is better at funding itself, there's more money for social infrastructure. Central and local government have limited tax and rate revenue for investment, so when they top up the cost of providing things like roads and stadiums, less is available to invest in schools, hospitals, parks and other social infrastructure.

How we pay for infrastructure affects the outcomes we get

Figure 21: **Best practice principles for funding and pricing different types of infrastructure**

1.

Match funding to infrastructure purpose

Funding and pricing should reflect whether assets are network, social, or economic-development infrastructure, recognising their distinct purposes, beneficiaries, and equity considerations.

2.

Networks should largely fund themselves

Users and direct beneficiaries should cover the full lifecycle costs of network services. This doesn't mean that every part of the network must individually pay its own way. Targeted subsidies or transfers to some users can be appropriate where there are wider public benefits or equity considerations. The key is that, taken together, the network should cover its costs over time.

3.

Social infrastructure should ensure equitable access

Essential public services should be funded from general taxation or rates to ensure access does not depend on ability to pay. Different ownership, leasing, or contracting models should be chosen based on value and cost effectiveness.

4.

Place-based development infrastructure should pass a market test

Projects aimed at stimulating new economic activity should demonstrate revenues from users or beneficiaries that justify investment and signal genuine economic value.

5.

Apply best-practice pricing for networks

Network pricing should:

- **Guide efficient investment** – Prices should signal the level of service users value, cover whole-of-life costs, incentivise quality improvements, and allocate risk fairly.
- **Guide efficient use** – Prices should encourage appropriate use, reflect the true costs of different types of use, location-specific costs, and externalities, and be transparent and reasonable.
- **Share efficiency gains** – Efficiency improvements should flow to users through lower prices or better service, and subsidies should support wider goals without undermining pricing integrity.

Source: New Zealand Infrastructure Commission. (2025); Principle 5 adapted from 'Approaches to Infrastructure Pricing Study: Part 2 – Current Pricing Analysis'. PwC. Report for the New Zealand Infrastructure Commission. (2024).

People and businesses that benefit from network infrastructure pay for its costs

Network infrastructure should be priced to achieve three main goals (Figure 21). The first is that users should cover the full cost of providing and operating infrastructure and services. The second is that prices should guide investment and 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.[47]

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 grow the revenue base. Reluctance to pay for more investment can be a 'market test'. If users aren't prepared to pay higher charges for network improvements, it suggests the costs are disproportionate to the benefits they expect to receive.

There are multiple options for charging 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.

Well-functioning pricing helps to coordinate investment and optimise the use of existing and new assets. For example, the electricity sector's approach includes use of long-distance transmission 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.

Good pricing should also allow the benefits of infrastructure to be widely shared. Sometimes pricing strategies can incentivise best use of existing infrastructure and allow the benefits of infrastructure to be shared. For example, free off-peak public transport for SuperGold Card-holders has both equity and efficiency benefits. It helps to ensure better use of the public transport network by promoting travel during less busy times, and it ensures that cost is not a barrier for older New Zealanders on fixed incomes.

The electricity and telecommunications sectors generally perform well against best practice pricing principles. They recover most of their revenue through direct user charges and operate in market structures that support efficient pricing. This helps providers fund maintenance, improve assets, and identify the highest-value new investments. By contrast, pricing in land transport and the water sector performs less well: investment decisions are more policy-driven than price-driven, and users do not always pay for the full costs they impose on the network.[48]

Water pricing should encourage efficient use of existing networks and reduce costly pressure for new infrastructure. More councils are introducing metering and volumetric charging, which encourages water conservation, reduces leakage, and can defer costly capital upgrades. Kāpiti District Council, for example, invested $9.8 million in water meters and was able to defer around $36 million in storage and network upgrades for several decades.[49] Current water sector reforms will also place stronger emphasis on financial sustainability, which should encourage providers to adopt pricing approaches that better align with best practice.

New Zealand should expand its road pricing tools. Legislation now enables time-of-use charging, which is used in places like Singapore and New York to manage congestion by pricing travel at peak times. This can reduce delays, improve network performance, and defer the need for expensive capacity expansions. Changes are also underway to make tolling easier to implement, providing a revenue stream to fund new roads and offering a market test of project value: if toll revenues can cover costs, it signals a project is likely to deliver benefits that users are willing to pay for.

Implement time-of-use charging and fleetwide road user charges

Forward Guidance: Between 2010 and 2022, New Zealand spent around 1.3% of GDP per year on land transport, including a higher share than our peer countries on roads. We expect this to decline to around 1% of GDP per year over the next 30 years, as growth in vehicle travel slows due to demographic and economic trends.

What's the problem?

Congestion in fast-growing cities is worsening. Nationally our road network performs well relative to peers, but in major centres traffic volumes are outpacing capacity. Despite decades of motorway expansion in Auckland, average speeds have continued to fall.[50]

Adding new capacity is increasingly difficult and expensive. Many corridors are already built out, and tunnels or rapid-transit conversions come with high costs and disruption. Congestion imposes productivity and wellbeing costs. Auckland commuters lose 66 hours a year stuck in traffic, with social and economic costs estimated to reach $2.6 billion by 2026.[51]

If left unchecked, rising congestion will make cities less attractive, costlier, and less productive. Building more capacity will help in targeted locations, but the greatest gains now lie in using existing roads better. Cities such as New York and Stockholm have shown that time-of-use charging, where drivers pay a bit more to use busy roads at peak times, can cut congestion substantially.

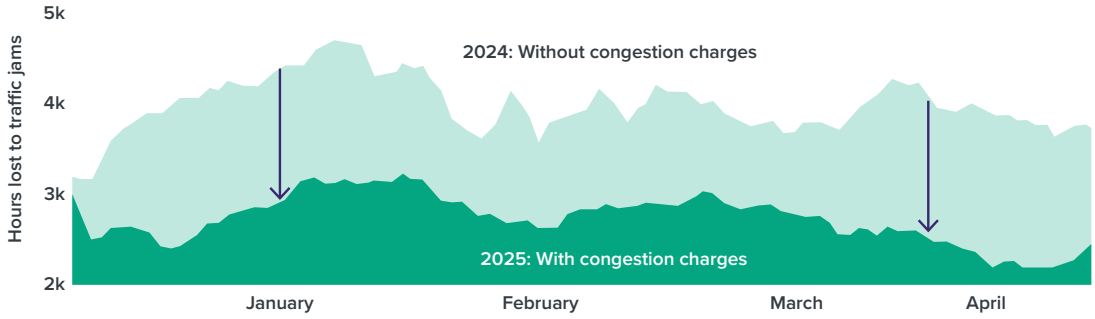
This approach shifts less-urgent trips to off-peak times and encourages public transport use, freeing up road space for those who need it most. Previous modelling for Auckland suggests time-of-use charging could cut excess delay by around 35% and deliver equivalent network performance with roughly 20% less new capital investment.[52]

Current road pricing tools – fuel excise duty (FED) and road user charges (RUC) – do not reflect the localised nature of congestion because they are set nationally. As the vehicle fleet becomes more fuel-efficient and more electric, universal RUC will become a fairer and more sustainable way to charge for road use, while also enabling more dynamic, location-based pricing in future.

Figure 22: **Impact of time-of-use charging on congestion in New York**

Time-of-use charging: New York (Manhattan)

25% reduction in congestion



Source: Regional Plan Association. 'Congestion Pricing: Faster All Around'. (2025) https://rpa.org/news/lab/congestion-pricing-getting-around-faster-all-around

Key actions

- **Implement time-of-use charging in Auckland.** Enabling legislation is now in place, but durable central and local government support will be critical for designing and rolling out the first scheme.
- **Partner with local government.** Congestion pressures are concentrated in Auckland, Wellington, Christchurch, Tauranga, and Queenstown. Joint design, timing, and supporting investments will help ensure schemes are effective and publicly sustainable.
- **Integrate pricing into investment decisions.** Congestion charging will change travel patterns and the timing of future investment needs. Business cases should explicitly account for these effects to ensure the right investments are made at the right time.
- **Support the transition to universal road user charges.** Modernising the largely paper-based system and expanding it to 3.5 million vehicles will be complex, but it can make transport funding fairer and more transparent.

Financing tools spread the upfront costs of investment

Once appropriate pricing and funding methods are in place, infrastructure providers should consider how to finance the upfront costs of investment. Funding represents all the money needed to pay for infrastructure, which ultimately comes from users, taxpayers, or ratepayers. Financing is about when we pay for infrastructure. It involves borrowing money now and repaying it later. This allows developers to spread the cost of building and operating infrastructure over a longer period and pay for it using revenues raised by current and future users.

Many financing options are available. The Treasury's 'Funding and Financing Framework' encourages consideration of all options.[53] 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.

3.3. Fixing land transport funding and investment

Te whakatika i ngā tahua tūnuku whenua me te haumitanga

Context

New Zealand spends more on land transport than any other type of infrastructure. Mature road and rail networks connect most parts of the country, supporting the smooth movement of people and freight that underpins a well-functioning economy. While these networks perform reasonably well against peer countries, some important gaps remain. Land transport infrastructure providers face limited external oversight and no economic regulation to protect consumers – which is unusual compared with network sectors where consumers can't choose between multiple providers. Transport faces several challenges, such as rising congestion on urban road networks, rising carbon emissions, and high health impacts from air pollution and road crashes.[54]

Central government has established arm's-length entities to provide and manage transport networks. NZ Transport Agency Waka Kotahi (NZTA) is a Crown entity that provides state highways and co-funds local roads and urban public transport services. NZTA also performs regulatory functions. KiwiRail is a state-owned enterprise which provides rail infrastructure and services. These arm's-length entities were established to retain public ownership of assets while applying commercial discipline independent from day-to-day Ministerial control. They were also designed to be self-funding from user charges.

NZTA acts as both funder and deliverer of projects – combining functions previously kept separate. Between 1997 and 2008, one Crown entity (Transfund, renamed Land Transport NZ in 2004) was charged with administering transport funding and making investment decisions. Transit New Zealand was responsible for state highways and had to bid for funding alongside local road controlling authorities. Maintenance took precedence over new capital works, and only the highest-value projects were funded.[55]

The Government Policy Statement on Land Transport (GPS-LT) directs spending in the sector. Unlike other network providers that invest to meet demand, land transport investment is heavily influenced by the Government of the day's objectives. The Minister of Transport determines funding ranges for expenditure categories through the GPS-LT, based on advice from the Ministry of Transport but without independent oversight. In recent years, Governments have also directed specific projects for delivery, leading providers to spend more than user revenues allow.

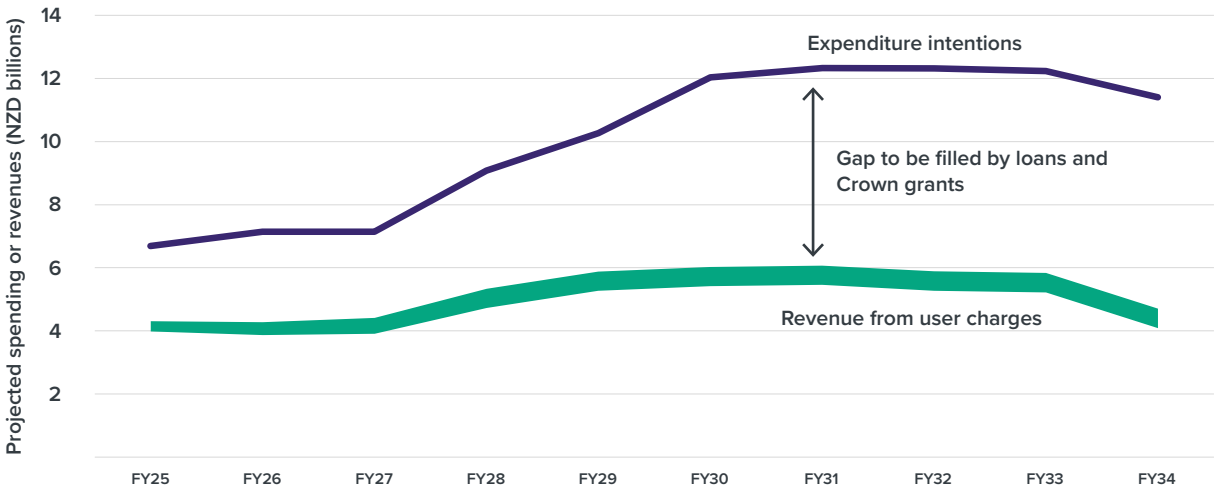
Historically, transport users funded almost all central government transport spending. This approach, which aligns with best practice pricing principles for network infrastructure, occurred mainly via fuel taxes and road user charges paid into the National Land Transport Fund (NLTF). Since the late 2010s, spending on roads and rail has far exceeded user revenues, requiring large top-ups from general taxes. In the 2024–2027 funding period, Crown grants and loans totalled $12.8 billion, or nearly 40% of the $32.9 billion in planned expenditure. These resources could otherwise support social infrastructure, and the funding gap is expected to persist (Figure 23).

At the same time, investment ambitions continue to grow. The National Infrastructure Pipeline includes around 25 major road, rail, and rapid transit schemes with a combined value over $100 billion – equivalent to more than 20 years of normal land transport revenue. Based on current estimates, delivering just the major roads programme in full over the next 20 years would cost $56 billion. Funding this entirely from petrol tax and road user charges would require a one-off 70% increase, equivalent to a 49 cent per litre increase in petrol tax.[56] Further revenues would be required for the Waitematā Harbour crossing and major rapid transit schemes.

Household affordability pressures limit how much can be raised from users. Petrol costs and transport charges are consistently ranked in the top ten issues faced by households.[57] Affordability concerns are likely to increase as the population ages and income growth slows. This reinforces the value of a more sustainable, demand-aligned investment approach in land transport – one that reflects what users can afford and what revenues can realistically support.

Land transport faces a large funding gap under current plans

Figure 23: **New Zealand plans to spend much more on land transport than it collects from users**



Source: NZTA National Land Transport Programme 2024–2027.

Strategic direction

Transport investment matches the amount of money available from users

Return to a system funded predominantly by user charges. Doing so will give agencies like NZTA direct feedback on whether users are prepared to pay for investing in and operating land transport networks. There are some possible exceptions, including the ongoing use of rates to co-fund local roads and public and active transport, and cross-subsidies for public transport, active transport and rail initiatives that allow for more efficient use of existing networks. Crown funding can also play a role for emergency recovery events. In general, the funding model should shift to a state where Crown loans and grants aren't required for land transport.

Investment should be made with greater independence. Our current transport spending ambitions present affordability challenges. To resolve these challenges, central government needs to be less prescriptive about how land transport funding should be allocated. Instead, transport providers should be accountable for selecting investments that maintain, renew and grow the network in line with user demands. Greater autonomy, coupled with independent oversight, can enhance commercial discipline, confine investment to available revenue and reduce network integration challenges. Borrowing should be used carefully, with appropriate accountability mechanisms in place.

Essential spending on renewals and maintenance should be prioritised first in budgeting. Each new road or railway needs to be maintained and renewed over its lifetime. If transport funding decisions are not sufficiently independent, funds for maintaining and renewing the network may need to be kept separate. Regular maintenance is more cost effective than sporadic maintenance, saving funds for other land transport priorities. Over the long-run, this approach will result in a higher-value approach to land transport investment.

Ongoing subsidies for rail require assessment. Central government has primary responsibility for funding below-rail assets, which currently run at a significant loss.[58] The cost of maintenance, renewals and improvements is estimated at an average $500 million per year over the coming decade.[59] While there may be a case for subsidising rail, doing so requires a demonstration that the benefits of investing in rail exceed those offered by other public infrastructure investment opportunities.[60,61]

Prioritise and sequence major land transport projects

Forward Guidance: Between 2010 and 2022, New Zealand spent around 1.3% of GDP per year on building and replacing land transport infrastructure, not including spending on maintaining and operating networks. Over the next 30 years, we expect this to moderate to around 1.0% per year as demand growth slows and investment rebalances toward renewals. That level of spending would fit within user revenues and allow existing networks to be maintained, renewed, and gradually improved. However, current investment ambitions go well beyond this level.

What's the problem?

New Zealand's major transport project pipeline has grown much faster than the funding available to deliver it. This includes plans for 17 Roads of National Significance (RoNS), major rapid transit projects such as Auckland's Northwestern Busway, and a new Waitematā Harbour Crossing. Taken together, these ambitions far exceed the revenue likely to be available over coming decades.

Cost escalation compounds the problem. The RoNS projects are expected to cost significantly more per kilometre than earlier New Zealand motorway and expressway projects, and significantly more than the OECD average.[62] Indicative target cost ranges published by NZTA suggest costs should ideally be much lower.[63] The Northwestern Busway is expected to cost much more than previous New Zealand busways, potentially exceeding the per-kilometre cost of many underground rail projects overseas.[64] These cost increases constrain what can be delivered without displacing other needs.

Decision-makers must align projects with demand, prioritise low-cost solutions before major upgrades, stage big builds over time, and protect funding for maintaining and operating existing networks. Our Forward Guidance predicts funding will be available for improvement projects, but not enough to build all major projects at once. An affordable programme must keep costs within benchmark ranges, align upgrades with demonstrated demand growth, and subject projects to rigorous cost-benefit analysis with independent assurance.

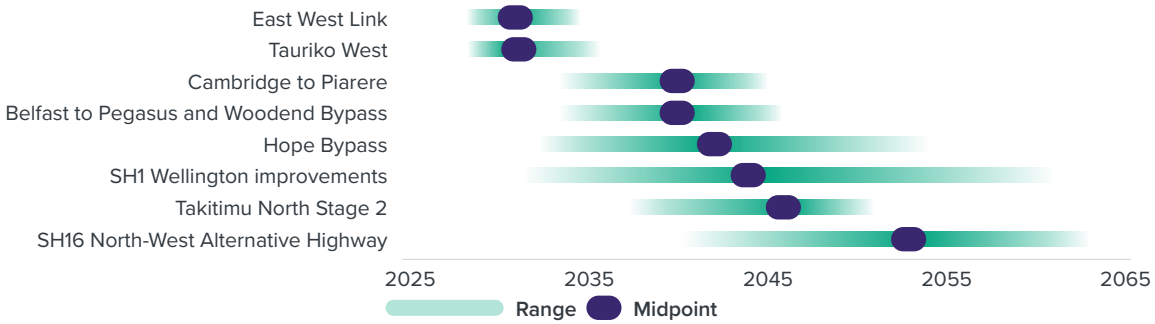
To illustrate what a demand-aligned approach could look like, the Commission has undertaken high-level analysis of demand growth scenarios for announced but currently unfunded major projects. This analysis distinguishes between capacity pressures and other drivers of intervention, such as safety, resilience, and reliability, which are often addressed through a single, high-cost upgrade. In many corridors, capacity constraints appear to be years away, and networks could continue to perform effectively with targeted safety treatments, resilience measures, operational improvements, or demand-management tools rather than immediate major expansion.

As an indicative benchmark, a well-designed two-lane road can carry around 2,600 to 3,000 vehicles per hour, depending on traffic mix, while a well-designed bus lane can move roughly 2,400 passengers per hour.[65,66,67,68] Our timing estimates are presented as ranges to reflect uncertainty about local growth and the potential for non-capacity issues to trigger earlier interventions. Subject to cost-benefit analysis, projects in high-demand, high-growth corridors may warrant earlier consideration, while others can be deferred. In the interim, lower-cost, more targeted investments can be used to address specific safety, resilience, or performance issues.

In some cases, like SH1 Wellington improvements and Christchurch Mass Rapid Transit, there is a wide uncertainty range for when capacity constraints might be reached. This reflects underlying uncertainty about how rapidly demand will grow as well as choices about how to respond to capacity pressures when it is costly to upgrade capacity. Even where there is a narrower uncertainty range, like Tauriko West or the East West Link, upgrades could still be staged to optimise value.

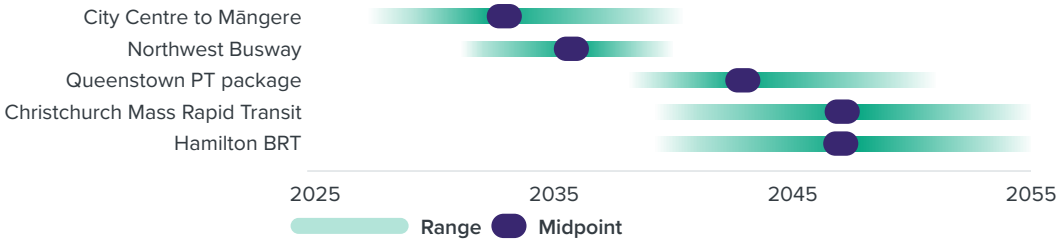
Figure 24: **Indicative timing scenarios for major road and rapid transit capacity upgrades**

Estimated date range for exceeding estimated capacity of current road



Note: The following corridors could also reach capacity thresholds prior to 2055, but this is not the most likely timing from a capacity perspective: Petone to Grenada (for full four-laning); Port Marsden to Whangārei; Mill Road Stage 1; Warkworth to Te Hana; Hamilton Southern Links; Te Hana to Port Marsden.

Estimated date range for exceeding capacity of bus lane infrastructure



Note: The following corridors could also reach capacity thresholds prior to 2055, but this is not the most likely timing from a capacity perspective: Airport to Botany BRT; Tauranga Cameron Rd. **Source:** 'Understanding capacity upgrade pressures across infrastructure networks' New Zealand Infrastructure Commission. (2026)

The Waitematā Harbour Crossing project is different. Unlike other road and rapid transit upgrades, it is unlikely to be fundable through normal transport revenues. Building the original bridge required a steep toll, equal to $9 in inflation-adjusted terms.[69] The current crossing faces maintenance, resilience, and capacity pressures, but repeated investigations have yet to identify an affordable solution.

New revenue will be needed to fund a new crossing. The Commission's high-level analysis suggests that a $9 toll on both new and existing crossings could raise up to $7–9 billion, depending on the tolling period.[70] Higher tolls may not raise more revenue, as they would divert too many users and erode viability, and tolling only the new crossing would sharply limit revenue. Other funding mechanisms are possible, but would likely require non-users to contribute funding which may not be considered equitable or favourable. Decision-makers will ultimately need to confirm revenue potential from tolling or other funding instruments like Infrastructure Funding and Financing Act levies, and identify options that fit within this envelope. In the meantime, time-of-use charging, interim busway upgrades, and improved maintenance and monitoring should be considered to extend the life of the existing asset.

Key actions

- **Use Forward Guidance to set realistic investment and revenue paths.** This will help assess FED/RUC options and ensure long-term plans match sustainable revenue expectations.
- **Prioritise low-cost, high-value improvements first.** Use intervention hierarchies and demand-management tools like congestion pricing to address immediate issues while deferring expensive upgrades until genuinely needed.
- **Align pricing and land-use policies.** Ensure that zoning, development patterns and pricing tools support demand for major upgrades, rather than undermining their utilisation.
- **Sequence major projects using value for money thresholds.** Consider traffic volumes, public transport patronage, safety performance and cost benchmarking, supported by Infrastructure Priorities Programme assessments, to guide where and when major investment is justified.
- **Develop new revenue tools where necessary.** For projects that cannot proceed within existing funds, tolls, targeted levies, and other revenue mechanisms should be investigated, with budget envelopes reflecting the revenue these can credibly generate.

Source: Elliot Blyth, Unsplash

Revenues support an efficient level of investment in maintaining and improving networks

Revenue levels should reflect the cost of operating, maintaining, renewing and improving networks. There is currently no prescribed methodology for setting fuel taxes or road user charges, meaning charges can end up too high or too low.[71] For example, the Government may hold user charges down during periods of high inflation even as the cost of operating the network rises. In recent years, revenue collected per kilometre travelled has been about 30% below the historical average despite elevated investment levels, reflecting short-term decisions to cut petrol taxes in response to inflation.[72] Transport also generates wider costs, like air pollution and the health system impacts of road crashes, that are not currently factored into user charges, but could be considered as part of future revenue-setting approaches.

User charges also need to reflect users' ability and willingness to pay. Charges may need to increase to overcome price freezes, which contributed to the NLTF's inflation-adjusted purchasing power falling 21% since the last increase in FED and RUC.[73] However, public feedback on the draft National Infrastructure Plan highlighted concern about further price increases. Low-income households spend a higher share of their after-tax income on transport.[74] Moderating transport expenditure, while providing options for households to avoid the cost of owning and operating a private vehicle, would help affordability and address equity concerns.

Our Forward Guidance suggests capital spending on land transport should moderate from recent elevated levels. We forecast investment demand based on New Zealanders' historical willingness to pay. Slowing population and income growth, alongside the potential for shifts in network usage as our economy decarbonises, suggest that land transport costs should represent a smaller share of household expenditure going forward. In this context, we would expect investment to shift away from state highway improvements toward maintenance, renewals, public transport, and resilience. Our Forward Guidance can inform decisions on funding levels and the user charges needed to support them.

Revenue decisions also require independent oversight. Other monopoly network service providers receive assurance and oversight in the form of economic regulation or audit. Given the significant implications on household costs, independent oversight of transport prices, through economic regulation or otherwise, could protect consumers while providing Ministers with confidence that the agreed revenue levels are both sufficient and reasonable.

Providers are efficient and accountable for delivery and asset management

New Zealand spent more on land transport between 2013 and 2022 than any other sector. The relative importance of the sector and its potential to displace spending in other areas means it should be subject to robust oversight and independent assurance over investment.

Infrastructure providers need to prioritise the highest value new projects. Higher spending on transport projects in recent years has coincided with a period of declining influence of cost-benefit analysis to inform project selection. Methodology changes make value for money assessments difficult to compare over time, but projects seemingly had to meet much higher thresholds in the 1990s and early 2000s. Land transport projects should be selected only where their benefits significantly exceed their cost. Investment decisions should be revisited as more information on costs and benefits comes to light.

Investment decisions require independent oversight. Investment assurance provides confidence that investments are strategically aligned, provide value for money and are deliverable. In other network infrastructure sectors, like electricity transmission and distribution, fixed-line broadband telecommunications, airports, and water and wastewater, performance-based economic regulation is used to lift efficiency and accountability.[75] While land transport infrastructure has not historically been subject to economic regulation in New Zealand, international examples like the UK's Office of Road and Rail illustrate that such an approach can be applied to ensure that transport expenditure promotes the long-term benefit of consumers.

Recommendation 2

Land transport funding and oversight

Reform the land transport funding and investment oversight system to ensure financial sustainability and enhance economic and social outcomes by aligning investment expectations with available revenue and strengthening efficiency and accountability in delivery.

Responsible agencies: Ministry of Transport (lead), in consultation with New Zealand Transport Agency and other delivery entities

Timeframe: Complete public consultation on reform proposals within 24 months of the Government's response to the National Infrastructure Plan.

Implementation Pathway

This could be implemented by:

- Returning to a system where investment is confined to user revenues, with investment and borrowing decisions made at arm's length from Government.
- Establishing economic regulation or other independent oversight to ensure efficient investment and revenue levels that reflect cost.
- Embedding organisational structures and principles that prioritise funds for renewals and maintenance.
- Strengthening efficiency and accountability in delivery through independent assurance and clear performance expectations.
- Reviewing institutional structure, legislation and funding instruments to apply these principles effectively.

4 Looking after what we've got: Funding maintenance and asset management first

Te tiaki i ā tātou rawa: Te utu i ngā turukitanga me te whakahaere rawa i te tuatahi

Source: Danny Rood, Truestock

Summary

- Much of the infrastructure we will need over the next 30 years already exists. Strong long-term asset management and investment planning is essential to guide how it is maintained, renewed and expanded.
- New Zealand was ranked fourth to last in the OECD for asset management, with visible symptoms of weak practices including sewage leaks in hospitals, leaky classrooms and mouldy army barracks.
- The system needs to be strengthened, including a requirement for capital-intensive agencies to produce long-term asset management and investment plans that identify renewal needs and future investment requirements.
- These plans should be credible, fundable, scenario-based and aligned with the Government's fiscal strategy.
- As much as 60 cents in every dollar of future infrastructure spending will need to go towards maintenance and renewals, making this New Zealand's biggest long-term investment challenge.
- Data on maintenance and renewals spending is often incomplete, but available information suggests many central government assets are wearing out faster than they are being renewed, leading to deteriorating service levels.
- Infrastructure is vulnerable to natural hazard events and malicious threats, including earthquakes, flooding, cyberattacks and technology-driven disruptions.
- Investments to build resilience and protect against hazards and threats should be proportionate, targeted to the most critical assets, and cost-effective.

4.1. Strengthening long-term asset management and investment planning

Te whakapakari i ngā whakahaere rawa tauroa me te whakamahere haumitanga

Context

Our Forward Guidance describes a sustainable level and mix of infrastructure investment to meet future demands, but it doesn't determine funding levels. The biggest investment driver over the next 30 years is the need to replace or rebuild the infrastructure New Zealand already has, potentially taking up 60 cents in every dollar of capital spending. It is up to the Government of the day to allocate funding for many types of infrastructure through the annual Budget. This process, which divides up revenue collected from general taxes and other sources, must balance many competing spending demands within constraints driven by the need to maintain fiscal sustainability.

The Investment Management System (IMS) requires central government agencies to develop long-term investment intentions. Agencies are meant to signal future investments based on their strategic planning and asset management practices. The Treasury oversees the IMS, which is part of the Public Finance System. It comprises the policies, processes and requirements to support agencies to plan and deliver investments, as well as guidance on how they should be looking after their existing assets.

Parts of the system work well, but there is significant room for improvement. We reviewed how New Zealand performs against the International Monetary Fund's Public Investment Management Assessment framework, a best-practice framework for assessing public sector investment and asset management.[76] 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, budgeting for maintenance, renewals, and resilience of existing infrastructure, and strengthening assurance for public investment and major projects (discussed in the next chapter).

The current approach to long-term investment planning is disjointed. The Government of the day forecasts how much money will be available in future years for new capital spending on infrastructure projects and other capital investment. The 2026 Budget Policy Statement, for example, indicated $3.5 billion would be available each year for four years.[77] The Commission has reviewed long-term investment plans across several sectors, including health, defence, police, corrections and education. Collectively, these long-term plans indicate a requirement for significantly more than $5 billion of capital spending each year, not including potential Crown capital funding requests for transport and ICT investment. This materially exceeds the amounts forecast in the Budget Policy Statement.

This chronic misalignment between signalled investment and available funding means decision-makers routinely face difficult trade-offs. To be effective, long-term asset management and investment plans – which should outline what agencies think they need to look after and renew their existing infrastructure, as well as what improvements might be required in the future – need to be linked to funding and pricing decisions and consider different demand and funding scenarios.

Infrastructure delivery becomes harder without sufficient planning. Weak incentives for long-term planning and a process that forces difficult trade-offs mean decision-makers struggle to prioritise well. As a result, investments can reflect short-term imperatives rather than quality planning.

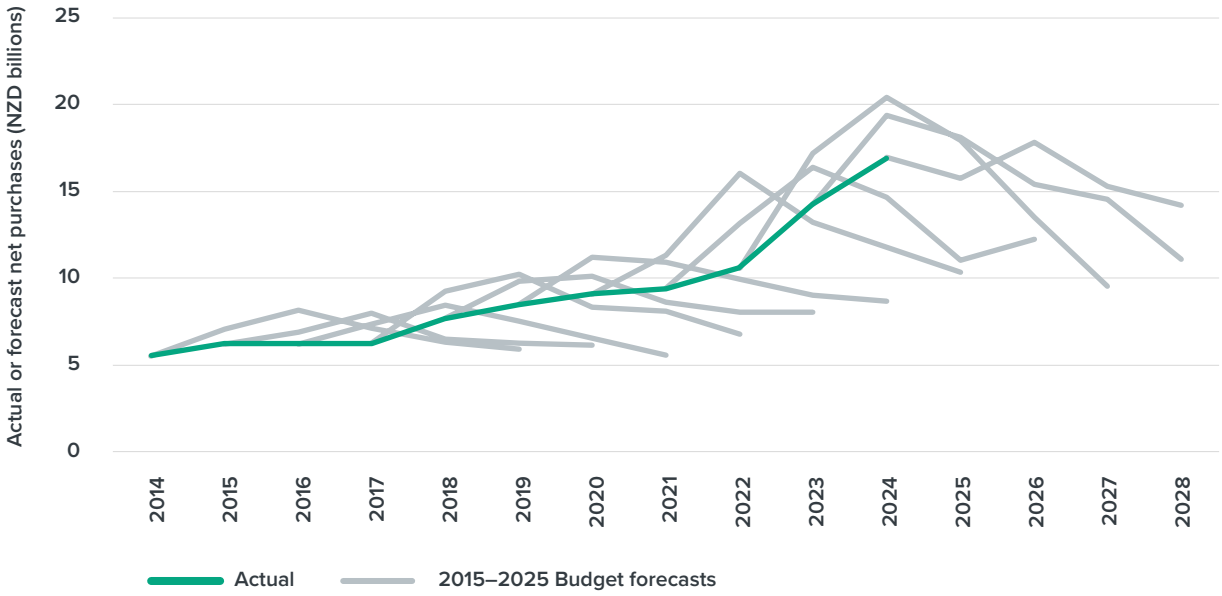
This means that investments often progress before they are ready. Budget forecasts consistently over-estimate capital investment in the short term and under-estimate it in the long term (Figure 25). This reflects optimism about how quickly newly funded (but immaturely planned) projects can be designed and delivered. For example, a review of 16 mental health units which received funding between 2015 and 2020 identified common issues in the planning phase, including a lack of detailed information and unrealistic expectations. This led to escalations, scope changes and delays.[78]

> When stakeholders understand the direction of travel, planning becomes more efficient and delivery more effective – this is the essence of 'going slow to go fast'.
>
> **WSP submission**

Better long-term planning supports a stable pipeline of work. The current mismatch between long-term investment intentions and available funding makes this difficult to achieve. Contractors need strong, credible future funding commitments to have the confidence to invest in equipment and workforce improvements. Swings in public infrastructure spending undermine confidence, which in turn makes project delivery more difficult and expensive. For New Zealand to be able to meet its infrastructure needs consistently and sustainably, the investment planning system needs to be improved.

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

Figure 25: **The Treasury's 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).

Strategic direction

Government agencies plan infrastructure investment with a clear view of long-term needs

Agencies should be required to develop long-term asset management and investment plans. These plans clarify what infrastructure owners need to do to maintain and renew existing assets to maximise their useful life for the lowest long-term cost. This eases fiscal pressures by deferring costly new investments until they are absolutely required. Plans should also assess what new investments might be required under various future scenarios to provide a comprehensive view of investment requirements.

Our Forward Guidance on future infrastructure demands is a start, but asset owners are best placed to do detailed long-term planning. The modelling in this Plan provides a broad view of the level and mix of investment demands that are likely to be affordable and needed in the long term. However, this is a high-level forecast. Capital-intensive central government agencies should be able to produce integrated long-term plans that provide a detailed view of their assets, as well as detailing current and future demands across their networks.

Data on long-term investment intentions should be consistent and complete. 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, which is made public in a redacted form several months later. Information quality currently varies. Going forward, work is needed to standardise the level of detail provided by agencies, including clear communication of what service levels these investments are meant to support, and the risks associated with them.

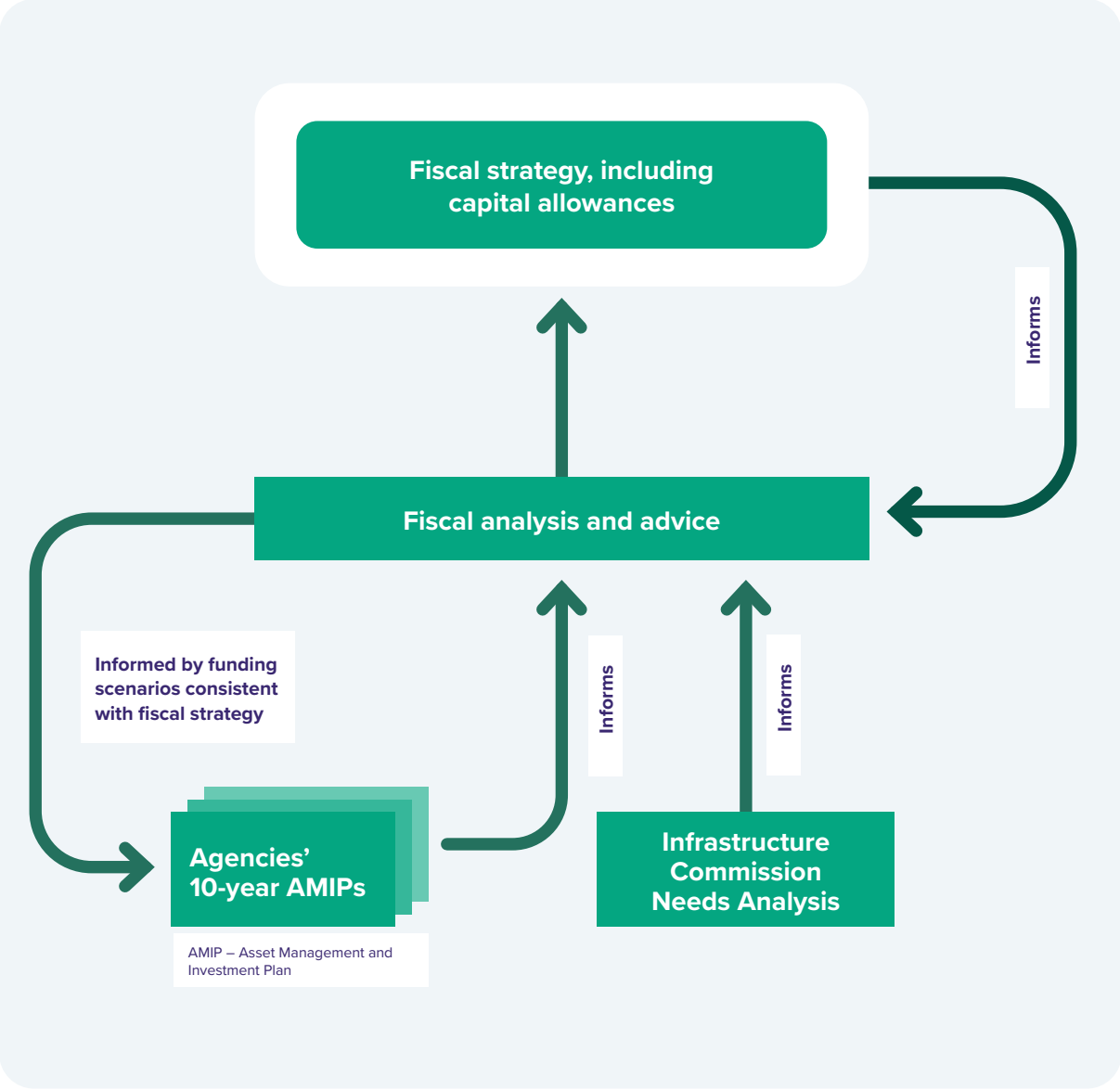
Asset management and investment plans are credible and aligned with funding

Long-term asset management and investment plans should be credible, fundable and achievable within fiscal forecasts. While unconstrained plans can help reveal underlying investment pressures, they are of limited practical use if they significantly exceed available funding. Robust plans help to improve delivery confidence by giving the market greater certainty and allowing purposeful project sequencing. Agencies should identify the cost and timings of renewing existing infrastructure and the new investments required under different demand and funding scenarios, including an investment pathway consistent with our Forward Guidance. Asset owners also need to understand when funding is unlikely to be available so they can manage service delivery risks.

Changes are needed to address the systemic mismatch between investment planning and fiscal forecasting. Agencies should be required to include multiple investment scenarios in their plans, including at least one that is aligned with Government funding expectations for their sector and consistent with our Forward Guidance. Once long-term asset management and investment planning processes are sufficiently mature, the Government could use these to help inform how it sets future capital allowances. Decision-makers can make prioritisation choices by relying on the Forward Guidance and its assessment of future needs for different sectors (Figure 26).

A well-functioning system for setting capital allowances

Figure 26: **Long-term asset management and investment plans, Forward Guidance and the Treasury's analysis and advice can all inform how capital allowances are set**



Budget decisions fund projects earmarked in long-term plans

Projects awarded funding through the Budget should have a link to long-term planning. Often this isn't the case, which reinforces a short-term approach to planning and undermines the incentive for agencies to develop effective long-term plans. It also generates pressure to make detailed project announcements before planning has been completed, prematurely locking in a particular option.

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 asset management and investment plans. Bids should include well-developed business cases. This is important for ensuring that investment is coordinated and prioritised to areas of highest need.

Multi-year budgeting supported by good planning and monitoring practices could help. Once agencies have developed quality investment plans, the Government should start to plan its investment decision-making over a longer period than the next Budget. This could involve planning and signalling expected sectoral funding allocations or the likely sequencing of project funding decisions. In either case, any longer-term funding approach should be informed by and consistent with agency investment plans. Previous attempts to introduce multi-year funding had limited success due to other gaps in practices.

Getting it right will enable more effective procurement and delivery approaches. Providing more forward visibility over funding would enable 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.

Asset owners plan carefully so they can handle unexpected changes

Uncertainty requires a sophisticated planning approach. Some trends are more predictable than others. For example, knowing we have an ageing population means we can prepare by building more hospitals. It's harder to anticipate and prepare for things like the rapid uptake of artificial intelligence or sudden policy changes that affect demand for infrastructure, like migration levels. The cost of getting it wrong can be severe. Building too little infrastructure relative to demand can lead to congestion and poor service quality, at least until investment catches up. Building too much can result in assets that don't cover their costs, creating ongoing financial burdens. Ongoing operating losses and maintenance make it harder to respond to other emerging needs.

It's easier to respond when we have choices. When the trends driving demand for different types of infrastructure are uncertain or volatile, it makes sense to plan ahead and keep options open rather than making large, irreversible commitments that may not pay off. In the face of uncertain demand, little bets are safer than massive gambles.

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 future scenarios. 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 infrastructure that may be needed in the future. 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.

Source: SCM Jeans, Getty Images

Manage assets on the downside

Forward Guidance: Our Forward Guidance highlights that demographics and factors like technological change will create challenges for all infrastructure networks. In education, for instance, we expect aggregate demand for school investment to moderate to 0.3% of GDP over the next 30 years due to the impacts of the ageing population.

What's the problem?

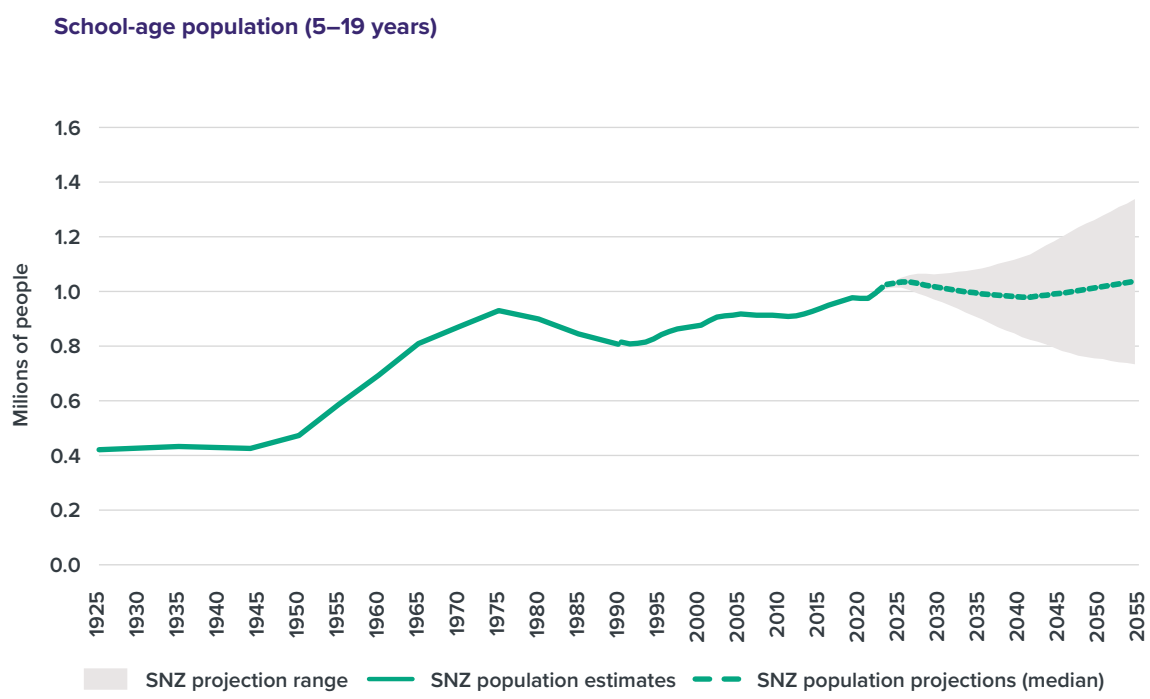
While New Zealand's population is all but certain to grow over the next 30 years, some regions, towns and even suburbs within otherwise fast-growing cities will have flat or declining populations. These areas face a unique challenge: remaining residents will end up paying more to maintain and eventually replace ageing infrastructure that was built to service a larger or growing population. As costs rise, more people may choose to leave, creating a vicious cycle that at its most extreme can lead to 'ghost towns'.

Communities around New Zealand are already confronting this problem and some are opting to 'pull back' from some services to save money. In Southland and Gisborne, for example, councils are converting some paved rural roads back to gravel. Making these kinds of decisions is complicated by future uncertainty around population growth levels. In a low-growth scenario, as many as 45 territorial authorities will have stagnant or declining populations by 2053. Only one council will be in this position under a high-growth scenario.[79]

Managing declining demand is particularly important for education. After a long period of increasing student numbers, the overall school-age population is expected to be flat over the next 30 years, translating to less overall demand for schools (Figure 27). However, there will be local areas with growing student populations that will require investment. For example, almost 20% of schools (369) have capacity utilisation over 105%, while 11% (224) have utilisation of less than 50%. The challenge will be allocating scarce funding to spaces that are needed while right-sizing assets in declining areas to match demand.[80] Otherwise, we risk an ever-growing, and potentially unaffordable number of classrooms.

It isn't all about demographics. Faster internet speeds and disruption from the COVID-19 pandemic led to more people working from home, which reduced demand for transport services. Commercial infrastructure providers that need to make a profit have a strong incentive to respond when demand starts to weaken. In the gas sector, for example, gas distributors are considering how to right-size their networks due to declining gas reserves and customers switching fuels.

Figure 27: **Stats NZ projection range for New Zealand's school-age population**



Source: Stats NZ population projections by age and sex and Long Term Data Series.

Key actions

- **Ensure slow-growing or declining communities don't build ahead of demand.** In some cases, they should 'pull back' service levels to improve affordability for remaining residents.
- **Consider multiple future scenarios in long-term asset management and investment plans.** Planning for different levels of growth, or no growth at all, is crucial to guide what investments might need to happen when. This also includes setting aside funds required for decommissioning assets when there is insufficient demand to maintain them.
- **Consider asset recycling within networks.** Infrastructure providers, particularly central and local government, should look for opportunities to optimise their portfolios and shift resources towards high-growth areas, while also ensuring equity of access.

4.2. Making maintenance and renewals the first investment priority

Kia noho ko te tautiakinga me ngā whakahounga te whakaarotau haumitanga tuatahi

Context

Nothing is more certain than maintenance and renewals. Most of the infrastructure we will need over the next 30 years already exists. As kaitiaki, or guardians, our job is to look after these buildings and networks and hand them over to future generations as assets, not burdens. This means doing the basics well and setting aside money for renewals rather than prioritising new builds or enhancements. If we don't, service levels will decline and communities will be on the hook for costly reactive repairs.

Agencies need to develop mature asset management systems and plans, not just 'build and forget'. Asset management is the coordinated activity of an organisation to realise the value from its assets. It means having the right things, in the right place, at the right time, managed by the right people. The IMS, through a Cabinet circular, sets expectations for how agencies should manage their existing assets.[81,82]

Parts of the system work well, but there is significant room for improvement. There are numerous high-profile examples of why New Zealand was ranked fourth to last in the OECD for asset management in 2023,[83] including visible symptoms of neglect like sewage leaks in hospitals, leaky classrooms and mouldy army barracks.

Protecting infrastructure against risks is also an asset management challenge. Planning for, mitigating, and responding to natural hazard events and other threats forms part of the long-term cost of providing and operating infrastructure. When a damaging event occurs, renewals that might otherwise have been required many years later often need to be brought forward, increasing financial and operational pressure. Major events like earthquakes and cyclones happen infrequently, but they can be extremely costly. Infrastructure providers must also account for cybersecurity risks and other malicious threats that can disrupt the safe and reliable operation of their assets. New Zealand's National Risk Register, which identifies 28 nationally significant natural hazards and threats, provides an important framework for understanding and preparing for these risks.

> "Renewals and resilience investment will become more important into the future as existing assets age, growth potentially slows, and climate pressures intensify. This will require a shift in how and where we invest."
>
> **Wellington City Council submission**

Strategic direction

Government agencies understand what assets they own and how those assets are performing

The first rule of asset management is to understand your assets. Central government infrastructure providers should maintain asset registers with information such as the location, condition and risk exposure of their service-critical assets. Agencies should use this information to understand how the condition of their assets will change over time.

Agencies should manage their infrastructure to deliver expected 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 their assets are resilient to significant risks.

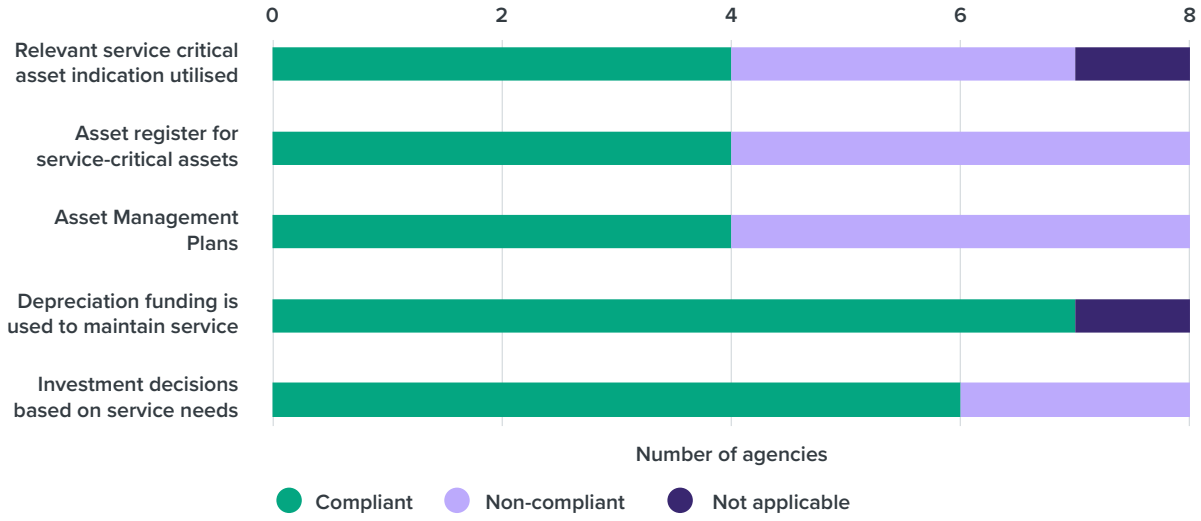
Asset management standards are followed consistently across government

New Zealand must get better at asset management. At present, asset management maturity varies between sectors, and tends to be lowest for central government social infrastructure providers like health, justice and education (Figure 28).[84] Contributing factors include a lack of understanding and awareness of the importance of asset management, inadequate information on assets, a lack of transparency and accountability, and insufficient enforcement of best practices.

Capital-intensive agencies should consistently meet basic asset management requirements. A small number of entities manage a large share of public assets, so improving their performance would significantly lift system-wide outcomes. As of June 2025, four of eight capital-intensive agencies reported that their asset registers did not meet required standards, and four lacked asset management plans to guide strategic, tactical, and operational decisions (Figure 29).[85] Because this information is self-reported, actual performance may be weaker. Several agencies also noted that compliance varied across asset classes, meaning headline results may mask gaps within portfolios.

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

Figure 28: **Capital-intensive agencies' self-reported compliance with Cabinet Office circular CO (23) 9 Investment Management and Asset Performance requirements**



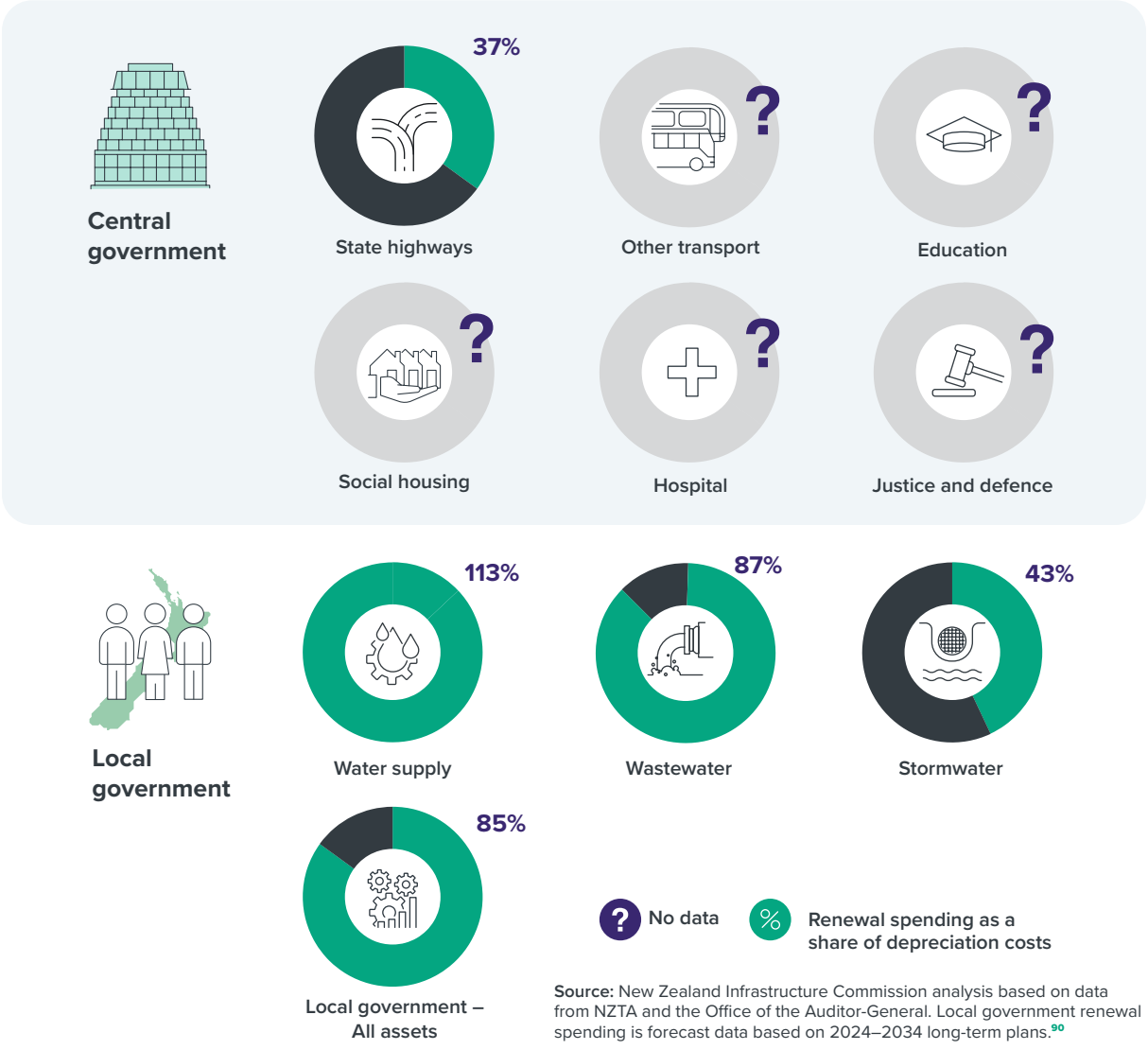
Source: The New Zealand Infrastructure Commission analysis of June 2025 CO (23) 9 chief executive attestation statements from a total of eight agencies (New Zealand Defence Force and Ministry of Defence submitted a joint attestation).

Agencies should use funding intended for maintenance and renewals on maintenance and renewals. Most agencies receive ongoing output expense appropriations that should generally cover the ongoing costs to provide needed assets, including maintenance, renewal and risk management, but excluding costs to meet rising standards.[86] The Cabinet Office circular on investment management sets an expectation that agencies use depreciation funding to ensure that the levels and methods of service enabled by the agency's assets reflect its strategic intentions.[87]

Central and local government need to lift spending on renewals to compensate for periods of underinvestment. Renewal expenditure on state highways, for example, averaged only 37% of reported depreciation between 2012 and 2022 (Figure 29),[88] although operating spending for pavement maintenance would push up this ratio. The lack of publicly comparable data for other major asset portfolios, including schools, hospitals, courts and prisons, makes it difficult to have confidence that central government infrastructure is being appropriately managed. For instance, past under-investment in the defence estate has left assets in poor condition and prone to failure, driving reactive maintenance costs sharply upward. As of March 2024, the maintenance and renewal backlog – work that should have happened but didn't – was estimated at $480 million.[89]

We need better data on the state of public assets

Figure 29: **Renewal to depreciation ratios for publicly owned network infrastructure sectors**



Source: New Zealand Infrastructure Commission analysis based on data from NZTA and the Office of the Auditor-General. Local government renewal spending is forecast data based on 2024–2034 long-term plans.[90]

Agencies should transparently report what they spend on maintenance and renewals. This rarely occurs at present, making it difficult to know whether funding intended to maintain and renew infrastructure is being diverted to other pressures. Clear reporting is necessary to assess whether maintenance and renewals are adequately funded and whether depreciation funding is being used as intended. Introducing disclosure requirements for central government would align it with the obligations already placed on local government and commercial entities regulated by the Commerce Commission.

Other indicators are also needed to understand how well assets are being looked after. In addition to financial metrics, agencies should transparently report on how they are performing against their long-term asset management and investment plans. This should include a focus on service performance and risk measures like asset condition, use, insurance coverage, and exposure to natural hazard events and climate change. Greater transparency can lead to improved asset management practices and decision-making. It also allows the public to understand how agencies are managing assets on their behalf.

Source: Jeremy Town, Truestock

Prioritise adequate maintenance and renewals

Forward Guidance: We expect spending on infrastructure to go from just over $20 billion per year to more than $40 billion per year by the 2050s. Around 60% of this should go towards renewing and replacing what we already have. For sectors and areas with little demand growth, the figure could be even higher.

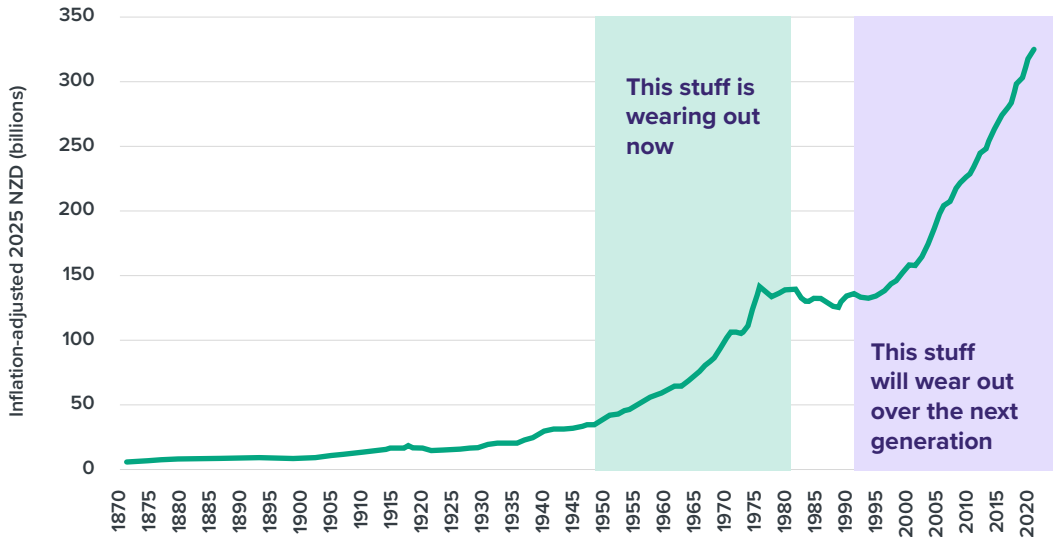
What's the problem?

New Zealand is one of the worst high-income countries in the world at looking after its existing infrastructure. Central government agencies have consistently underfunded maintenance and renewals, resulting in visible problems like leaky hospitals and police stations, mouldy barracks, and potholes. This undermines public confidence and prevents our infrastructure networks from being able to deliver the levels of service they were built to provide. Routine maintenance is more cost-effective than costly catch-up programmes, so setting up good practices will free up resources for other needs.

Previous generations have left us with more than $330 billion worth of infrastructure, most of which was built after 1950.[91] With the first big wave of post-war buildings and networks now reaching the end of their usable lives, we need to invest wisely to ensure we're handing over rebuilt and well-maintained assets, not burdens, to future generations of New Zealanders.

This is complicated by poor asset management. Knowing what you own – and what condition it's in – is a basic requirement of good stewardship, yet many agencies have inaccurate or incomplete data. Inconsistent reporting means we can't tell how much is being spent on maintenance and renewals, as opposed to new infrastructure or service upgrades. This makes it hard to keep track of whether agencies are spending depreciation funds on their existing assets. Depreciation is a financial measure that functions as a proxy for how fast an asset is wearing out.

Figure 30: **Estimated financial value of New Zealand's infrastructure, 1875–2022**



Source: 'Nation Building: A century and a half of infrastructure investment in New Zealand'. New Zealand Infrastructure Commission. (2025).

Key actions

- **Ring-fence depreciation funding.** Central government agencies that receive depreciation funding should spend it on their existing assets. This is an expectation in an existing Cabinet Office circular, but it is not always met. There are many ways to achieve ring-fencing, but the key outcome is that funding is applied to existing assets as intended. To provide discipline there needs to be transparent reporting and monitoring in place to ensure agencies aren't diverting depreciation funding to other needs.
- **Direct agencies to identify unfunded renewal projects.** Not all agencies receive tagged depreciation funding. Even for those that do, it might not be enough to cover the cost of a renewal project due to changing asset valuations and cost inflation. Agencies need to have mature asset management and investment plans that identify when their buildings and networks will require rebuilding or remediation. These projects should be the 'first call' for any new funding.

Agencies better understand risk and invest in cost-effective resilience

Infrastructure needs to become more resilient to the wide range of risks New Zealand faces. Between 1960 and 2022, New Zealand incurred average annual reported losses equal to almost 0.6% of GDP from natural hazard events, making us the second most vulnerable country in the OECD.[92] The 2023 North Island weather events alone are estimated to have caused between $9 billion and $14.5 billion of damage.[93] Infrastructure providers must also consider the wider range of hazards and threats in New Zealand's National Risk Register, including earthquakes, flooding, cyber-attacks, supply chain risks and foreign interference.[94] In 2023/24 the National Cyber Security Centre received 22 cyber-incident reports each month targeting nationally significant organisations like critical infrastructure operators.[95]

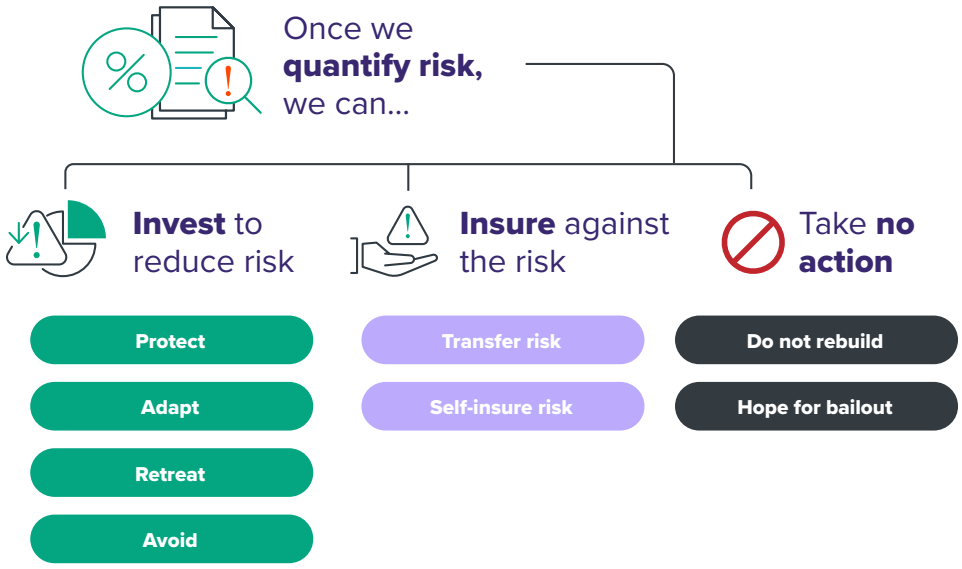
Infrastructure providers should take a proactive, cost-effective approach to identifying and managing risk. New Zealand has traditionally taken a reactive, costly approach to responding to events instead of addressing risk in advance. Infrastructure will never be invulnerable to risks and hazards, but asset owners should take steps to identify and address their exposure and vulnerability (Figure 30). Options include avoiding hazard-prone areas in the first place, building to higher design standards, employing protective measures like stopbanks, or incorporating nature-based solutions like wetlands for flood control.

Resilience investments need to be proportionate. Building infrastructure that is less vulnerable to hazards and threats may help to reduce the cost of responding to events and free up public investment for other priorities. But it is equally important that we do not overinvest in resilience as it will come at the expense of addressing other demand pressures. With limited resources, we need to target the most cost-effective risk-management solutions.

Insurance costs should help prioritise resilience investments. For infrastructure providers that insure their assets (including some forms of self-insurance), rising premiums can sharpen their 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 (Figure 31).

The most cost-effective option for managing risk should be chosen

Figure 31: **Alternative approaches to manage risk to infrastructure and communities**



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

Further work is needed to adequately address risks facing central and local government infrastructure. Budget reporting highlights the future cost of responding to natural hazard events as an unquantified fiscal risk.[96] 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.[97] Current coverage levels are not known but rising premiums make coverage less affordable. When central government infrastructure is under-insured, additional Crown funding will be needed to pay for any damage. The Crown is also expected to pay for 60% of the cost of repairing essential local government infrastructure damaged in an event.[98] It also has an interest in ensuring that risks to property, such as flooding that is expected to worsen with climate change, are proactively managed.

> Without a clear understanding of asset condition and exposure, government agencies and communities cannot plan proactively for resilience nor make informed decisions about relocation, reinforcement, or decommissioning.
>
> **Raukawa Charitable Trust submission**

Source: Vaughan Brookfield, Truestock

Identify cost-effective flood risk infrastructure

Forward Guidance: Storms and flooding will become more severe and frequent over the next 30 years due to climate change. Infrastructure investment will be needed to respond to damaging events and to improve community resilience. The challenge is to prepare proportionately and cost-effectively for a more volatile future.

What's the problem?

More than 750,000 New Zealanders live in areas vulnerable to a one-in-100-year rainfall flooding event, with around $235 billion worth of buildings exposed.[99] The risk from flooding and coastal inundation is rising as our towns and cities continue to expand and the climate warms.

As exposure increases, residential insurance premiums – which more than tripled in inflation-adjusted terms between 2010 and 2025 – may become prohibitively expensive or even unavailable in especially vulnerable parts of the country.[100] For highly exposed communities, their long-term viability may depend on taking cost-effective steps to improve resilience to flooding. This won't be the case for most places, meaning building flood protection infrastructure everywhere to manage risk is neither necessary nor cost-effective.

The Commission worked with Earth Sciences New Zealand to understand the exposure and severity of flood risk events likely to happen in New Zealand over the next 50 years. Risk – based on the change in average annual expected damage to private properties – is projected to increase most sharply for regions like Nelson-Tasman, Bay of Plenty and the West Coast. Coastal flooding from sea level rise is expected to be a larger driver of increased risk than more intense rainfall flooding events.

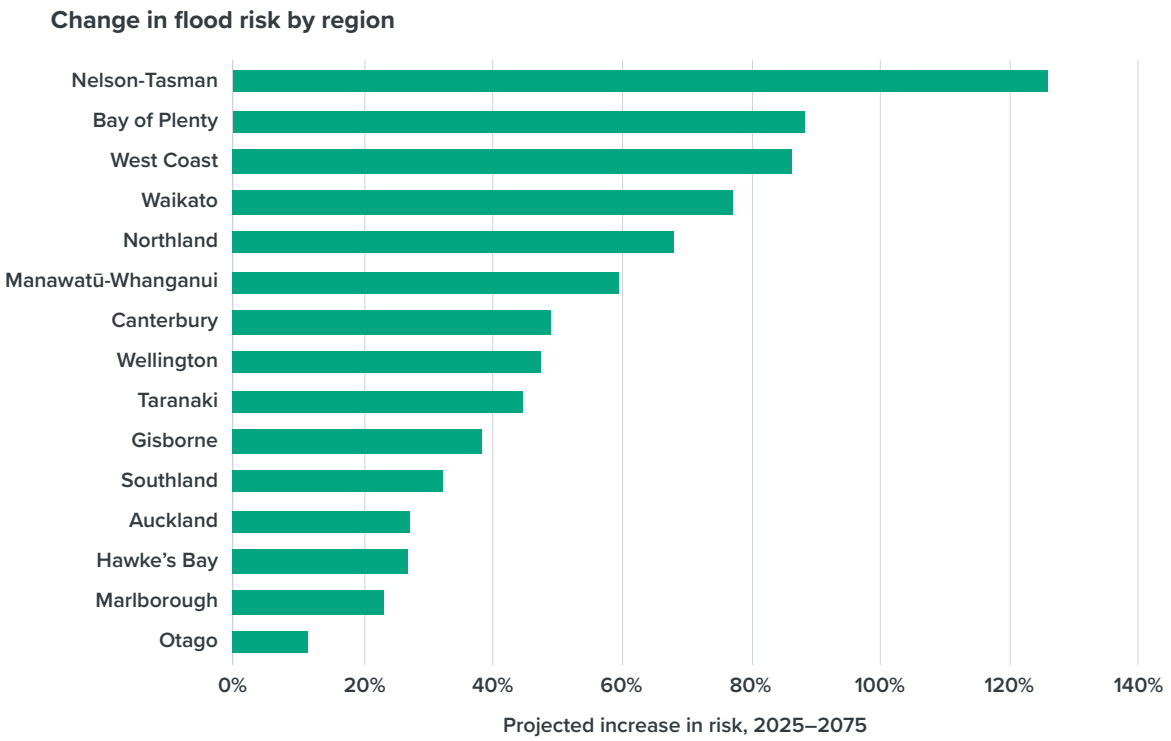
Local government is on the front line. Councils own and operate most stormwater and flood-protection assets, and many systems need strengthening. Well-targeted upgrades can deliver large benefits. For example, a $4 million upgrade to the Taradale stopbanks near Napier may have prevented as many as 10,000 homes from flooding in Cyclone Gabrielle.[101]

Not all investments will be this cost-effective, especially considering the infrequent nature of severe flooding events. Communities must weigh options such as upgrading infrastructure, limiting development in high-risk areas, improving hazard data, using insurance to transfer risk, or – in some areas – pursuing managed retreat. The planned requirement for Local Adaptation Plans can help structure these choices.

Central government has a direct stake in managing flood risk. As the largest infrastructure owner and investor, it benefits when communities and assets such as state highways, schools, and hospitals are better protected. Consistent, stable expectations, and clear co-funding settings all influence whether councils can act early or are left responding after disasters.

Taken together, sensible near-term steps would help New Zealand get ahead of escalating flood risk, rather than continually rebuilding after each storm.

Figure 32: **Rising regional exposure to flood risk**



Note: Change in flood risk represents the change in estimated average annual losses to private buildings. **Source:** Infrastructure Commission's analysis of Earth Sciences New Zealand modelling for the Commission.

Key actions

- **Amend the Local Government Rating Act 2002** so councils can levy targeted rates on Crown-owned properties for natural hazard risk reduction investments. While Crown properties are mostly exempt from paying rates, the Act allows councils to charge them for water, wastewater and refuse services. Extending this to cover natural hazard events would provide a new revenue stream for flood protection and other risk reduction infrastructure.
- **Improve access to high-quality natural hazard data** so councils and communities can make more effective, affordable decisions and better manage insurance pressures. This will also support greater coordination to manage flood risk hazards.
- **Ensure Government co-funding goes to well-designed, proportionate projects** by requiring schemes to be assessed through the Infrastructure Priorities Programme.

Recommendation 3

Long-term investment planning

Introduce legislative requirements for capital-intensive central government agencies to prepare and publish long-term investment and asset management plans aligned with the Government's fiscal strategy.

Responsible agencies: The Treasury (for PFA reform/ policy work), capital-intensive agencies (to develop asset management and investment plans)

Timeframe: Commence policy work in 2026 with long-term plans to follow.

Implementation Pathway

This could be implemented by:

- Amending the Public Finance Act 1989 (PFA) to require capital-intensive central government agencies to produce and publish 10-year asset management and investment plans every three years.
- Requiring plans to include multiple investment scenarios, including at least one that is aligned with the Government's expectations of funding for that sector and one that is aligned with the Commission's independent assessment of infrastructure needs (Forward Guidance).
- Requiring plans to identify the drivers of investment, including asset renewal or replacement, changes in population, changes to levels of service, or responses to risks.
- Ensuring plans are integrated with the fiscal management approach, Investment Management System and related Budget processes.

Recommendation 4

Predictable Government funding signals

Extend the horizon over which Government plans its infrastructure funding intentions and communicate these intentions to agencies and the public.

Responsible agencies: The Treasury

Timeframe: Subsequent to agencies' long-term asset management plans being in place.

Implementation Pathway

This could be implemented by:

- Government, supported by advice from the Treasury, using agency long-term asset management and investment plans to make decisions about its infrastructure funding intentions across the Budget forecast period. Funding intentions could either mean sectoral funding allocations or project-specific funding allocations.
- Publicly communicating these intentions through Budget documentation to support project sequencing and investment confidence.

Recommendation 5

Multi-year budgeting

Adopt multi-year budgeting arrangements that leverage and reinforce high-quality infrastructure planning, delivery and asset management practices.

Responsible agencies: The Treasury

Timeframe: Subsequent to recommendation 4 being implemented.

Implementation Pathway

This could be implemented by:

- Establishing multi-year funding arrangements (ie, Budget appropriations) for capable agencies managing repeatable projects or programmes, and/or
- Committing funding for projects beginning beyond the current Budget year where agencies show planning maturity, and/or
- Delegating greater infrastructure project decision-making autonomy to capable agencies within agreed parameters. Agency capability should be determined by independent assessments to ensure high-quality infrastructure planning, delivery, and asset management practices.

Recommendation 6

Asset management performance reporting

Require, through legislation, capital-intensive central government agencies to report on asset information and asset management performance, including progress against their investment and asset management plans.

Responsible agencies: The Treasury, responsible agencies

Timeframe: Commence policy work in 2026 with asset management reporting to follow.

Implementation Pathway

This could be implemented by:

- Amending the Public Finance Act 1989 to require annual reporting on asset information and asset management performance and service outcomes.
- Defining reporting requirements for key asset information and performance metrics for service quality, risk, and delivery progress.
- Introducing assurance processes that use these metrics to monitor improvement.

5 Prioritising the right projects: Choosing new investments that deliver the most value

Te whakaarotau i ngā kaupapa tika: Te kōwhiri i ngā haumitanga hou e puta ai te uara nui rawa

Source: sturti, Getty Images

Summary

- New Zealand's central government investment assurance system is fragmented, inconsistent, and incomplete across planning, asset management, and project delivery.
- This increases the risk that poorly planned or low-value projects proceed while essential renewals and higher-value proposals miss out, and that decision-makers do not receive consistent, independent advice to inform funding decisions.
- The National Infrastructure Pipeline captures data on nearly 12,000 projects, including 44 projects with expected costs of more than $1 billion.
- We cannot afford to build everything in the Pipeline, making robust checks and balances essential for directing limited funds toward the highest-value and most deliverable projects.
- The Commission contributes to this through the Infrastructure Priorities Programme (IPP), which uses standardised criteria to assess strategic alignment, value for money, and deliverability.
- A growing number of organisations are submitting their projects to the IPP, though many proposals still overestimate their investment readiness or overlook low-cost and non-built options.
- Good planning is critical for successful project delivery. Many Budget bids in the last five years lacked complete business cases, or were missing adequate cost-benefit analysis, underscoring weak project preparation.
- To lift the bar on new investments and system performance, a consolidated investment assurance function should be established to bring together dispersed assurance activities, including Gateway reviews, asset management assurance, and pre-investment readiness assessments such as the IPP.
- There is also scope to strengthen the Pipeline. A stronger mandate and consistent information standards would improve its usefulness as a coordinating tool and enhance system-wide project data quality.

5.1. Ensuring comprehensive checks and balances for investment

Te whakarite tukanga whānui hei ārai mahi hē i ngā haumitanga

Context

The central government assurance system for infrastructure investment and performance is fragmented and inconsistent. Without a comprehensive system of checks and balances across the investment lifecycle – from long-term asset management and investment plans to the planning and delivery of individual projects – we risk spending our limited infrastructure budget on low-quality investments. As a result, essential renewals and maintenance may miss out.

Decision-makers aren't getting all the information they need to assess how agencies are managing their infrastructure. Good assurance systems ensure decision-makers have access to independent, robust assessments to guide investment choices. The existing Investment Management System isn't fully meeting this aim. For example, there is no formal, standardised process for assessing long-term asset management and investment plans, or how agencies are looking after their existing assets in practice.

There is widespread non-compliance with core investment management standards. Agencies are required under a Cabinet Office circular to follow these rules, including the Better Business Case framework setting out a multi-stage planning process for major projects. Over the last five Budgets, half or less of the infrastructure-related initiatives assessed by the Treasury's Investment Panel had gone through a complete business case process before seeking funding (Figure 33). Less than a quarter typically provide cost-benefit analysis of their preferred option.[102] The criteria used to assess Budget bids for new capital spending can also change from year to year, which makes it difficult for agencies to plan to consistent standards.[103]

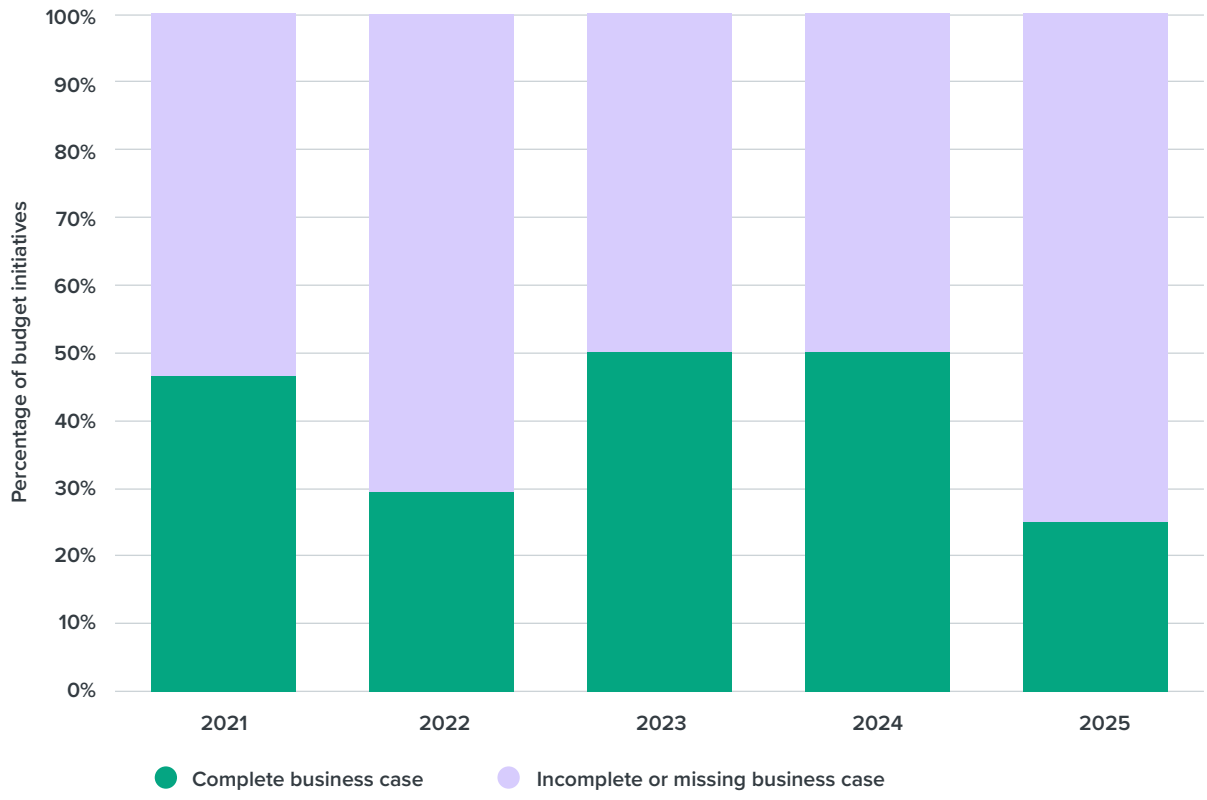
Gateway reviews for high-risk projects are of limited use as investment advice. The reviews, which are required by the Treasury and carried out by independent experts, generally assume that a project will proceed, rather than testing whether it should. Because they are not conducted with Ministers as the primary client, they do not consistently provide clear advice on core considerations such as cost, value for money, deliverability, or investment readiness. Instead, Gateway reviews tend to focus on project-specific issues raised in internal interviews, making them more useful for the commissioning agency than for decision-makers.

Major projects carry outsized fiscal and delivery risks, yet decision-makers aren't routinely getting robust independent assessments. The National Infrastructure Pipeline includes 44 megaprojects with expected costs of more than $1 billion, accounting for 52% of the total value of the Pipeline. Decisions on whether to progress projects of this scale will shape our ability to fund other priorities. Yet there is no mandated process to assess whether projects address the right problems, represent the most cost-effective options, or are ready to deliver. There is also limited public transparency. A review of 27 large public-sector projects found that key project documents, like business cases and assurance plans, were inaccessible more than half the time.[104]

Gaps in the assurance system are increasing the risk of bad outcomes. Deliverability problems for projects like New Dunedin Hospital and Scott Base aren't being caught early enough, increasing the risk of cost escalations and delays. This undermines market confidence and delivery efficiency, as high-risk projects can be cancelled or significantly rescoped. The Treasury compiles information on significant investments through its Quarterly Investment Reporting, including budget and timeframe risks. But decision-makers may not have a fully informed view, as the agencies planning and delivering investments are often the ones providing information.

Half of all Budget bids typically have missing or incomplete business cases

Figure 33: **Compliance with business case requirements among Budget infrastructure project funding bids reviewed by the Treasury's Investment Panel from 2021 to 2025**



Source: 'Annual Report'. New Zealand Infrastructure Commission. (2024, 2025).

Strategic direction

Investment assurance is strengthened and consolidated within the Investment Management System (IMS)

Assurance functions should be brought together into a single agency. While the Treasury oversees the IMS, assurance functions are currently dispersed across central government. For example, the Commission runs the Infrastructure Priorities Programme (IPP), the Treasury provides Gateway reviews, and bespoke project reviews are conducted by multiple agencies. Having a single agency responsible for the system of 'checks and balances' would reduce duplication, allow for efficiency gains, and promote a consistent approach to investments as they move through different stages of planning and development. This will be even more important if an asset management assurance function is established.

Decision-makers would benefit from having a single 'source of truth'. The consolidated assurance function should seek to establish clear and enduring minimum standards and assess agency capability to manage their assets and plan new investments. It should also provide objective analysis to support monitoring and advisory functions undertaken by agencies like the Treasury, the Ministry of Transport and the Ministry of Housing and Urban Development. Existing tools like Gateway would benefit from being reviewed to ensure decision-makers are getting the information they need to make informed funding decisions.

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. In future, a stable objective evaluation framework for investment proposals should be used, setting a high bar for value for money, and identifying projects that maximise the benefits achieved from investment under various possible scenarios. This need not preclude, and should inform, advice to Ministers on investment prioritisation tailored to the objectives and priorities of the Government of the day.[105]

> We need to stop planning infrastructure that cannot be funded. Developing business cases for options that cannot realistically be funded is not an effective use of resources.
>
> **Engineering New Zealand submission**

Asset management and investment plans and practices are reviewed to ensure they're working

Long-term asset management and investment plans need to be independently assessed. Agencies should develop these plans with a clear understanding of the condition and performance of their existing assets, and outline what additional infrastructure would be required and possible to deliver under different demand and funding scenarios. Under current settings, plans often lack sufficient supporting evidence and discussion of asset management practices. To lift quality and ensure consistency, the assurance system should independently assess these plans to confirm that proposed expenditure is justified and efficient. Agencies should also meet expected asset management standards, informed by best practice international principles.[106]

Budget decisions should flow directly from these long-term plans. When agencies seek funding for specific projects or programmes, they should be able to point back to their plans to show how proposals reflect demand pressures, emerging risks, or asset performance issues. This reinforces the value of long-term planning and ensures proposals are grounded in a coherent forward strategy rather than developed in isolation.

The assurance system should be strengthened to run the ruler over the asset management practices of capital-intensive agencies. Looking after existing assets and replacing them as they wear out should be a basic requirement for any infrastructure provider, yet the condition of many central government buildings and networks shows that this is not being consistently achieved. Agencies currently self-assess their own level of asset management performance. A dedicated assurance function – empowered to independently review asset management maturity against best practice international standards – would provide a far more reliable and comparable view of performance, particularly in high-value sectors such as health, defence and education.

Agencies with large portfolios of assets should be required to transparently report on how their infrastructure is performing. An independent assurance function should assess performance using standardised metrics, enabling comparisons across agencies and portfolios. As per new guidance from the Commission, reporting indicators should include cost, service and risk performance.[107] For example, agencies should be able to say whether their actual and forecast spending on renewals is in line with depreciation, or report on the number of asset-related service failures in any given year.

Assurance is needed across all aspects of the asset management system. This will ensure agencies treat asset management as an essential business, not an optional compliance activity.[108] New Zealand should learn from and utilise international best practice standards, and ensure agencies are supported to improve their internal capabilities.

Major projects and programmes receive consistent, independent assurance on readiness to invest

Decision-makers need consistent, independent assurance before committing to major projects. The scale of these projects means they can displace essential renewals and other priorities. Independent review helps guard against optimism bias, strategic misrepresentation, cost escalation, weak problem definitions, and pressure to proceed before credible options have been tested. It also strengthens delivery confidence by ensuring solutions match the scale of the problem.

Agencies should be supported to 'think slow and act fast' when planning new infrastructure projects. Good planning sets projects up for delivery success. Projects with robust business cases are less vulnerable to cost overruns, delivery delays, or later rescoping. Proper planning also ensures project options aren't locked in and announced prematurely, and that low-cost and non-built solutions are properly considered. In Australia, the Grattan Institute found that prematurely-announced projects – announced prior to a full funding commitment or regulatory approvals – accounted for more than three quarters of cost overruns despite making up only a third of assessed projects.[109]

Project readiness should be tested at key stages in planning. High-quality assurance needs to occur at the stages with the greatest influence on outcomes: defining the problem, developing credible options, and selecting the preferred solution. The Treasury's Better Business Case guidance provides these checkpoints, but reviews need to be applied more consistently and with greater rigour. Scrutiny of early-stage planning through Strategic Assessments and Indicative Business Cases is particularly important as these stages determine whether major projects proceed, are rescaled, or are set aside. Review at the Detailed Business Case stage is needed to confirm that the right solution is being funded.

Projects should be reviewed against standard criteria that enable comparison and prioritisation. Existing tools offer useful checks, but their scope varies and they do not apply a common set of criteria across all proposals. International best practice is to assess projects against a consistent framework for strategic alignment, value for money, and deliverability.[110] Applying this consistently would give Ministers a clearer basis for comparing options, identifying risks and prioritising investment. There is a need to improve practices to help ensure the right projects are progressed.

Box 3

Insights from two rounds of the Infrastructure Priorities Programme

The Infrastructure Priorities Programme (IPP) highlights where project planning needs to improve. The Commission has assessed over 120 voluntary applications using the standardised investment-readiness tool. As well as providing an endorsed 'menu' of projects and problems, the results show recurring gaps in strategic assessment, option development, value for money testing, and delivery planning. Strengthening these areas will help ensure projects are proportionate and ready to deliver once funding is confirmed.

Stronger analysis of problems or opportunities is needed

Good project planning begins with a precise, evidence-based understanding of the 'size of the prize'. Clear problem definition anchors the business case: it drives option development, guides proportionate responses, and ensures investment decisions are grounded in need. Across two IPP rounds, applicants identified valid needs but often struggled to define or size the specific problem, making it harder to match solutions to underlying demand.

A stronger focus on cost-effective, best-value solutions is required

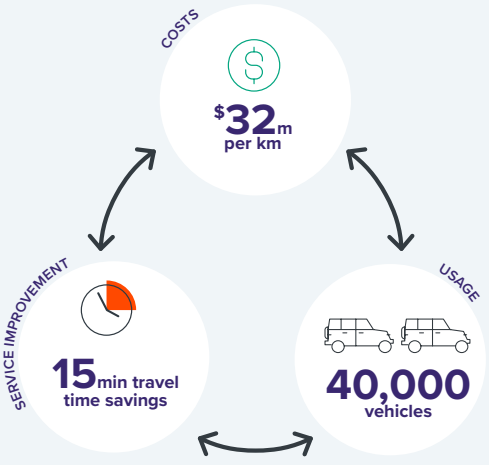
Planning should prioritise the best-value solution, not the most complex one. This means considering a full range of credible options, including staged, non-built and low-cost interventions, testing them with tools like cost-benefit analysis, and timing major investments so they enter service when demand justifies them. Strong option development and value for money testing are essential for managing portfolio affordability.

Many business cases converge too early on a preferred solution. Subsequent analysis is sometimes used to defend a preferred solution rather than to test it, increasing the risk of choosing the wrong approach.

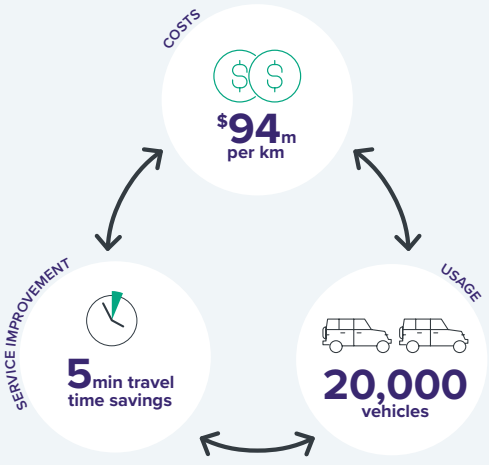
Higher-quality projects also expand funding choices. The Commission's analysis shows that projects delivering high benefits to many users at an affordable cost are far more likely to recover a meaningful share of their costs through revenue tools like tolls (Figure 34). Only a small subset of projects can self-fund, but stronger value for money discipline improves both investment decisions and funding pathways.

Figure 34: **Predicted cost recovery for new toll roads**

Panel A: Factors needed for 100% cost recovery



Panel B: Factors needed for 10% cost recovery



Source: New Zealand Infrastructure Commission modelling. [111]

Projects should set themselves up for delivery success

Strong deliverability planning underpins successful major projects. Deliverable projects start with clear governance, capable leadership, early identification of cost and scope risks, and sound understanding of market and workforce conditions. Planning for implementation must begin early so procurement strategy, design and timing reflect real-world constraints.

Project delivery ultimately depends on agency capability. Business cases offer a window into an agency's delivery readiness, but can only reveal so much. Delivery performance reflects whether agencies have the governance, skills and commercial judgement to make timely decisions and manage risk. Strengthening this capability is essential to improving deliverability.

Planning provides options for responding to shifting Government objectives

Good infrastructure planning gives the Government genuine choices. Different Governments have different investment priorities, but project fundamentals like value for money and deliverability remain essential regardless of changing policy goals. Stronger assurance functions that lead to a diversified 'menu' of high-quality proposals will allow the Government of the day to respond to emerging needs, rebalance regional investment, and pursue different mixes of economic, resilience, social, and environmental outcomes without starting from scratch each time.

Two rounds of the Infrastructure Priorities Programme shows this is achievable. We have endorsed a broad set of proposals across regions and sectors that meet core tests of strategic alignment, value for money, and deliverability (Figure 35). Together, they demonstrate the range of credible choices available: proposals that improve regional freight connectivity, strengthen urban public transport, expand telecommunications resilience and coverage, renew the defence estate, enhance water services, and manage waste more sustainably. This approach can give current and future Governments the flexibility and confidence to pursue their objectives with investment-ready projects.

Project planning offers alternatives for responding to different objectives

Figure 35: **IPP endorsements from rounds 1 and 2**

Applicant	Proposal name	Region	Stage
Auckland Council	Auckland Ferry Fleet and Enabling Infrastructure	AKL	2
Auckland Council	Auckland Level Crossings	AKL	1
Auckland Council	Airport to Botany Bus Rapid Transit	AKL	1
Auckland Council	Northern Busway Enhancements	AKL	1
Auckland Council	Auckland Time of Use Charging	AKL	1
Christchurch City Council	Greater Christchurch Mass Rapid Transit	CAN	1
Christchurch City Council	Improvements to the Greater Christchurch Bus Network	CAN	1
Hamilton City Council	Ruakura Eastern Transport Corridor	WKO	3
Hamilton City Council	Hamilton Public Transport	WKO	1
KiwiRail Limited	Golden Triangle Rail Electrification	NI	1
Multiple Applicants	Queenstown Transport	OTA	1
Palmerston North City Council	Manawatu Regional Freight Ring Road	MWT	1
Queenstown-Lakes District Council	Arthurs Point Crossing	OTA	1
Tauranga City Council	Cameron Road Stage 2	BOP	1
Unaffiliated Individual	Mass Rapid Transit in the City Centre to Māngere Corridor	AKL	1
Waimakariri District Council	Waimakariri Eastern Transport	CAN	1
Department of Corrections	Hawke's Bay Regional Prison Redevelopment Programme	HKB	1
Health New Zealand	Tauranga Hospital	BOP	1
Health New Zealand	Palmerston North Hospital	MWT	1
Health New Zealand	Hawke's Bay Hospital	HKB	1
New Zealand Defence Force	Ohakea Infrastructure Programme Remaining Tranches	MWT	3
New Zealand Defence Force	Accommodation, Messing and Dining Modernisation Linton Project	MWT	3
New Zealand Defence Force	Homes For Families Programme (Defence Housing Programme)	NZ	2
New Zealand Defence Force	Linton Regional Vehicle Storage	MWT	2
New Zealand Defence Force	Future Naval Base Programme	AKL	2
New Zealand Defence Force	Horizontal Infrastructure Programme (HIP)	NZ	1
New Zealand Defence Force	RNZAF Base Auckland 6SQN Facility	AKL	1
New Zealand Defence Force	Draft Defence Estate Regeneration Plan 2025-2040	NZ	1
New Zealand Defence Force	Modernised Army Training Capability - Waiouru	NZ	1
Reserve Bank of New Zealand	Project Waitoa – Vaulting and Processing Infrastructure	NZ	1
Nelson City Council	Atawhai Rising Main Renewal	NSN	1
Greater Wellington Regional Council	Te Mārua Water Treatment Plant Scheme Expansion 1 (Pākuratahi Lakes)	WLG	1
Hamilton City Council	Southern Metro Wastewater Treatment Plant	WKO	1
Nelson City Council	Atawhai Rising Main Renewal	NSN	1
Watercare Service Limited	Auckland Biosolids Servicing	AKL	1
Watercare Service Limited	Wastewater Network Improvements	AKL	1
Chorus Limited	Expanding Fibre Broadband Coverage	NZ	1
Kordia Group Limited	Telecommunications Network Resilience	NI	1
Queenstown-Lakes District Council	Materials Recovery Facility	OTA	1
New Zealand Underground Asset Register	New Zealand Underground Asset Register (NZUAR)	NZ	1
Buller District Council	Westport Natural Hazards	WTC	1
Eden Park Trust Board	Looking After What We Have: A Sustainable National Stadium in an Era of Public Funding Constraints	AKL	1
New Zealand Underground Asset Register	The New Zealand Underground Asset Register (NZUAR)	NZ	1
Tauranga City Council	Tauranga Housing and Business Land Supply	BOP	1

Transport Social Water Communications Waste Other

Note: IPP proposals can be endorsed at one of three stages. Being endorsed at stage one means an applicant has identified a priority opportunity or problem that is ready to be explored in an indicative business case; endorsement at stage two means applicants have identified a shortlist of possible solutions, including low-cost options and can proceed to a detailed business case; being endorsed at stage three means an applicant has identified a preferred solution and has a detailed business case that is ready to seek funding.

Recommendation 7

System-wide assurance

Establish a consolidated assurance function that provides Ministers with a system-wide view of infrastructure planning, delivery, and asset management performance and risk.

Responsible agencies: The Treasury for policy work, agency responsible for the infrastructure investor assurance function to be determined

Timeframe: Consider through CO (23) 9 refresh.

Implementation Pathway

This could be implemented by:

- Integrating existing and new assurance mechanisms into a single Investor Assurance Function located in a single government entity.
- Reviewing and standardising assurance products and reporting formats.
- Ensuring the function has dedicated funding and that advice is independent of proponents.
- Providing Ministers with consolidated system-wide reports on planning, delivery, and performance.

Recommendation 8

Asset management assurance

Establish an assurance function for capital-intensive central government agencies covering asset management and investment planning activities.

Responsible agencies: The Treasury for policy work, agency responsible for the asset management assurance function to be determined

Timeframe: Consider through CO (23) 9 refresh.

Implementation Pathway

Following implementation of long-term asset management and investment planning requirements, this could be implemented by:

- Establishing a new asset management assurance function for central government agencies, which would review agency asset management and investment plans and performance against these plans.
- Developing a standard methodology for assessing plans and performance.
- Embedding requirements for independent assurance of plans and performance.

Recommendation 9

Investment readiness assurance

Strengthen investment assurance by applying a transparent, independent readiness assessment to major Government-funded investment proposals.

Responsible agencies: The Treasury for policy work, New Zealand Infrastructure Commission for IPP

Timeframe: Consider through CO (23) 9 refresh.

Implementation Pathway

This could be implemented by:

- Mandating participation in the Infrastructure Priorities Programme for major Crown-funded proposals.
- Use results of Infrastructure Priorities Programme assessments in the Treasury's advice to Government through the Investment Management System and Budget.

5.2 Improving the quality of project information

Te whakapai ake i te kounga o ngā mōhiohio kaupapa

Context

Accessible information is key for well-functioning markets. The New Zealand infrastructure sector has a low level of digital and data maturity. Prior to the development of the National Infrastructure Pipeline the sources of information about upcoming projects were fragmented and inconsistent. Infrastructure providers naturally focus on the delivery of their current infrastructure projects instead of investing in data assets and systems that will lift their capability to plan and deliver projects over the longer term.

The Pipeline is a transparency tool that provides a single source of information on projects in the planning and delivery phases around New Zealand. Central government agencies, almost all councils, and many private sector firms all feed into the Pipeline. While the process is voluntary, the Pipeline has grown from 21 contributing organisations to 129 since it was established in 2020.

The Pipeline provides details on the funding status of planned investments, as well as when they are expected to happen. This gives the construction sector greater certainty about future market activity, allowing them to prepare accordingly. Project funders can use the Pipeline to coordinate and sequence their investments, with an eye to workforce, supply chain and building materials requirements.

> "Long-term pipeline certainty, with confirmed funding, would enable the sector to build and maintain workforce capability and capacity, and avoid the boom-bust cycle we continue to experience, which is costly to the country and to individuals and their families."
>
> **Infrastructure New Zealand submission**

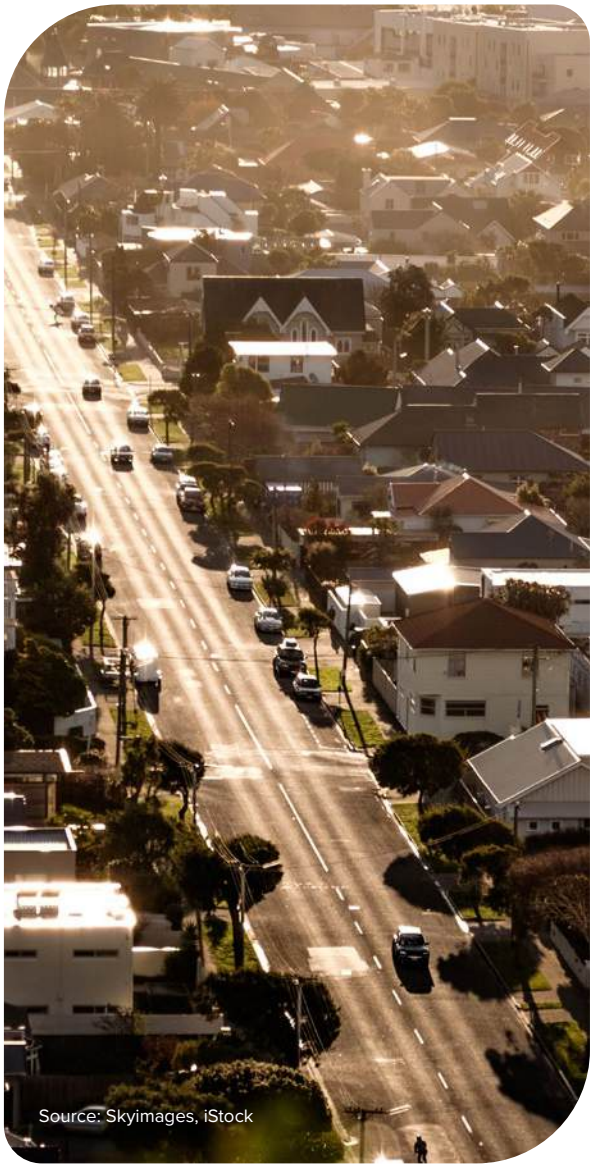
Realising the full benefits of the Pipeline depends on access to timely, quality and complete information. While there have been steady improvements over the last four years, information quality and completeness across sectors, organisations, and data fields remains variable. Information needed to support reviews and assess performance, like up-to-date project spending and completed costs, is difficult to access within a voluntary system. This holds back our ability to learn from projects and improve infrastructure planning and delivery.

Strategic direction

The National Infrastructure Pipeline helps coordinate when and how public investments occur

New Zealand needs to coordinate investment across sectors and between different infrastructure providers. This is particularly important for planning large projects or investment programmes 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, creating upward pressure on costs and additional delivery risks. Bringing together projects in one place helps infrastructure providers understand and identify market capacity constraints or opportunities when there will be more, or less, competition for labour and other resources. A well-informed, well-coordinated delivery pipeline helps achieve a more stable delivery schedule and reduces overall deliverability risk.

Workforce capacity constraints are particularly important after earthquakes and other natural hazard events that damage infrastructure. Rebuilding from these events is usually sequenced over multiple years, rather than delivered all at once. Sharing information through the Pipeline helps infrastructure providers understand collective recovery needs and have robust discussions around regional priorities and project sequencing. 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.

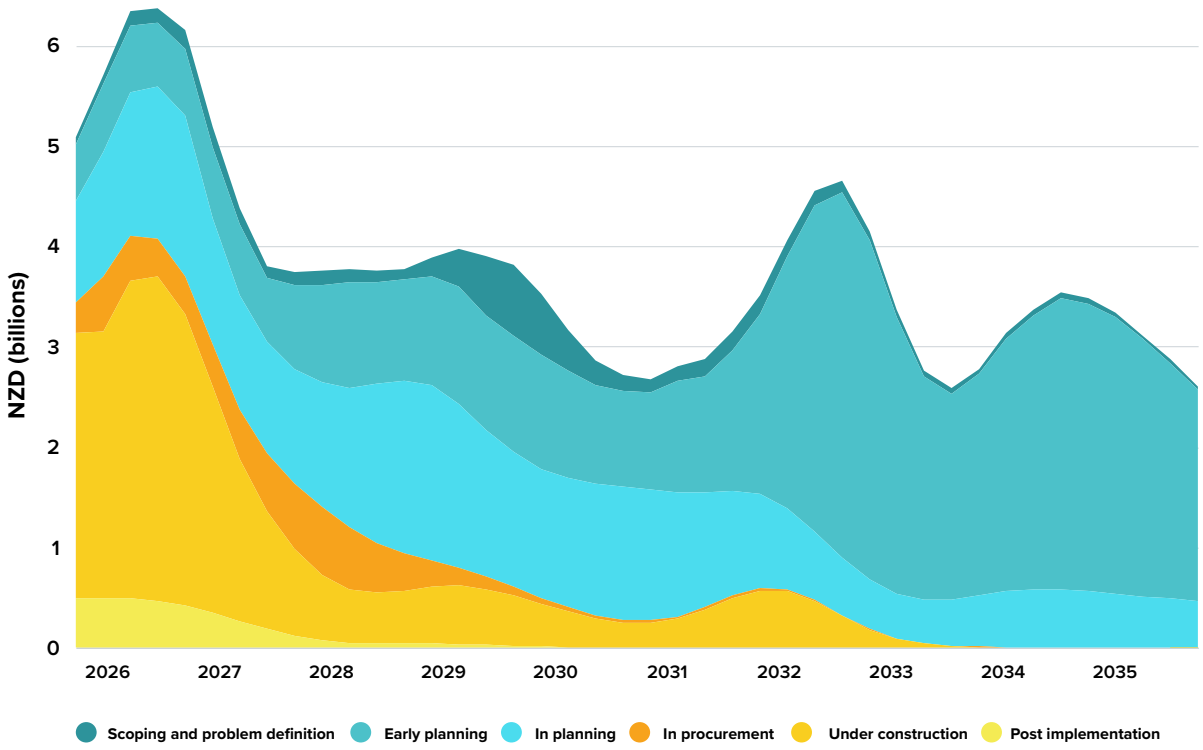


Source: Skyimages, iStock

The Pipeline facilitates coordination between infrastructure providers. 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 information can be presented at a regional or sectoral level, and highlight investment themes, such as initiatives to recover from a natural hazard event.

Most unfunded projects in the Pipeline are in the early planning stages

Figure 36: **Quarterly spending projections for projects in the Pipeline, 2025–2035**



Source: National Infrastructure Pipeline, September 2025. New Zealand Infrastructure Commission. (2025).

Standardised project information collection enables effective portfolio management

Pipeline coverage should be extended to lift performance. Because the existing system is voluntary, submissions aren't prioritised and providers don't have sufficient incentives to invest in the digital and data capability necessary to provide consistent information. A stronger mandate for the Pipeline would lead to ongoing improvements and make it a more powerful and efficient tool for coordinating planning, learning from past projects, understanding market capacity, supporting performance reporting and investment reviews, informing workforce development, and strengthening system-wide evidence.

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 and understand project performance.

The Pipeline supports efficient data collection and reduces duplication across government. Ongoing updates to the Pipeline can be used to gather new information for a specific purpose and integrate with information from across government. Requiring infrastructure providers to provide up-to-date information into the Pipeline will strengthen its application as a coordination tool. Decision-makers would also benefit from having consistent and comprehensive project data to inform their funding decisions.

Recommendation

10

Project information coordination

Require all infrastructure providers to maintain up-to-date data in the National Infrastructure Pipeline and strengthen arrangements for improving data quality over time.

Responsible agencies: The Treasury (lead for policy work) and the New Zealand Infrastructure Commission for implementation

Timeframe: Begin work in 2026.

Implementation Pathway

This could be implemented by:

- Defining the National Infrastructure Pipeline in primary legislation with participation requirements for public and private providers.
- Empowering the Commission to set clear information requirements and standards for project and financial data, including business case information, actual project spend, and post-implementation reviews, thereby driving investment in agency capability.
- Auditing submissions to ensure compliance and completeness.

6 Making it easier to build better: Improving policy, regulation, and workforce capability

Te whakangāwari ake i ngā hanganga pai ake: Te whakapai ake i ngā kaupapahere, ngā waeture me te mātau ā-rāngaimahi

Source: GordonImages, Getty Images

Summary

- Government sets the rules of the game for infrastructure providers. It should smooth the path for infrastructure by creating a well-designed, stable, and enabling operating environment that facilitates new investment, maintains social licence, and reduces unnecessary complexity.
- Infrastructure providers need conditions that support effective coordination across sectors and with other parties, while ensuring they manage any negative impacts.
- Legislative churn can stall development. The resource management system and wider policy environment need to be stable, predictable, and enduring to maintain investor confidence.
- Consistent and transparent processes for reviewing existing policies and consulting on changes help adapt to technological and demand shifts without undermining long-term investment planning.
- Spatial planning should have legal weight as a high-level tool to coordinate land use with future infrastructure development and funding.
- More permissive land-use regulation, including enabling more housing in major cities, remains one of the most efficient ways to maximise the benefits of both new and existing infrastructure.
- Enabling the transition to renewable, reliable, and affordable electricity is essential for economic growth and achieving net zero carbon targets. Government interventions must strengthen, rather than distort, private investment incentives.
- With domestic gas output projected to halve again over the next decade, alternatives will be required alongside a rapid build-out of renewable generation and storage.
- New Zealand's infrastructure workforce of more than 100,000 people will need to grow to meet investment aspirations. Public sector capability must also lift to plan, govern and deliver projects effectively.
- Infrastructure ultimately exists to serve people. Strong, consistent oversight, assurance and consumer protection mechanisms are needed to ensure that investments reflect community values and the needs of New Zealanders who use and pay for infrastructure.

6.1. Making resource management work for infrastructure

Te whakamāmā i te whakahaere rawa mō ngā tūāhanga

Context

Resource management legislation is a crucial framework for infrastructure, as it governs how providers interact with the natural and built environments. Councils apply the Resource Management Act (RMA) when developing their regional and district plans, which contain rules about land use and environmental protection. These plans determine what kinds of development can occur, where they can occur, and the conditions required to manage their environmental effects.

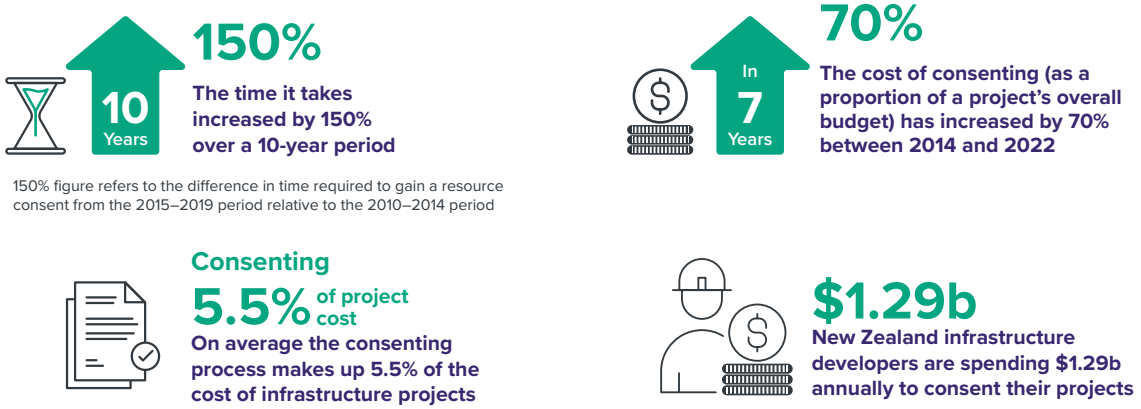
There is widespread concern that the RMA isn't adequately supporting community development aspirations or protecting the environment. The Act, which consolidated dozens of laws into a single, effects-based system, was considered a landmark achievement when it was introduced in 1991. As well as facilitating development and protecting the environment, it was intended to provide better recognition and protection of Māori interests in resource management. In practice, the Act has led to high costs and long delays for consenting much-needed housing and infrastructure projects, as well as environmental failures and inconsistent engagement. The Planning and Natural Environment Bills, which aim to create a more permissive, standardised consenting regime, were introduced as this Plan was being finalised.

Infrastructure providers spend around $1.3 billion each year on consenting. International comparisons indicate New Zealand may be near the upper end for regulatory approval costs. A typical infrastructure project requires a firm to spend, on average, 5.5% of their total budget seeking a resource consent. For smaller projects worth less than $200,000, the figure is more like 16%. Not only has consenting become more complex and expensive, but processing times have also increased (Figure 37).[112]

Land use and infrastructure planning are not well coordinated to meet future demand and make best use of infrastructure. Some councils have developed spatial plans to try and manage future growth in a sequenced, affordable way. But out-of-sequence plan changes and the limited legal weight given to spatial planning in the current RMA system is undermining the effectiveness of this approach. In addition, restrictive zoning limits the number of people who benefit from and pay for existing and planned transport and water infrastructure. This lack of coordination between land use and infrastructure provision has exacerbated housing affordability challenges and increased the overall cost of delivering infrastructure.[113]

A challenging regulatory landscape

Figure 37: **The cost to consent infrastructure projects in New Zealand**



Source: 'The cost of consenting infrastructure projects in New Zealand'. Sapere. Commissioned by the New Zealand Infrastructure Commission (2022).

Strategic direction

The regulatory environment better serves New Zealanders

New Zealand needs 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 making sure the impacts on communities and the environment are well managed.

Regulation should improve outcomes in a cost-effective way. Temporary traffic management, for example, is needed to protect workers and road users while work happens in the road corridor. Increased requirements over the last decade had safety benefits but also imposed higher costs on infrastructure providers. Electricity Networks Aotearoa estimates that the daily cost of temporary traffic management for electricity line work tripled between 2019 and 2024.[114] The system has now shifted to a less prescriptive, more risk-based approach, though it is too early to assess its impact.

Central government should 'smooth the path' for infrastructure by providing enduring, predictable and enabling laws and regulations. Large projects and programmes take years to plan and design. When regulatory or design requirements shift, they must be rescoped, adding costs and delays and undermining the use of standardised, cost-saving designs.

> Stability, consistency, and clarity in infrastructure policy are not optional - they're essential.
>
> **The Connectivity Group Limited submission**

The resource management system is stable, consistent, and easy to work with

The RMA should be replaced with a more effective and efficient system. Key changes should include a focus on regional spatial planning, a smaller number of regulatory plans, setting environmental limits, and enabling infrastructure through national direction. The new system should incorporate existing national directions covering infrastructure, renewable energy and electricity networks.

The resource management system should enable and protect infrastructure. The new system should provide a pathway for managing the impacts of infrastructure that cannot avoid areas where there are environmental limits or significant natural environmental values. It should also set standards for cost-effectively managing the effects of common infrastructure-related activities, such as land disturbance and noise. In addition, infrastructure needs to be protected from the effects of nearby land uses which can limit how assets are operated and maintained.

The system should also protect the environment. New Zealanders value te taiao, the natural environment. Protecting the environment is particularly important for Māori, who have a deep connection with the land, or whenua, and want new infrastructure to improve and integrate into the existing landscape, not damage it. To maintain social licence for development, the new resource management system needs a consistent approach to protecting environmental limits. This may require reviewing the Fast-track Approvals Act to ensure alignment with broader reforms. While the Act has streamlined approvals under multiple pieces of legislation, it has also sparked debate about the balance between economic growth and environmental protection.

The resource management system is supported by sound data and capability

Stronger institutions and clearer capability are essential for the new resource management system to succeed. A clearly accountable entity needs to set, monitor and enforce national standards, while central government must support councils to develop new spatial and regulatory plans. This includes building up its own capacity for spatial planning and developing standard content for land use and natural environment plans.

Good information is needed for good planning, decisions and performance monitoring. Spatial and regulatory plans require integrated geospatial data on environmental values that should be protected, natural hazard risks, existing infrastructure and settlement patterns, and future population and economic scenarios. Central and local government investment is needed to ensure we have robust and consistent data to inform national, cross-regional and local decisions. This should consider the ability of communities with strong regional interests to build up the data and experience needed to participate in resource management processes.

New digital tools can unlock much of the system's potential. A single national geospatial platform integrating plans and real-time consenting information would give infrastructure providers clear signals about environmental limits, hazards and service needs, while supporting efficient monitoring, reducing permitting risk and enabling better research. This would help the reformed system deliver stronger environmental protection and greater economic benefit.

> "...streamlining processes must not come at the expense of proper environmental assessment or meaningful engagement with communities."
>
> **Christchurch City Council submission**

Source: Koon Chakhatrakan, Unsplash

Commit to a durable resource management framework

Forward Guidance: New Zealand is partway through a major transition to a new resource management system. Implementing new legislation, national directions, spatial plans and institutions will take several years. Reworking the foundations of the system multiple times adds significant cost, delays major projects, and weakens investment confidence. A stable approach is needed.

What's the problem?

There is broad agreement that the current Resource Management Act has not delivered the balance between development and environmental protection it was intended to achieve. Successive Governments have sought to reform the system, and despite coming from different perspectives, the most recent efforts share important features: a stronger role for regional spatial planning, fewer regulatory plans, and clearer environmental limits. These areas of alignment offer a solid base for durable reform.

The transition to a new system will take several years and requires new plans, national direction and supporting institutions to be established. When the overarching framework is repeatedly reset, infrastructure providers and councils must constantly adjust project designs and planning assumptions. This slows delivery, increases costs, and makes it difficult to adopt consistent, cost-effective design standards. Frequent system changes also reduce certainty for investors and communities.

A long-term framework that is stable across electoral cycles – open to refinement but not fundamental reconstruction – will provide the clarity needed to plan and deliver major infrastructure over time. Disagreements about aspects of the system such as the role of Te Tiriti o Waitangi/Treaty of Waitangi and the importance of individual property rights can be addressed through amendments, not complete overhauls.

Key actions

- **Commit to improving the new system rather than restarting it.** There is likely to be consensus about reforms to better enable and protect infrastructure. Building on areas of cross-party alignment will reduce rework and support long-term reform.
- **Provide clear expectations for how national direction and plans will evolve.** Stability in rules and pathways will help councils and providers plan investments with confidence.
- **Support implementation through strong institutions and consistent guidance.** Capability, data systems and national direction will help ensure the new system works as intended across regions.

Spatial planning coordinates land-use planning and infrastructure investment

Spatial planning should help align future growth and infrastructure investment. The process involves local and central government, the private sector and mana whenua sharing information and agreeing how a place might change and grow, as well as areas where development should be avoided due to environmental factors or natural hazard events. Spatial planning also provides a vehicle for central and local government organisations to agree on joint priorities for investment. This is particularly important for major transport investments which are 'place-shaping'. Coordination between infrastructure and land-use planning can also help ensure infrastructure is used by as many people as possible.

Current spatial planning practices should be strengthened. Some local authorities are already doing spatial planning, but the level of information, mapping conventions and central government involvement varies. Current plans have little legal weight in the resource management system or funding influence. While there are elements of good practice to draw on, there is significant scope for improvement.

To be effective, spatial planning needs legislative heft and influence on investment decisions. The resource management system reforms aim to give spatial planning legal weight. Aligning laws, institutions, incentives and funding is essential to make spatial planning a useful tool to guide how our cities and towns grow. Current reforms must establish a link between spatial plans and infrastructure investment tools such as the Government Policy Statement on Land Transport, regional land transport plans and council long-term plans. In doing so they can help to coordinate central and local government investment intentions and land-use planning.

Spatial plans should help plan for uncertainty and provide high-level direction. Future trends like population growth or technological change are always uncertain. In the face of this uncertainty, spatial plans should consider multiple possible futures and identify public priorities that help guide individual infrastructure investment and development decisions. Spatial plans are a coordination tool – they don't have to prescribe the exact locations and timing of future infrastructure projects.

Spatial plans should draw on high-quality data. This data on the natural and built environment should be common across other resource management system processes, including regulatory planning. Existing geospatial data should be augmented and standardised where possible, allowing for interoperability between regions. Spatial plans should also be informed by the development of scenarios that capture key drivers of change for a place (such as demographic change and natural hazard risk). Future land use and infrastructure options that respond to these scenarios should be evaluated in terms of their likely costs and benefits.

Spatial planning should inform and be informed by infrastructure investment planning, including the National Infrastructure Plan. The Forward Guidance underpinning this Plan forecasts what a sustainable level and mix of infrastructure investment will look like over the next 30 years, at both a national and regional level. This is based on several drivers of demand, including population growth and the need to renew existing assets that are wearing out. The National Infrastructure Pipeline captures the projects planned by infrastructure providers across New Zealand. Spatial planning should draw on all this information and help to augment it.

Spatial planning can be reinforced by infrastructure providers working together and pricing signals. Coordination between sectors can ensure services are built and operated in a cost-effective way. Road corridors, for example, often accommodate water, energy, and telecommunications networks. Road-controlling authorities therefore try to take a 'dig once' approach, coordinating works across multiple providers to minimise disruption and reduce costs.[115]

Land-use rules allow more people to benefit from new and existing infrastructure

Zoning and other land-use regulations should enable infrastructure to be well used. By clearly setting out what can be built where and at what intensity, land-use regulations directly shape how effectively infrastructure is utilised. While spatial planning identifies where future growth and major infrastructure could go, land-use rules determine the mix of activities in each area, from permitting apartments in one neighbourhood to limiting another to single-storey homes. These rules also influence business operations and other factors that drive how efficiently existing infrastructure is used.

Councils should plan for and enable development opportunities to ensure that growth pays for growth. This requires spatial planning and zoning that facilitates affordable development. The opposite dynamic has been termed the 'Growth Ponzi Scheme', where councils grow in ways that make them less, not more financially resilient.[116] This can happen when the cost of large new infrastructure networks is met by too few users, leaving councils with insufficient development charges and rates revenue to pay for, maintain and ultimately renew all the required roads, sewerage and water pipes.

Rather than expanding networks at great cost, we need to take a smarter approach to enabling housing and business development. Development needs to be enabled where there is existing spare capacity in water and other critical infrastructure networks. New growth infrastructure needs to be accompanied by plentiful private investment, built in line with demand, and paid for using charges that reflect the true cost of new developments.[117]

Source: nazar_ab, Getty Images

Commit to upzoning around key transport corridors

Forward Guidance: Meeting the needs of a growing population will be the second largest driver of infrastructure investment over the next 30 years, after renewing existing assets. Enabling more housing in places with existing or planned infrastructure capacity means more people get to benefit from and pay for the services that infrastructure provides.

What's the problem?

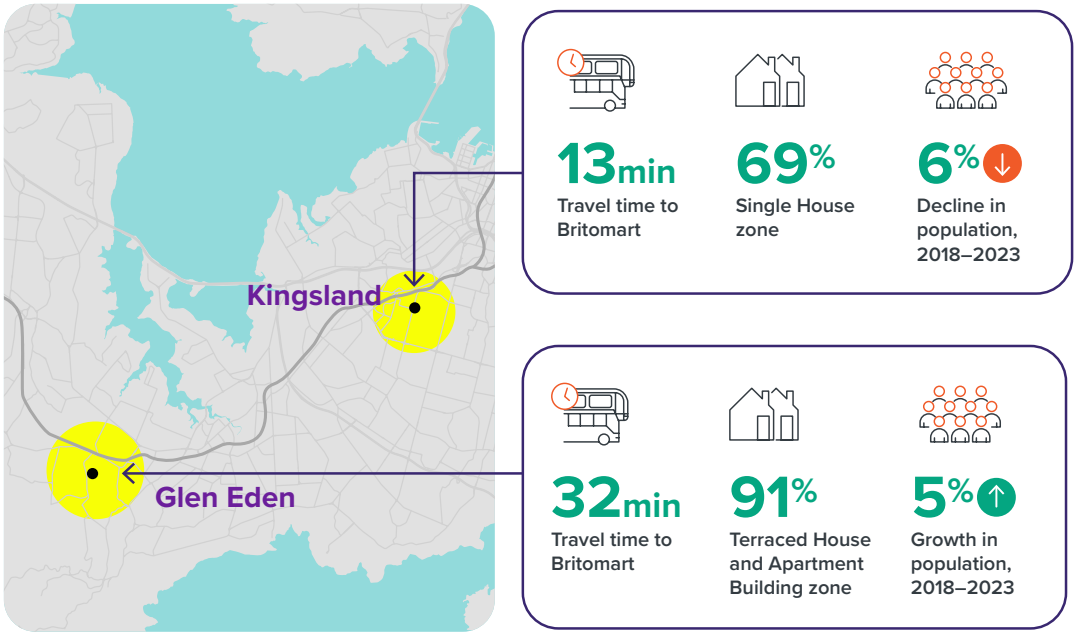
Housing affordability remains a major challenge for New Zealand, particularly in fast-growing urban areas. High house prices reflect a shortage of homes in the places people most want to live. Without sustained increases in well-located housing, prices will continue to rise as the urban population grows.

To meet demand and accrue the economic growth benefits provided by denser cities we need planning rules that don't impose a tight lid on development. We also need our fiscally constrained local government authorities and central government to provide supporting infrastructure without further stressing their balance sheets. Some councils such as Tauranga lose money on growth, spending more to service it than they recover through rates and development charges.[118]

Managing growth costs means enabling development in places that already have capacity in existing or planned networks. A good example is the $5.5 billion City Rail Link in Auckland, which will significantly improve transport access to the inner city. Zoning rules have substantively constrained building new homes and therefore the number of people living near inner-suburban stations such as Kingsland and Mount Eden (Figure 38). Auckland Council is currently progressing a plan change that will allow more homes in these areas, significantly increasing the benefits Auckland gets from this intergenerational investment.

Other cities should follow suit. In Australia, research from Infrastructure Victoria found more consolidated, compact cities had stronger economies and more affordable infrastructure. Their modelling suggested that the infrastructure required to service each home in a more dispersed city cost AD$59,000 (around NZD$68,000) more than in a compact one.[119]

Figure 38: **Aligning development with infrastructure capacity for the City Rail Link**



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'.

Key actions

- **Upzone to maximise the benefits from infrastructure.** Councils should update their plans to allow more people to live and work near major transport projects such as the City Rail Link. More permissive zoning should also be implemented in areas with spare capacity in the water and transport networks, or where capacity can be added cost-effectively.
- **Provide consistent support for enabling policies.** Key frameworks – such as the National Policy Statement on Urban Development and Auckland Council's proposed Plan Change 120 – can provide the certainty councils and developers need to plan and invest for long-term urban growth.

Source: enjoynz, Getty Images

Recommendation 11

Stable resource management framework

Commit to maintaining a stable legislative framework for resource management that enables infrastructure while managing environmental impacts.

Responsible agencies: Ministry for the Environment (lead)

Timeframe: 3–5 years.

Implementation Pathway

This could be implemented by:

- Maintaining an enduring legislative framework that enables infrastructure while protecting environmental outcomes.
- Investing in capability and digital systems for spatial and environmental data.
- Reviewing how the Fast-track Approvals Act interacts with the new resource management system.

Recommendation 12

Integrated spatial planning

Ensure spatial planning within the resource management system aligns infrastructure investment with land-use planning and regulation.

Responsible agencies: Ministry for the Environment (lead)

Timeframe: 3–5 years.

Implementation Pathway

This could be implemented by:

- Developing legislation that gives spatial planning weight in resource management decisions.
- Developing national direction to integrate infrastructure investment planning, including relevant information provided by the New Zealand Infrastructure Commission, into spatial plans.
- Providing national direction on incorporating infrastructure needs, priorities, and funding constraints into spatial planning.

Recommendation 13

Optimised infrastructure use

Set land-use policies to enable maximum efficient use of existing and new infrastructure.

Responsible agencies: Ministry for the Environment (lead)

Timeframe: 3–5 years.

Implementation Pathway

This could be implemented by:

- Advancing resource management reforms to direct spatial planning to consider where development is most cost-effective to serve with infrastructure, and introduce national land-use zones for higher-density mixed-use development near rapid-transit corridors and in other locations where infrastructure can support growth.
- Supporting council plan changes that enable efficient use of infrastructure.

6.2. Accelerating electricity investment for growth and decarbonisation

Te whakatere i te haumitanga hiko mō te tipuranga me te whakaheke tukuwaro

Context

Energy infrastructure underpins economic growth and is central to achieving net zero carbon targets. New Zealand's historically affordable, reliable and low-carbon electricity has been a competitive strength, but the system now faces a decisive transition: expanding the supply and use of low-carbon electricity while managing declining domestic natural gas supplies.

Energy infrastructure faces significant change over the next 30 years. Electricity and gas infrastructure, including electricity generation, transmission and distribution and gas transmission and distribution, must adapt to changing demands. This infrastructure is delivered and operated by commercial entities, coordinated through wholesale energy markets and network pricing mechanisms, and overseen by many agencies and regulators. Government must act predictably in the market-driven energy sector to support consumers, ensuring interventions strengthen rather than distort investment incentives.

The focus of the Infrastructure Commission's advice is on how stronger coordination and predictable, well-targeted interventions can accelerate infrastructure investment.

Energy affordability has come under short-term pressure, and there is an ongoing risk that investment in new generation capacity and storage might lag demand. While fixed-price retail contracts buffer most households and small commercial users, some large energy users may choose to remain exposed to wholesale electricity spot prices. Accelerating investment in renewable generation and storage is essential to restore a more optimal balance between supply and demand and bring average prices down to sustainable levels.[120] Electricity generators are investigating a pipeline of future projects with cumulative capacity of more than 40GW – four times the capacity of existing generation.[121] Having options allows companies to respond when electricity demand increases.

Electricity usage is projected to increase by more than 60% by 2050 to meet emissions targets.[122] Meeting this will require around $26 billion in capital investment above base-level requirements over the next 30 years – or around $835 million per year. Investment will be frontloaded over the next 10–15 years, and the vast majority will need to go towards new generation and associated network upgrades, plus adapting to new technologies and changes in energy use.

Expansion of renewable energy sources can lower prices but it comes with new challenges. New renewable generation can lower average prices and encourage increased electricity use, as it displaces higher-cost thermal generation and reduces reliance on imported fuels. Predictable policy and regulatory settings can reduce financing risk, which in turn lowers the cost of new investment. However, affordable and reliable electricity supply also depends on maintaining enough flexible generation and storage to manage short-term peaks, seasonal peaks, and dry years. As gas declines, this 'firming' capacity is likely to come from a mix of generation sources, battery storage, and demand response mechanisms.

The Government recently reviewed the energy market and is progressing some changes in response.[123] They are progressing a market-led package of reforms, as well as initiating a procurement process for a Liquified Natural Gas (LNG) facility.[124] The Plan, by contrast, focuses on broader initiatives that can drive credible policy settings, strengthen regulatory oversight and support consumers to create a coherent path forward to navigate the energy transition.

Strategic direction

Energy policy guides a shift towards cleaner and more efficient energy use

Investment in new electricity generation, transmission, and distribution is largely demand-driven. Commercial energy companies only commit to projects when they expect them to be profitable. Demand for these projects depends on factors such as population growth, the structure of the economy, and the uptake of new technologies like electric vehicles, heat pumps, and artificial intelligence, which relies on energy-intensive data centres. Achieving the required rate of generation, transmission and distribution network investment requires demand to grow.

Government policy and regulation plays a key role in shaping how households and businesses use energy. It can encourage the adoption of new technologies, such as electric vehicles and rooftop solar, and shift demand toward low-carbon sources by pricing emissions through the Emissions Trading Scheme (ETS). Government regulation also influences our market settings and how our electricity system is operated to balance supply and demand.

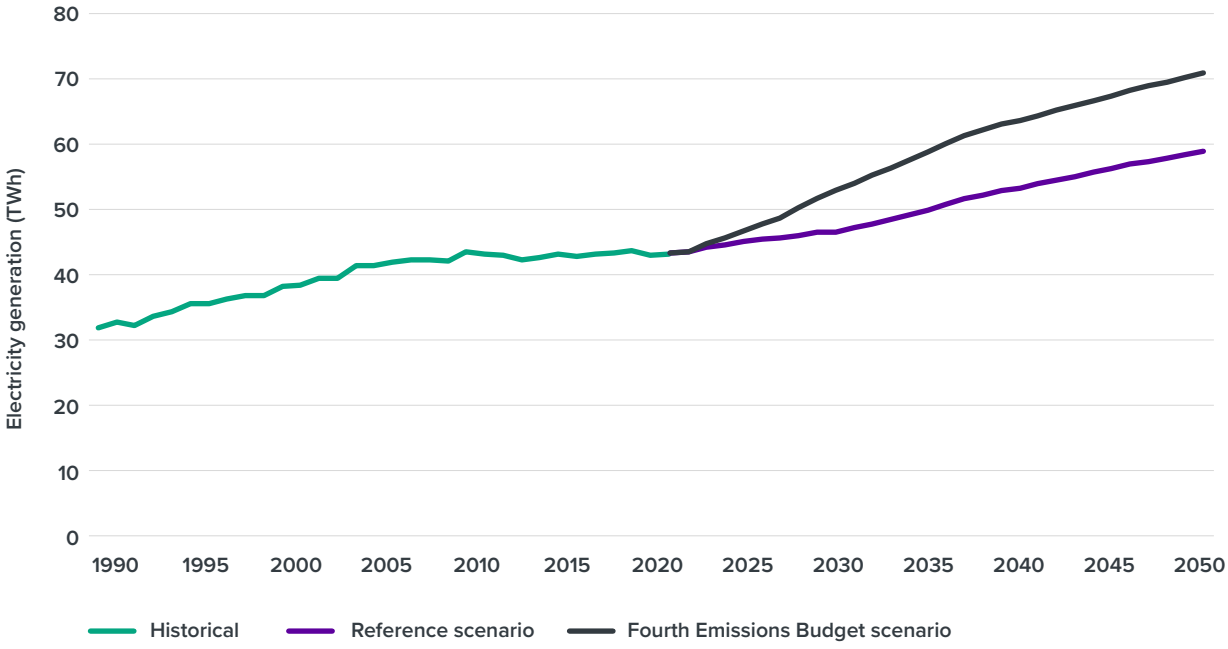
Consistent and credible demand-side policy signals are needed to guide electricity investment. Electricity demand was flat for much of the past 15 years but is beginning to rise as electrification accelerates.[125] Yet uncertainty about how fast demand will grow, partly reflecting energy and climate policy settings, makes it difficult for investors to plan. Climate Change Commission modelling (Figure 39) shows that we need to lift electricity use by 60% to reach net zero targets without limiting economic activity. On current trends, we're only on track for half that increase.

There are pathway choices. Different demand growth paths lead to different infrastructure investment outcomes. To unlock investment to grow our energy supply and other economic activity that depends on it will likely involve committing to a pathway and aligning energy and climate policies and tools to achieve it.

We expect to use a mix of approaches rather than a single silver bullet to drive change in energy use and investment. The ETS, where emitters bid for units that represent a single tonne of carbon, remains the primary mechanism for achieving net zero targets. However, this influential policy tool needs recalibration to provide clear signals that will increase renewable generation, fuel-switching, and energy efficiency. Successive Governments' Emissions Reduction Plans and Energy Efficiency Strategies also recognise a role for complementary demand-side policies to drive targeted gains in areas like transport and industrial energy use. Demand-side programmes play a critical role in addressing rising costs of energy. A smarter, more flexible electricity system could deliver savings of around $10 billion (net present value) by 2050.[126]

Electricity demand needs to rise sharply to meet net zero targets

Figure 39: **Climate Change Commission modelling of alternative electricity generation scenarios**



Source: 'Scenarios dataset for the Commission's 2024 draft advice on Aotearoa New Zealand's fourth emissions budget'. Climate Change Commission. (2024).

Take a predictable approach to electrify the economy

Forward Guidance: New Zealand needs electricity use to grow by around 60% by 2050 to meet net zero targets without constraining economic activity.[127] This requires sustained investment in new generation, storage and networks – supported by stable and predictable policy settings.

What's the problem?

New Zealand's energy transition increasingly resembles a limited-overs chase in cricket: the target is clear, but a slow start would make the required run rate rise sharply later. If uncertainty persists now, the transition will become more expensive, more disruptive, and harder to execute.

Investment signals remain mixed. Gas production is declining quickly, yet the future role of gas in firming and security remains unclear. Uncertainty around regulatory responsibilities, climate policy settings, and the timing of key decisions is blurring price signals and delaying investment in alternative generation and storage. And while long-term demand is expected to rise through electrification, industrial change, population growth and uncertainty about the transition path may itself be delaying the demand commitments investors rely on to proceed.

Despite these pressures, there is broad agreement on the destination: more renewable generation, stronger networks, better demand flexibility, and a managed shift away from gas. What is missing is enough clarity and predictability in the near term to keep investment moving at the pace required.

Key actions

- **Lock in stable, long-term energy strategies so investors can plan with confidence.** This includes clear expectations for the gas transition, security-of-supply reporting, and the role of flexible resources during the shift toward renewables.
- **Align climate and energy policies so near-term progress matches long-term goals.** Policy, regulatory, and market settings should give consistent investment signals, reducing uncertainty and supporting timely build-out of generation, storage, and networks.

Regulatory and financial settings enable timely investment in electricity supply

Government needs to remove supply-side blockages so that growing demand is met with new supply. Resource management reform, discussed earlier, is a key opportunity to unblock supply – but it is not the only step available.

Transparent, timely information on energy markets supports efficient investment decisions. For example, Transpower's recent improvements to data on electricity generation pipelines and grid-connection queues have helped identify and overcome barriers to new projects.[128] As the energy transition continues and new technologies enter the market, ongoing improvements to information will be needed to guide investment.

Government must use its roles to boost, not slow, the pace of new electricity supply. Poorly targeted or non-commercial interventions, like direct public investment in large-scale generation, can crowd out private capital and weaken long-term incentives to invest. If commercial investors think the Government may step in and undercut them, the result will ultimately be less investment and higher prices. However, strategic Government procurement, like long-term power purchase agreements for the energy used by central government agencies, can help boost supply by providing certainty to investors.

Gas users have the information and incentives to navigate the transition

Domestic gas supply is declining rapidly, creating pressure to transition to other energy sources. Production has almost halved over the past decade and is projected to decline at an even faster pace over the next decade (Figure 40). Barring a low-probability discovery of a major new field, gas users – including many industrial firms – will face higher prices and will need to either switch fuels or exit production.[129,130] Sound analysis of the cost of alternative options is needed. For instance, importing LNG may be a commercial option for some individual industrial and other consumers to consider, but it isn't clear that it would lower average electricity prices.

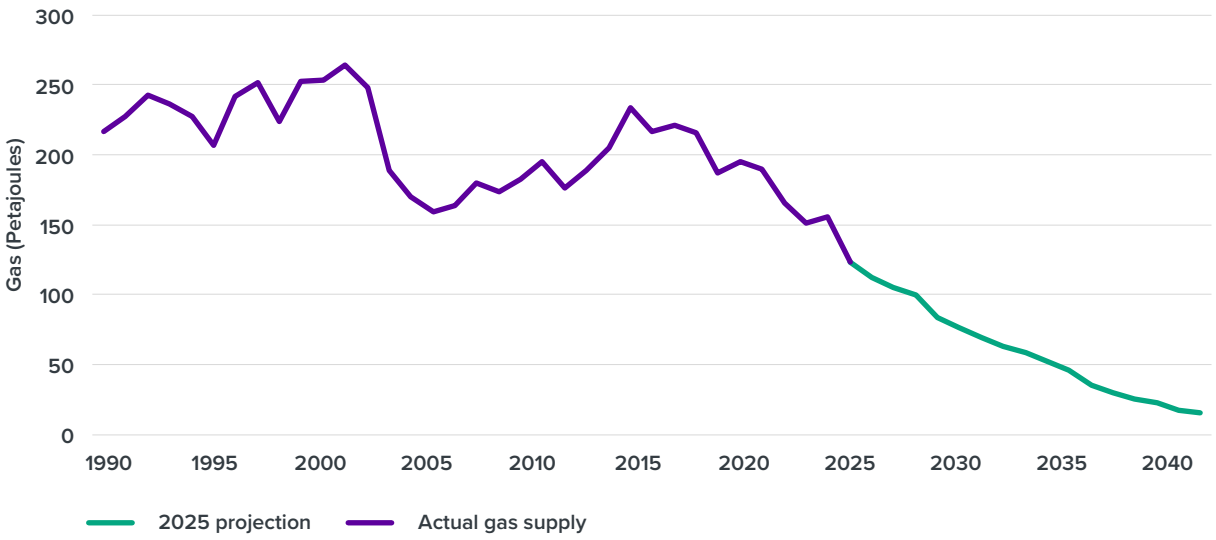
Declining gas supply has affected electricity prices. Gas has traditionally provided fuel for flexible backup generation during sustained periods of low hydro output and during winter peaks in demand. There are opportunities to use some hydro resources differently, transitioning them from baseload generation to be used more as back-up and 'firming' during peak demand and dry years. However, uncertainty about policy settings, regulatory responsibilities and gas availability have confused price signals. This has delayed investment in alternative generation and storage, leading to greater reliance on high-cost coal-fired generation and higher winter electricity prices in the short term.

Managing this transition will require better gas security-of-supply reporting. Current reporting focuses mainly on annual 'best estimate' (proven plus probable, or 2P) gas reserves, leaving energy users and electricity generators exposed to downside risks. More timely and detailed data on reserves, production, and security-of-supply outlooks can help gas users identify and manage these risks.

Industrial and household consumers face the risk of a disorderly transition, if a significant share of gas network customers leave and prices continue to rise. This will have impacts on the owners and users of the gas network, and wider economic and social consequences if more businesses close.[131,132] There are choices about how to manage this transition. For instance, working with businesses and households to accelerate fuel switching from gas to electricity and renewable fuels could support greater energy security while reducing downside risks to existing industries.[133]

Gas production is projected to decline dramatically

Figure 40: **Ministry of Business, Innovation and Employment historical gas supply and 2025 gas production projection**



Source: 'Petroleum reserves data'. Ministry of Business, Innovation and Employment (MBIE). (2025).

Consumers have tools and choices to manage their exposure to wholesale electricity prices

Wholesale electricity prices fluctuate. When output from low-cost renewable sources like wind and solar is high, prices are low. When high-cost generation like coal-fired plants or hydro resources reserved for later in the season are needed, prices rise. This variation provides an essential signal for investment in new generation and storage that reduces average and peak prices over time.

For most consumers, what matters is the average electricity price over time, not short-term peaks. Households and small businesses typically buy fixed-price retail contracts that charge the same price regardless of when they use electricity. These users aren't directly exposed to peak wholesale prices, but they benefit from the investment that high peak prices encourage.

While electricity bills have been rising, new investment and demand management techniques can help reduce costs for consumers. Our modelling indicates significant capital investment in electricity infrastructure will be needed, but there are smarter ways to manage demand locally and regionally which could reduce the level of investment and costs to consumers and lead to greater energy reliability and resilience. Energy use initiatives and programmes, including those developed by the Energy Efficiency & Conservation Authority, can help moderate peaks in demand, reducing the risk of 'scarcity' prices during the winter and dry years, optimising electricity network build and reducing consumer costs.

Large electricity users can choose how to manage exposure to price swings. They may buy hedge contracts that provide insurance against electricity price volatility, or reduce electricity use during periods of high prices. Peak prices will moderate as more large users offer demand-response services and as more fast-ramping resources like battery storage are built.

More participation in and transparent electricity hedging markets can further align demand and supply. They give retailers, generators, and large consumers access to options for managing price risk while improving revenue certainty for backup generation needed to ensure security of supply. Access to hedging products on reasonable terms for reliable or 'firm' generation is particularly important for independent market participants to ensure a competitive market during the transition period to a more renewables-based electricity system. Current

examples include the proposal to use long-term contracts to fund refurbishment of the Huntly coal-fired power station as backup for dry years, and a new standardised super peak hedge product that is traded on the over-the-counter market for future electricity electricity supplies, providing more consistent and frequent pricing information to markets.[134]

Open and accountable oversight keeps public trust in the energy system

Public confidence in the energy system depends on evidence that it is delivering affordable, reliable power and consumers are paying no more than they should. Recent price pressures have raised concerns about market performance, but if investment in new generation does occur, this will restore affordability over time. A contested area is the ownership structure of the 'gentailers' – with some arguing for the Government to divest its retail interests, and others advocating for public ownership, or changes in market structure to separate out retail and generation. Ongoing pricing transparency and strong competition will be essential regardless of ownership model.

There is scope to improve regulatory coherence over the gas and electricity sectors. This would ensure regulatory and market performance and associated settings remains credible and responsive to market trends and technological change.[135] A particular example is the need to provide clear statutory responsibility for security of electricity supply to a regulator or the System Operator.

As technologies and demand patterns evolve, regulatory oversight must keep pace. Our energy system needs to adapt to new technologies and the more challenging balance between centralised and distributed generation. Done well, this can shift the balance toward consumers. Market rules that worked in the past may not remain effective under new conditions. Periodic, independent reviews of market performance and regulatory settings will ensure that oversight remains credible, responsive, and fit for purpose as the energy transition continues.

Recommendation 14

Accelerated electricity investment

Establish clear, consistent, and coordinated Government strategies and policies to accelerate electricity infrastructure investment that supports economic growth and emissions reduction.

Responsible agencies: Ministry of Business, Innovation and Employment (lead), working with industry bodies, and energy and competition regulators

Timeframe: 3–5 years.

Implementation Pathway

This could be implemented by:

- Setting predictable and aligned energy and climate policies that promote uptake of more affordable renewable energy, including a 30-year energy transition pathway.
- Strengthening coordination, monitoring, reporting and regulation of electricity and gas sectors to keep markets competitive, enable new generation, improve market transparency, and improve energy affordability.
- Leveraging Government energy purchasing power to de-risk investment and support technologies that improve demand management and lower costs.
- Ensuring markets and consumers have adequate information and incentives to manage gas sector transition risks.
- Supporting the gas transition with better and more timely gas security-of-supply reporting, as well as giving urgent attention to working with the market to address transition risks.

6.3. Growing a skilled infrastructure workforce

Te whakatipu i te rāngaimahi tūāhanga whai pūkenga

Context

New Zealand struggles with fluctuations in workforce demand. Our position as a small, isolated island nation with a relatively concentrated construction market, periodic boom-and-bust investment cycles, and ambitions to build significant projects relative to the size of the market makes it challenging to maintain the workforce skills and capability our country needs.

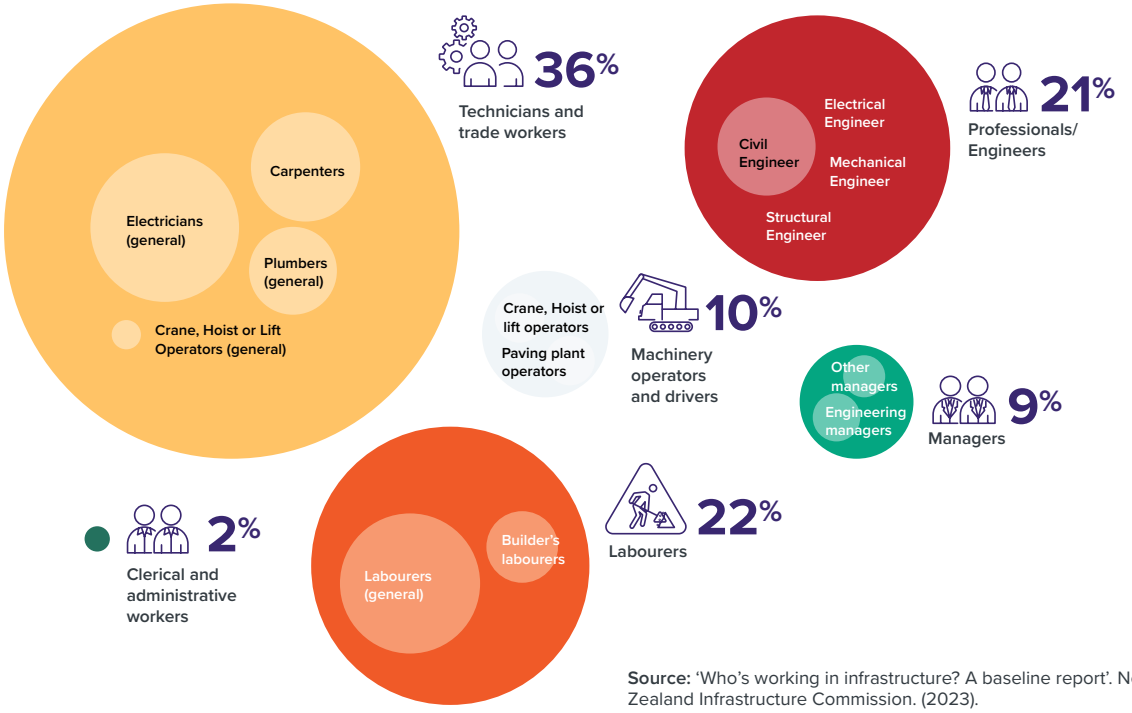
Our workers are mobile domestically and internationally. It is hard to recruit, develop, and retain skilled people when there is significant uncertainty about the volume and smoothness of the forward work programme of civil, commercial, and residential construction work. Sharing a common labour market with Australia, a larger and wealthier country, exacerbates the risk of losing talent. Workforce constraints can limit the ability to deliver what New Zealand needs and drive project cost inflation and risk.

New Zealand needs a workforce that is productive, efficient, and the right size for the job. The existing infrastructure workforce comprises more than 100,000 full-time equivalent workers spread across more than 100 distinct occupations.[136] Different skills are needed in planning, design, construction and maintenance of infrastructure (Figure 41). Across all occupations, 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.

Without the right workforce we won't achieve our infrastructure ambitions. The National Infrastructure Pipeline captures data on $275 billion of planned infrastructure projects. Without the skilled workers and productive construction firms to deliver them, these projects will remain exactly that, plans.

Many different occupations are engaged in planning, designing, delivering, and maintaining infrastructure

Figure 41: **Breakdown of the workforce across all lifecycle stages, 2022–2024**



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

Strategic direction

Workforce planning looks ahead to future demand for skilled workers

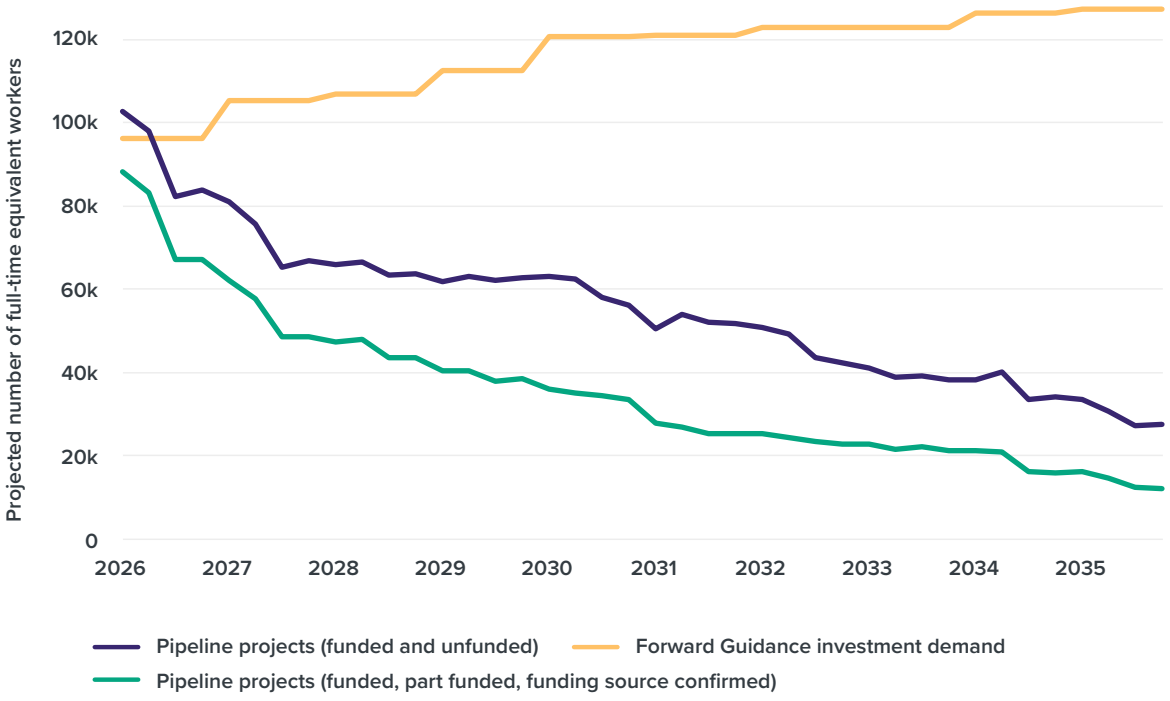
More infrastructure investment will require more workers. The Commission's Forward Guidance can help model the size of the future workforce required to renew and replace our existing infrastructure and build the new assets necessary to meet demand over the next 30 years (Figure 42). Because New Zealand's population will grow older, a larger share of the working-age population will be engaged in the infrastructure workforce. Productivity changes will also have an impact, although this is harder to forecast.

Our Forward Guidance provides a longer-term view that can be useful for workforce policy. Taking a long-term view allows us to match forecast demand for infrastructure with the workforce that would be required to deliver it. This could inform workforce development requirements and activities, such as vocational training and immigration policy settings. In the near term, the National Infrastructure Pipeline coordinates information on specific projects that are in planning, procurement, or delivery, including when these projects are intended to start.

Building capability requires consistent investment decisions. As the single biggest infrastructure investor, central government needs to strive for consistent and well-coordinated investment and to work with the sector to develop the workforce required to deliver on our aspirations. While design and engineering skills can be contracted out, it's important that the public sector becomes a more sophisticated client to support investment in the longer-term capability our country needs.

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

Figure 42: **Future workforce demand to deliver forward investment guidance, compared with workforce demand for infrastructure providers' near-term project intentions**



Source: New Zealand 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. Demand represented in the Pipeline and our Forward Guidance does not fully represent demand from all infrastructure sectors.

The sector establishes broader pathways into the workforce

To meet long-term infrastructure needs, New Zealand must sustain the pipeline of people entering infrastructure careers. In the near term, our capacity to plan, design, deliver and maintain assets is limited by the size, composition and regional distribution of the workforce. Longer term, population ageing means we will need to recruit, retain and develop more workers to keep pace with investment needs. Some technical roles already face pressure: around 30% of electrical engineering and telecommunications technicians are aged 55 or over.[137] Making training and recruitment pathways more accessible and attractive to younger workers will be essential.

Broadening Māori participation across the infrastructure lifecycle is a key opportunity. At present, Māori make up 18% of the overall infrastructure workforce, with higher representation in labouring and machinery operating and driving occupations and lower representation in professional and managerial occupations.[138] Participation is rising across many occupations, and the number of Māori-owned construction businesses increased by over 35% from 2013 to 2023.[139] These firms provide important pathways into training and employment but can face barriers to participating in procurement processes, especially for large contracts.

Lifting women's engagement with infrastructure can also help to grow the workforce. Women account for just 11% of the infrastructure workforce, compared with 47% across the whole economy. Participation is low across most infrastructure occupations – for instance, women account for about one-fifth of professionals, such as engineers, and 15% of labourers.[140] Younger cohorts show similar patterns, indicating that sustained efforts to improve recruitment, retention and progression would be needed to shift participation over time.

Public infrastructure providers build and maintain capability to deliver

Government needs to act as a sophisticated client of infrastructure. A capable workforce is not limited to engineers and trades. Effective delivery also depends on the commercial, governance, and project leadership skills inside public infrastructure agencies. While design and construction work is procured from the market, public infrastructure providers must retain enough in-house expertise to shape scope, oversee delivery, manage performance, and remain accountable for outcomes. These strategic functions cannot be outsourced.

Strong leadership capability is central to project delivery. Large, complex projects depend on skilled project directors and senior responsible owners (typically called 'project sponsors' in the commercial sector) with the judgement to manage risk, align stakeholders, and maintain delivery discipline. Public sector capability gaps in these roles contribute to delays, cost overruns, and repeated project rescoping.[141] We need a sector-wide approach to developing capability through formal training pathways, secondments, and opportunities to progress between projects.

Without clear governance, even strong project teams struggle. Public infrastructure project leaders often operate within fragmented or overlapping governance arrangements that slow decision-making and blur accountability.[142] System reviews consistently identify governance confusion as a driver of delay.[143] Strengthening governance structures for infrastructure projects is therefore as important as improving individual capability.

Agencies should apply consistent capability standards to lift project leadership. The Commission's Project Director Capability Framework provides a consistent national benchmark for the skills required to lead complex projects, supporting recruitment, professional development, and self-assessment across agencies (Figure 43).[144] Complementary guidance supports better appointment of senior responsible owners and helps agencies match project leadership roles to the skills required. Applying these tools helps promote clearer accountability, better role definition, and more consistent project leadership across the system.

> People build projects. If we want better projects, we must invest in the people who lead them.
>
> **Public sector infrastructure leader**

Developing a nationally consistent benchmark for project director capability

Figure 43: **Public sector Project Director Capability Framework**

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

Public infrastructure providers engage the market through consistent, high-quality procurement

Procurement practices need to be strengthened. New Zealand has sound procurement rules and standard form contracts such as NZS 3910 Conditions of Contract for Building and Civil Engineering Construction.[145] However, uneven implementation weakens outcomes from procurement.[146] As a result we rank last in the OECD on a measure of infrastructure procurement governance.[147] Poor scoping, weak commercial judgement, or overly complex tendering all raise cost and delivery risks. Agencies need to run disciplined procurement processes that match approach to project scale and risk and maintain accountability for delivery.

Lifting commercial capability inside agencies, not just relying on external support, is important. Procurement performance varies because agency capability varies. Tender documents are often inconsistent or overly complex, supplier feedback remains patchy, and agencies tend to introduce bespoke contract conditions to the standard-form contract.[148] This creates barriers to wider participation in infrastructure procurement. Meanwhile, collaborative contracting models, like early contractor involvement, can lead to improved contract performance and better project outcomes, but uptake is low and realising the benefits relies upon clear scoping and allocation of responsibilities.[149]

Better procurement depends on clear and consistent expectations. By investing in leadership and procurement capability and applying procurement rules with discipline, infrastructure providers can strengthen supplier relationships, develop capability in the market, and create the conditions for successful delivery.

Recommendation 15

Coordinated workforce development

Align workforce development planning and policy with infrastructure investment and asset management plans and the Commission's independent view of long-term needs.

Responsible agencies: New Zealand Infrastructure Commission; Ministry of Business, Innovation and Employment; Tertiary Education Commission; and others

Timeframe: 2026 onwards.

Implementation Pathway

This could be implemented by:

- Informing workforce development activities with enhanced modelling of labour capacity and workforce demand required to deliver investment intentions in the National Infrastructure Pipeline.
- Using the Commission's independent assessment of long-term infrastructure needs to identify long-term workforce demands.
- Coordinating education, training, and immigration policy settings to address skill gaps.

Recommendation 16

Public sector project leadership

Strengthen public sector project leadership through a consistent, system-wide approach to appointing, developing, and supporting infrastructure leaders.

Responsible agencies: New Zealand Infrastructure Commission and Public Service Commission

Timeframe: 2026–2029.

Implementation Pathway

This could be implemented by:

- Creating a professional standard for public sector infrastructure leadership.
- Designing a cross-agency talent management framework for recruitment, development, and mobility.
- Specifying, and funding, leadership development as a core input to project delivery so capability building is systematic, not optional.

6.4. Improving oversight of infrastructure providers

Te whakapai ake i te whakatātare i ngā kaiwhakarato tūāhanga

Context

Infrastructure exists to serve people. Providing an enabling environment, electrifying the economy and resourcing the infrastructure workforce only matter if the projects being delivered are valued by the people who use and pay for them. If we get it right, infrastructure can set the scene for people to survive and thrive, now and into the future.

People tell us what they value by what they're prepared to pay. Ultimately, all infrastructure is funded directly by users or by society as a collective through taxes and rates. If direct beneficiaries aren't prepared to pay more for service improvements, such as a slightly shorter commute or faster internet, infrastructure providers can use that feedback to determine whether a project makes sense.

Central government is the single biggest infrastructure investor in New Zealand, and the 'referee' for other providers. It has several levers to make sure that infrastructure investment decisions reflect the long-term needs and aspirations of people who use and pay for infrastructure, including oversight mechanisms and economic regulation.

But these levers are only effective if they are informed by a deep understanding of what infrastructure users want and value. Decision-makers need to understand and navigate different views about what's fair to meet the infrastructure challenges ahead. Regularly undertaking representative surveys of New Zealanders is one way of ensuring that community preferences are being met.

Strategic direction

All infrastructure sectors have effective governance and oversight

Effective governance and oversight ensure that infrastructure providers act in the long-term interests of those who use and pay for their services. Because many infrastructure sectors are monopolistic or have limited competition, incentives to invest efficiently or maintain quality can be weak. Providers may build too much, maintain too little, or invest in the wrong things – choices that do not reflect what users value. Clear governance, strong oversight, transparent information, meaningful accountability, and appropriate autonomy are therefore essential in every sector (Figure 44).

Governance should align with the long-term interests of infrastructure users. Funding and pricing models can help ensure that decision-makers are incentivised to deliver services that users value. Good governance also requires processes that help providers understand user preferences, service priorities, and willingness to pay for different service levels. Local government and sector regulators such as the Electricity Authority are legally required to consult before making decisions, but consultation or participatory processes can be valuable even without a legal requirement.

External oversight protects user interests. Oversight builds public trust by setting clear expectations for performance, investment, and service delivery, and by monitoring whether providers are meeting these expectations. It provides assurance that services are delivered efficiently and sustainably. Because ownership models differ across central government, local government, and commercial providers, oversight mechanisms must be tailored to each context.

Transparency enables accountability for performance. Performance information should be accessible and understandable to the people who use and pay for infrastructure. This allows decision-makers and the public to assess performance. Examples include the Commerce Commission's information disclosure regime for regulated sectors, the Electricity Authority's market performance reporting, and financial disclosures required by the Local Government Act 2002. For central government infrastructure, the Public Finance Act 1989 provides the core framework for performance and financial reporting.

Accountability ensures that performance expectations are met. Information disclosure helps highlight performance issues, but it is not always enough to drive improvement. Providers should be subject to monitoring, evaluation, and meaningful consequences for underperformance. Strong accountability mechanisms promote continuous improvement and maintain public confidence in infrastructure services.

Autonomy supports better decisions and better outcomes. Infrastructure providers need the flexibility to deliver against well-defined expectations and respond to changing service needs. Autonomy enhances accountability by making providers visibly responsible for their decisions. It allows them to tailor investment and operations to the needs of specific places or user groups. Governance and oversight mechanisms that overly constrain decision-making are unlikely to deliver good outcomes for users.

How we govern infrastructure affects how well our needs are met

Figure 44: **Best practice principles for aligning infrastructure providers with consumer interests**

1. Governance

Decision-making should align with the long-term interests of infrastructure users, including through use of pricing and funding models that incentivise performance and value. Providers should use good processes to ensure they understand users' preferences, service priorities, and willingness to pay and make trade-offs.

2. Oversight

Oversight arrangements should set clear expectations for performance, investment, and service delivery. They should monitor whether providers act in the long-term interests of users and provide assurance that infrastructure is operated efficiently and sustainably.

3. Transparency

Transparent performance and financial information should enhance accountability by allowing decision-makers and users to assess whether providers are meeting expectations. The focus should be on genuinely useful information which is accessible and understandable by the public. This information should align with existing reporting, stay proportionate to scale, and be standardised to allow for comparison and benchmarking, where possible.

4. Accountability

Providers' performance should be subject to monitoring and evaluation by an independent party with the power to enforce meaningful consequences for underperformance. Accountability mechanisms should promote continuous improvement and maintain public confidence in infrastructure services.

5. Autonomy

Infrastructure providers should have the autonomy to deliver against well-defined expectations. Autonomy enhances accountability and gives infrastructure providers the authority and freedom to adapt to changing circumstances.

Source: New Zealand Infrastructure Commission. (2025).

Governance and oversight are appropriate to context

Different governance and oversight arrangements apply across infrastructure sectors because providers face different incentives and responsibilities. Central and local government providers are governed by elected representatives accountable to voters. Their oversight arrangements are tailored to this context (Figure 45). By contrast, commercial entities are governed by boards accountable to shareholders, and many are subject to additional regulatory oversight of their expenditure and service quality.

Economic regulation is an important oversight tool for monopoly infrastructure. The Commerce Commission uses regulation to replicate the effects of competition by ensuring prices are fair, consumers are protected, and providers remain customer-responsive and innovative. Forms of economic regulation include information disclosure, which promotes transparency, and price-quality regulation, which sets limits on revenue, minimum service quality standards, and penalties for non-compliance.

Economic regulation is most effective where providers fund investment from their own revenues and have autonomy over investment decisions. Commercial and local government providers meet these conditions, meaning the Commerce Commission's decisions and penalties can drive better performance and investment behaviour.

Local government settings and accountabilities are coherent

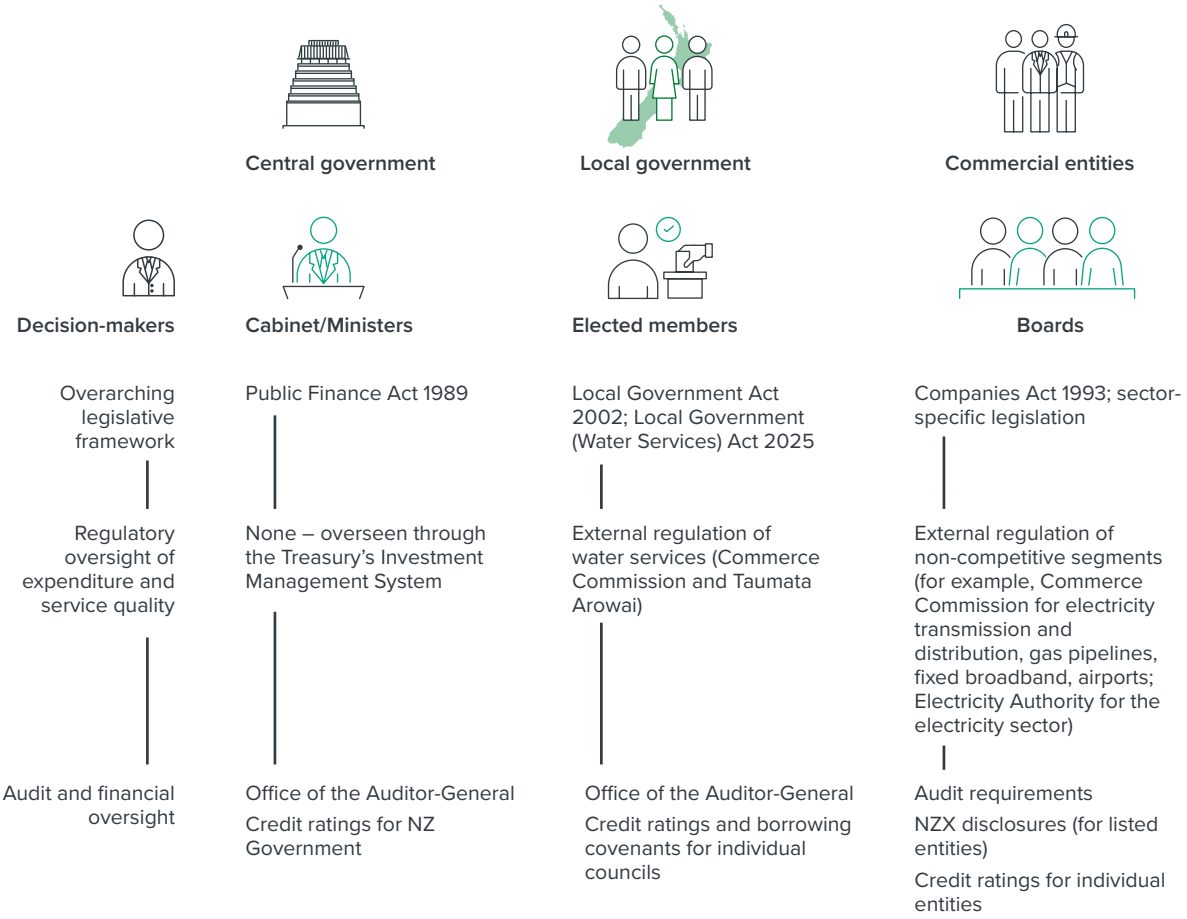
Local government reforms and shifting policy settings need to ensure the sector is empowered to plan and deliver infrastructure. Local government accounts for around a quarter of all infrastructure investment, so it's imperative that councils have clarity on their roles and functions, and certainty about their ability to raise funds to invest in essential infrastructure. Councils have navigated a series of reforms in recent years, including changes in the important areas of water, resource management and building control. This has contributed to policy uncertainty and increased costs.[150] The sector, which is facing fiscal constraints, has also voiced concerns about additional responsibilities not being matched with new funding. Future changes have been announced, including a policy to constrain rates increases.

Oversight mechanisms should ensure that councils are acting as responsible stewards of community infrastructure. Councils are accountable to voters through triennial elections, and transparency is supported by audit provisions under the Local Government Act 2002. Several new oversight mechanisms are now being introduced: the Commerce Commission will apply economic regulation to water and wastewater services, complementing the role played by the Water Services Authority – Taumata Arowai in setting water quality standards; and the Department of Internal Affairs has developed performance benchmarking, allowing ratepayers to assess how their council compares across metrics like capital spending, rates increases and debt levels.[151] New oversight mechanisms for local government should consider the benefits of additional transparency against the cost of compliance.

These changes need to be implemented in a coherent way. Ongoing reforms and policy changes affecting local government should be considered in the round, with an eye to ensuring that councils can continue to maintain and invest in infrastructure. Changes should seek to strengthen regional planning processes to better align land use and infrastructure and acknowledge the benefits of national standards and consistency, including tools like standardised planning zones. At the same time, local government needs to have the incentives, autonomy, levers, and access to funding tools to make place-based decisions, maintain their assets, and represent and serve their communities.

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

Figure 45: **Existing governance and oversight 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.

Source: enjoynz, Getty Images

7 Conclusion: We can have better infrastructure

Whakakapinga: Ka taea ngā tūāhanga pai ake

Source: Watercare

The infrastructure sector isn't delivering the outcomes New Zealanders deserve and expect. Each year we invest just over $20 billion on infrastructure, yet on a dollar-for-dollar basis we achieve less than many of our more efficient international peers. Simply investing more won't solve the problem. Unless we strengthen the foundations of our investment system, adding extra funding is a bit like pumping air into a punctured bike tyre – it won't reliably get us where we need to go.

The National Infrastructure Plan provides a way forward. It sets out system-level recommendations alongside more immediate actions to transform how New Zealand plans and delivers infrastructure. It charts a course toward a future where decision-makers use our Forward Guidance to direct resources to the sectors with the greatest needs; where we prioritise looking after what we already have and prepare for multiple possible futures through credible, fundable long-term asset management and investment plans; where a consolidated and strengthened assurance system ensures investments address the right problems in a cost-effective way; and where the National Infrastructure Pipeline is used to coordinate and sequence investments across the system.

Our advice will become more targeted as the system improves. The Plan summarises the historical and future investment drivers for 17 sectors (see Appendix One), ranging from land transport and health to ports and airports. This highlights how the information in the Plan can be used to diagnose and prioritise issues and opportunities at the sectoral level. As long-term planning matures, the combination of top-down Forward Guidance and bottom-up agency plans will become a powerful tool for decision-makers. Better planning processes and data will give much clearer visibility of what investments are needed, where, and when. Commercial infrastructure providers are accountable to regulators, capital providers and customers. Mature planning processes and well-informed funding decisions will help central government providers achieve more commercial levels of transparency and accountability, and ensure that investments deliver the right infrastructure in the right place at the right time.

The work doesn't stop here. The Commission will continue to refine and improve its tools – our Forward Guidance, the Infrastructure Priorities Programme and the Pipeline. At the same time, we will work in partnership with the public and private sectors to realise the vision of an improved infrastructure system based on the recommendations and actions in this Plan. Change will not be easy. It will require dedication, courage and commitment from people across the sector.

Finding common ground is possible. New Zealand does not need to agree on every individual project, but achieving consensus on the bones of a better system – one where we look after what we've got and cost-effectively plan and deliver new projects – would be a giant leap forward. It would help to free us from short-term planning cycles, put us in a stronger position to navigate challenges like the ageing population and the impacts of climate change, and create a more dependable pipeline for the 100,000 skilled workers we depend on to deliver our infrastructure.

Getting it right means we can do more. Getting more value from every dollar we spend means more hospital beds, more reliable transport, more renewable energy to power the economy, and more resilient communities. Ultimately, it is about people. If we want New Zealanders to thrive, we need an infrastructure system that delivers for them.

What success could look like

The National Infrastructure Plan is ambitious for New Zealand. Delivering on this Plan would reshape how the system works in practice. The outcomes could look like this:

- **A mature and credible National Infrastructure Pipeline that informs planning and decision-making.** Leading to improved market certainty, better project sequencing, and a clearer understanding of workforce and supply-chain needs.
- **A comprehensive menu of investable, high-quality infrastructure projects endorsed through the Infrastructure Priorities Programme.** Leading to better project selection and improved value for every dollar spent.
- **Sophisticated Forward Guidance embedded in Government decision-making.** Leading to a better understanding of what's coming, so that we can budget and plan smarter and manage assets in line with future needs.
- **Stronger public sector project leadership and sophisticated central government clients.** Leading to more projects being delivered on time and on budget.
- **Central government agencies with credible, fundable long-term asset management and investment plans.** Leading to better stewardship of existing assets and more effective allocation of new investment.
- **Network and economic infrastructure funded largely by direct beneficiaries.** Leading to smarter investment, better use of existing networks, opportunities to share savings with users, and more funding available for the social infrastructure we need.
- **A well-designed, stable regulatory system that enables infrastructure.** Leading to greater certainty, lower costs and delays, and a more confident infrastructure sector able to invest in the workforce and resources it needs.

As required by legislation, the Government has 180 days to formally respond to the Plan after we deliver it to the Minister for Infrastructure. The Commission will then monitor progress against accepted recommendations.

The National Infrastructure Plan can point the way – real change depends on all of us taking the next steps.

Source: Urvish Joshi, Getty Images

Appendix One: Sector summaries

Different infrastructure sectors have distinct oversight and governance arrangements, funding models, demand drivers, and challenges. While the National Infrastructure Plan takes a nationwide view, with a particular emphasis on improving how central government agencies plan and deliver infrastructure, this appendix provides more granular insights for 17 infrastructure sectors, covering both public and privately-owned assets.

The Commission identified these sectors based on its previous work, including areas where Forward Guidance had been developed to forecast future investment demands, and feedback received on the draft Plan that helped to identify where additional sector commentary was desirable. We also received some feedback on issues like tourism-related demands that cut across many individual infrastructure sectors.

Each summary describes the institutional structure of the sector – including oversight and governance arrangements and any applicable laws and regulatory regimes – as well as an explanation of how providers are funded and what we know about the condition and value of their assets. The summaries also include an overview of historical investment drivers, public perceptions of the sector – informed, where possible, by public survey information – and analysis of key challenges and opportunities. Some sectors are more detailed than others due to limitations around information quality and availability.

The Commission has also brought together current investment intentions by sector, sourced from submissions to the National Infrastructure Pipeline, sector-specific plans, council long-term plans, and information provided to the Treasury for its Quarterly Investment Reporting. Where possible, these intentions have been contrasted against our Forward Guidance. This is provided in 2025 NZD and as a proportion of gross domestic product (GDP) for three decades through to 2055. The Guidance forecasts have been produced based on several factors, including what we've been prepared to invest in the past, how fast existing assets are wearing out, and how rapidly network demand might grow given national-level population and economic projections.

The contrast between what providers in publicly-funded sectors say they're planning to invest and our Forward Guidance can help inform investment decisions, including how decision-makers allocate scarce capital between sectors. The Commission will continue to refine its models and analysis, which will become more targeted as agencies develop mature asset management and investment plans and increasing numbers of private providers feed their intentions into the National Infrastructure Pipeline.

1. Land transport

1.1. Institutional structure

Service delivery responsibilities

- Land transport infrastructure is primarily provided by 'monopoly' service providers, which are owned by central and local government.
- Land transport includes state highways (provided by New Zealand Transport Agency Waka Kotahi (NZTA), a Crown entity), local roads and paths (provided by local road controlling authorities), local public transport services (planned and contracted by regional councils and Auckland Transport, 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

- Road network operational oversight is provided by NZTA and local authorities. While NZTA provides a rail safety regulatory function, most rail oversight is provided from within the vertically integrated structure of KiwiRail, administered by its Board and accountable to the Minister.
- NZTA sets rules and standards for state highways; local roads, and walking, cycling, and public transport infrastructure and services. NZTA also manages the funding of the land transport system, and by extension, has considerable influence over the composition of New Zealand's transport infrastructure projects.
- The NZTA Board makes independent decisions on which activities to include in the National Land Transport Programme but must give effect to direction and funding allocations in the Government Policy Statement on Land Transport, which is set by the Government.
- The Ministry of Transport provides policy advice to the Government on the overall transport system, and it monitors the performance of NZTA, and closely engages with KiwiRail.

1.2. Paying for investment

- Historically, land transport has been funded through a combination of road user charges (RUC) and fuel excise duty (FED), which are paid into the National Land Transport Fund (NLTF), additional Crown funding, and fares and local government rates for public transit services. In recent years, delivering Government investment priorities for both road and rail infrastructure has required substantial Crown grants and loans in addition to user charges. Without changes to pricing or investment priorities, this fiscal gap is expected to continue.
- Setting aside direct Crown contributions, the NLTF, managed by NZTA, obtains revenues from FED, RUC, 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's Funding Assistant Rates (FAR) policy determines how NLTF revenue is used to co-invest together with councils in local projects.
- Guided by the GPS-LT, NZTA allocates funds from the NLTF across its nationally delivered activities and local transport initiatives put forward by councils.
- Rail networks are funded through a combination of NLTF revenues, Crown funding, rates, track user charges and farebox revenue. This includes contributions from councils and public transport users in Auckland and Wellington. While KiwiRail manages the entire national rail network, NLTF funding for the public transport activity class is used to help deliver metro services.

1.3. Historical investment drivers

- Investment in new transport networks is initially driven by technological innovations (for example, the invention of railways and cars), and then by improving connectivity and maintaining existing networks.
- As networks mature, maintaining and renewing existing assets becomes a major driver of spending. Road age and increasing network use, along with a change in traffic composition and natural hazard events, all influence maintenance and renewal spending demands.
- Once an extensive network is built, further improvements are driven by population growth (with investments concentrated in certain areas to relieve congestion), economic development (also concentrated), and rising level of service expectations among users.

- More recent freight and logistics developments include the utilisation of freight distribution hubs and inland ports, which scale and consolidate freight movements. These centres of concentrated freight activity require access to rail and road infrastructure, highlighting the complementary nature of private logistics investment with public investment in land transport.

1.4. Community perceptions and expectations

This section summarises what we know about the New Zealand public's perceptions and expectations of the land transport sector at a national level.

- There seems to be general 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.[152] Equity, accessibility, safety and ongoing service provision are major considerations.
- Because transport costs are the largest infrastructure-related spending item in household budgets,[153] changes in costs matter to consumers, particularly for fuel prices which feed into general cost-of-living concerns.[154]
- In a nationally representative survey undertaken by the Commission as part of consultation on the draft National Infrastructure Plan, 55% of New Zealanders reported that the transport system meets or exceeds their needs, while 45% reported it somewhat or consistently fails to meet their needs.

1.5. 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: Canada, Columbia, Czechia, Finland, Iceland, Norway, Sweden (plus Japan and Spain for rail). Similarity based on income, population density, terrain ruggedness, urban populations, and coastal 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.[155]

- 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.
- The national rail network is characterised by a comparatively low level of investment and usage, even when comparing to countries with similar population density and geographical features. The length of our network is comparable with our peers (on both a per capita and land area basis), albeit with a lower level of electrification.
- Preliminary analysis by the Commission suggests varied results for our metro rail networks (encompassing the Auckland and Wellington services) when comparing with similar cities. Wellington appears to outperform comparable jurisdictions in terms of usage, but in recent years has suffered on service 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.[156]

1.6. 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 (2025 NZD)	$4.6 billion	$5.8 billion	$7.0 billion	$3.8 billion
Percent of GDP	1.0%	1.0%	1.0%	1.3%

This table provides further detail on our Forward Guidance, which is summarised in Chapter 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report. [157]

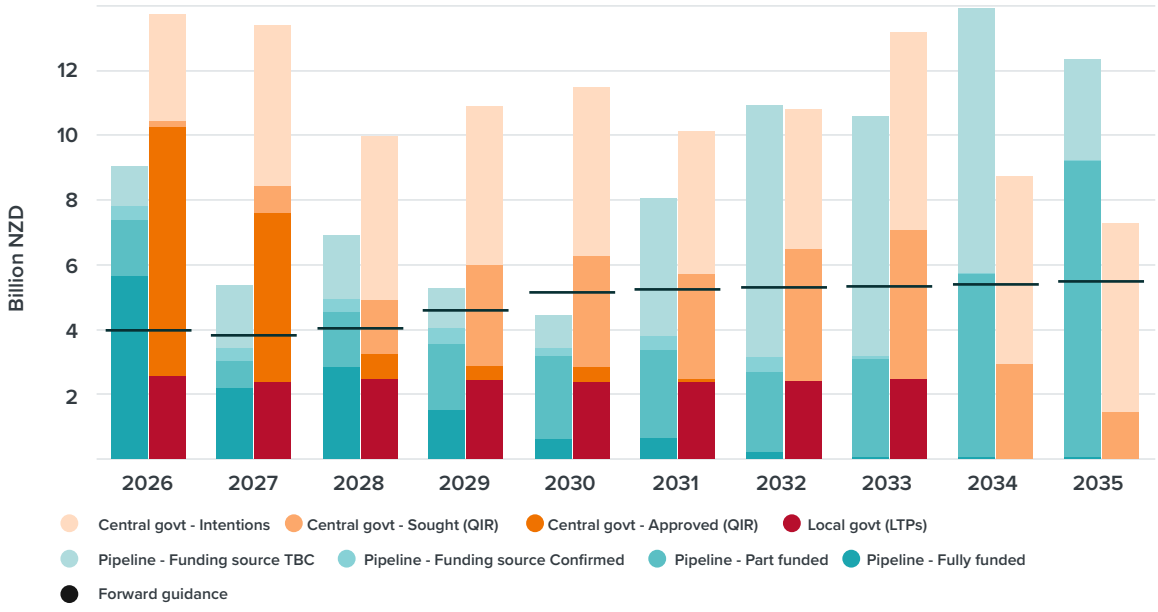
- Overall, slowing population and income growth are expected to put downward pressure on the population's willingness to pay for significant expansions or quality improvements to land transport networks.
- Renewal needs will therefore make up the largest share of investment. Improving resilience to natural hazard events will add to this. Large investments in state highways during the 2010s will require future renewals during the forecast period.
- Similarly, with rail, renewal needs will drive growing investment requirements as a share of GDP. However, our modelling assumes that New Zealand will continue to operate a rail network as it does today, but since the 1950s we have slowly been reducing the size of the network.

- Capital intensive rail investment in recent years (such as the City Rail Link and parallel network improvements in Auckland) resulted in greater-than-average investment as a share of GDP. If these investments translate to ridership levels that exceed expectations, investment may continue at these levels to meet excess demand.
- 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.

1.7. Current investment intentions

- Investment intentions significantly exceed demand as estimated in our Forward Guidance. The Commission's Forward Guidance is designed to be a long-run view of investment sustainability for the country. The scale of future investment intentions raises questions about a misalignment between investment plans and user willingness to pay, and could pose affordability issues in the long term.
- 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 National Infrastructure Pipeline (turquoise 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 2026–2035 period.
- A large share of investment intentions reported to the Treasury and shown in later years in the Pipeline are currently unfunded.

Figure 46: **Land transport investment intentions**



This chart compares two different measures of future investment intentions with the Commission's Forward Guidance on investment demand. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The red and orange bars show a measure of investment intentions based on the Commission's modelling of portfolio and programme-level data from local government long-term plans and central government's reporting of infrastructure-specific initiatives provided to the Treasury's Investment Management System, again distinguishing by funding status. The black lines show the Commission's Forward Guidance on transport infrastructure investment demand. This reflects all asset classes, whereas the investment intentions are restricted to infrastructure assets.

1.8. Key issues and opportunities

- **Pricing and governance:** The National Infrastructure Plan recommends that transport network infrastructure should be predominantly funded from user charges, because most benefits flow to current users. However, current investment intentions significantly exceed revenue from user charges, with the difference funded by Crown grants and loans. This suggests that investment intentions exceed the willingness of beneficiaries to pay for investment, raising questions about the value for money of this investment. Additional pricing mechanisms, such as tolling and congestion charging, could be used to manage congestion and demand for new capacity in the face of uncertain income and population growth. The Commission's Forward Guidance could assist with long-run affordability by outlining a sustainable level and mix of land transport investment, aiding price setting and investment planning.
- **Improved coordination:** Spatial planning done well can help identify where transport 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 and investment:** Consistent 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 different modes of transport.
- **Project appraisal:** In recent decades, the cost-benefit ratios of funded transport projects have declined as other factors, such as alignment with Government objectives, have taken priority. Research evaluating completed New Zealand transport projects found that benefits tend to be overestimated in initial appraisals and costs underestimated. There is a role for strengthened project appraisal prior to investment decisions.

2. Water and wastewater services

2.1. Institutional structure

Service delivery responsibilities

- The water and wastewater sector includes drinking water, wastewater, and stormwater infrastructure and services.
- Territorial local authorities currently provide most drinking water, wastewater and stormwater services, although there is some community self-supply and private sector provision.
- The establishment of regional water service providers or council-controlled organisations for the water and wastewater sector will transition some of these services out of territorial authorities.

Governance and oversight

- The Local Government (Water Services) Act 2025 requires local councils to deliver financially sustainable water services. The Commerce Commission must set information disclosure regulation for regulated water suppliers by February 2026, and price-quality regulation for Auckland's Watercare Services Limited by mid-2028. The Commerce Commission can recommend increasing the level of economic regulation on water service suppliers via Orders in Council.
- The Water Services Authority – Taumata Arowai regulates drinking water safety and monitors the environmental performance of drinking water services. It can also set National Engineering Design Standards for networks. The Water Services Act 2021 introduced stronger regulatory oversight, mandatory compliance, and higher accountability for suppliers following the public inquiry into the Havelock North drinking water contamination event in 2016.
- Regional councils regulate freshwater and coastal water quality under the Resource Management Act 1991 and relevant national direction.
- The Department of Internal Affairs provides policy stewardship for water and wastewater services. The Ministry for the Environment provides policy stewardship for freshwater, which water service providers interact with, and the Ministry of Health provides policy stewardship for the interface between water and public health. The Office of the Auditor-General provides independent financial oversight of the local government sector, including water services activities.
- The industry body, Water New Zealand (WaterNZ), helps to set industry standards and produces guidelines for water entities on operations, procurement and regulatory compliance.

2.2. Paying for investment

- Around 57% of users are charged through volumetric water charges. This number is skewed by volumetric charging in Auckland. For most New Zealand communities, water is still charged through rates on connected properties.[158]
- Wastewater charges tend to be linked to volume metrics where present (as in Auckland) or set as a fixed charge as part of the rating process, with the method varying across local authorities.
- 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.

2.3. Historical investment drivers

- During the late 1800s and early 1900s, water networks were built in response to technological innovations (for example, 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.
- Recent investment has been driven by a combination of tighter standards for water quality and growing networks to accommodate larger populations. Tighter standards include stricter environmental discharge limits and enhanced health protections in line with World Health Organization guidance.
- Stormwater investment has lifted in recent years after the separation of wastewater and stormwater networks, and additional council focus on flood risk mitigation.

2.4. Community perceptions and expectations

This section summarises what we know about the New Zealand public's perceptions and expectations of the water and wastewater sectors, at a national level.

- Survey data suggests that having enough clean water, particularly safe drinking water, is an important priority for New Zealanders.[159]
- 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.[160]
- In a nationally representative survey undertaken by the Commission as part of consultation on the draft National Infrastructure Plan:
  - 77% of New Zealanders reported that drinking water meets or exceeds their needs, while 23% reported it somewhat or consistently fails to meet their needs.
  - 78% of New Zealanders reported that sewerage services meets or exceeds their needs, while 22% reported it somewhat or consistently fails to meet their needs.

2.5. Current state of network

New Zealand's difference from comparator country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Water and Wastewater	+70%	-3%	+99%	+9%

Comparator countries: Canada, Chile, Czechia, Greece, Finland, Iceland, Spain, and Sweden. 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.[161] This data is for wastewater, stormwater (investment only), and drinking water services, but excludes irrigation and flood protection infrastructure that is unrelated to drainage.

- 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 connection numbers, according to the OECD New Zealand uses 253 cubic metres of drinking water per capita annually, considerably higher than all comparator countries. This is equivalent to 690 litres per person per day, similar to the 550 to 650 litres per connection per day reported by the Water Services Authority – Taumata Arowai.[162]
- 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.[163]

2.6. Forward Guidance for capital investment demand

Forecast investment levels for water and waste*

	2025–2035	2035–2045	2045–2055	2010–2022 historical average
Average annual spending (2025 NZD)	$2.3 billion	$2.8 billion	$3.5 billion	$2.3 billion
Percent of GDP	0.5%	0.5%	0.5%	0.6%

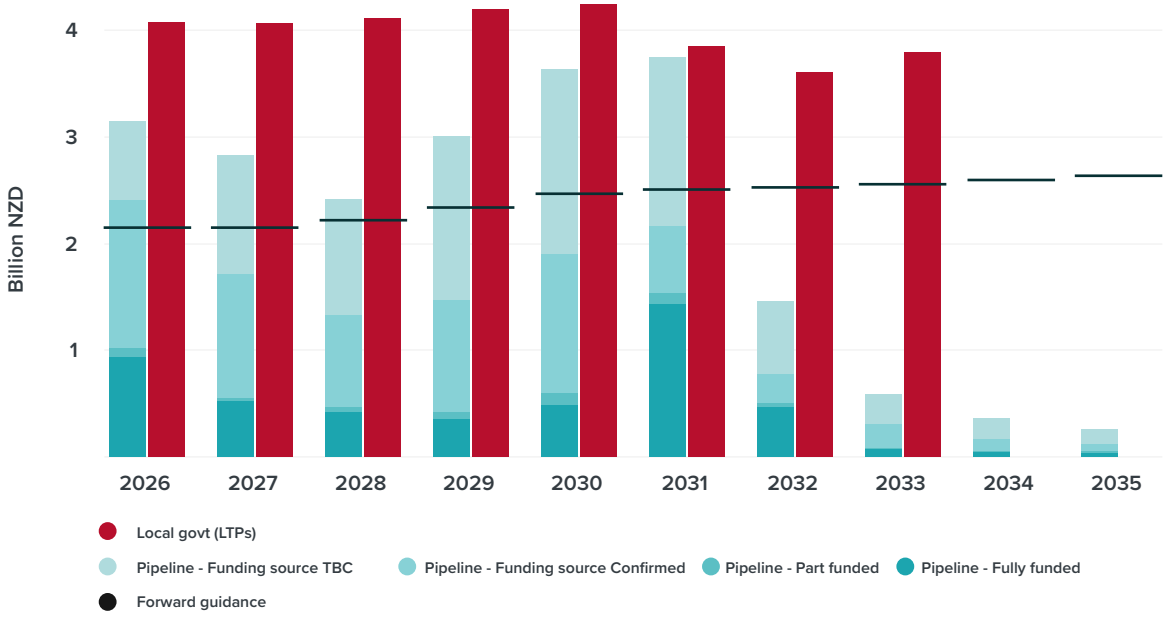
*Our Forward Guidance is based upon categories of investment and capital stock data from Stats NZ, where waste and water services are combined. We estimate that waste is a very small percentage of this category, so our Forward Guidance for the sector can be interpreted as mostly water. This table provides further detail on our Forward Guidance, which is summarised in Chapter 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report.[164] This data is for wastewater, stormwater, and drinking water services, but excludes irrigation and flood protection infrastructure that is unrelated to drainage.

- Investment in water and waste infrastructure in New Zealand has been elevated (nearly the highest in the OECD) as a share of GDP for the last 20 years, following a period of underinvestment from 1975 to 2000.
- Investment levels between 2010 and 2022 were partly driven by a backlog of renewals, but this alone does not explain the scale of spending. Other factors, including stricter regulatory compliance for drinking water and wastewater, higher environmental performance expectations, and growth in networks to service population growth, have played a significant role.
- Going forward, renewal and replacement of existing infrastructure is expected to be the largest driver of investment. At a national level, slowing population and income growth is expected to reduce demand for network expansions and improvement, although localised population growth will continue to drive high demand in some areas.
- Adapting to natural hazard risk is a growing investment driver for water networks. According to research completed by the Commission and Earth Sciences New Zealand, water networks are especially exposed to coastal and riverine flooding, both of which are expected to worsen with climate change.

2.7. Current investment intentions

- Water investment has risen in recent years. Forward investment intentions significantly exceed our Forward Guidance. This divergence appears to be driven by the sector's intentions to address higher quality standards.
- Councils have now confirmed their individual water service delivery plans (WSDPs). While the Commission did not analyse these plans to inform the National Infrastructure Plan, we note that public information on the WSDPs suggests future investment will be approximately $10 billion higher than forecasts contained in councils' long-term plans. This is due to more up-to-date figures, and some councils getting extensions for their long-term plans.
- The following chart depicts projected spending to deliver initiatives in planning and delivery in the Pipeline (turquoise bars), and programme-level intentions in local government long-term plans (red bars). These investment intentions are significantly higher than the Commission's investment demand outlook (black lines) over the 2026–2035 period.

Figure 47: **Water and wastewater investment intentions**



This chart compares two different measures of future investment intentions with the Commission's Forward Guidance on investment demand. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The red bars show the measure of investment intentions based on the Commission's modelling of portfolio level data from local government long-term plans. The black lines show the Commission's Forward Guidance on investment demand, which reflects all asset classes, whereas the investment intentions are restricted to infrastructure assets.

2.8. Key issues and opportunities

- **User affordability:** Over the next decade, councils are planning to spend close to $50 billion on their water networks. While access to clean, safe drinking water is critical, it is likely this level of investment will face affordability concerns from residents and businesses and could crowd out other local infrastructure priorities. Significant efforts are needed to improve the affordability of water infrastructure, including water metering and volumetric charging to manage demand, and pursuing lower-cost and non-built solutions on the supply side.
- **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:** There are several opportunities to achieve better scale and industry responsiveness through coordination activities:
    - The establishment of regional water services providers or council-controlled organisations for water, along with effective economic regulation, could enable a more effective response to investment needs.
    - Better coordination between spatial planning, consenting, and strategic water infrastructure planning could help to deliver the right-sized projects at the right times.
    - Water planning boundaries are often defined by watersheds which may in some cases constrain water infrastructure planning or delivery. Cross-boundary infrastructure planning and development could help leverage water asset capacity in neighbouring leading to more efficient procurement processes and improved maintenance of critical assets.
    - Ongoing efforts to develop national standards for water and wastewater infrastructure could reduce costs and streamline consenting processes.
- **Regulatory and policy certainty:** Water reforms proposed by successive Governments have increased uncertainty for councils, making it more difficult to plan water investments. Providing consistent policy and regulatory certainty and utilising spatial planning will be key to enabling the transition to more efficient investment and delivery of water services. In addition, consenting for dams, water extraction and discharges can add to the challenges and costs of developing water and wastewater assets.
- **Population and demographics:** Slow population growth or declining populations in smaller towns and rural areas, combined with an ageing population profile, will create issues around funding the maintenance and continuity of water and wastewater services. Conversely, faster growing cities like Auckland, Tauranga, Hamilton, and Christchurch will need to accommodate growth by building out networks to new areas and increasing the capacity of existing facilities.

3. Electricity

3.1. Institutional structure

Service delivery responsibilities

- New Zealand's predominant forms of energy used by households and businesses, other than transport, are electricity and gas. The electricity sector value chain consists of electricity generation, transmission, distribution, and retail. Transmission and distribution services are natural monopolies and remain largely separated from competitive generation and retail segments following pro-competition reforms in the 1990s. Four large generator-retailers ('gentailers') are vertically integrated across generation and retail and compete with independent generators and retailers in the retail and wholesale markets.
- Transpower occupies two distinct but critical roles in the electricity system. First, as grid owner it provides the transmission infrastructure to move electricity from where it is generated to where demand is located across New Zealand. Second, it is the appointed system operator responsible for operating the wholesale electricity market, ensuring the real-time coordination of the electricity system and reporting on security of supply.[165]
- There are 29 electricity distribution businesses that own and operate the poles and wires that deliver electricity from the national grid to end consumers. Each business covers its own geographic area, and they vary significantly in size and ownership structure.
- Electricity infrastructure and services are provided by commercial entities, some of which are fully or partly owned by central or local government. Central government is the majority shareholder of three gentailers (Genesis, Meridian, and Mercury) and the transmission owner (Transpower). Electricity distribution businesses are owned by a mix of private investors, councils and consumer trusts.

Governance and oversight

- The sector is regulated under the Electricity Act 1992 (reform foundations and safety), and the Electricity Industry Act 2010 (established the Electricity Authority). The Commerce Act 1986 empowers the Commerce Commission to regulate 'markets where there is little or no competition', which covers Transpower and electricity distribution businesses.
- The Electricity Authority oversees and regulates the electricity sector, administering the Electricity Industry Participation Code, contracting for market operation services, monitoring and enforcing compliance, facilitating markets, and monitoring and reporting on the industry and markets. The Electricity Authority also regulates the structure of transmission and distribution pricing. The Commerce Commission regulates electricity distribution and transmission networks, with price paths limiting allowable revenues for Transpower and 16 of the 29 electricity distribution businesses.
- Transpower, as the grid owner, prepares a range of technical standards and operating codes that the Electricity Industry Participation Code requires participants in the electricity sector to comply with.
- As system operator, Transpower operates the system to ensure that frequency and grid stability are maintained, and generation is dispatched on a least-cost basis through a wholesale spot market.[166] The New Zealand Stock Exchange (NZX) holds service provider contracts with the Electricity Authority to support the spot market with information, reconciliation, and clearance services.[167] A financial futures market operated on the Australian Stock Exchange (ASX) supports exchange traded forward contacts or hedges to manage financial exposure to wholesale prices.
- The Ministry of Business, Innovation and Employment (MBIE) undertakes monitoring, reporting and policy functions across the energy sector, including publishing the Electricity Demand and Generation Scenarios. The Treasury monitors state-owned enterprises and mixed-ownership model companies from a commercial ownership perspective.

3.2. Paying for investment

- Electricity services are funded by electricity users. All costs of generating, transmitting, distributing, retailing, and operating the electricity system (along with the cost of purchasing carbon emissions units through the Emissions Trading Scheme) are passed through to customers.
- Electricity generators sell into a competitive wholesale market that is cleared as a central pool. Locational marginal pricing in the wholesale market helps signal opportunities for investment in additional capacity. Households tend to experience average or smoothed electricity prices, rather than being exposed to the spot market directly, with some industrial customers supplied through long-term power purchase agreements.

- Charges from regulated transmission and distribution businesses are increasing. The annual increase in 2025 was about $10 per month for the average household. The annual increase for 2026 to 2030 is estimated to be around $5 per month for the average household. These increases are driven by an increase in expenditure for reliability, demand growth and resilience needs (45% of the increase), rising input costs (25% of the increase), and a substantive rise in the cost of capital since 2020 (30% of the increase).[168]
- Direct central government financial support for electricity and gas infrastructure is rare, although central government does provide financial support to some households with the Winter Energy Payment, which is provided to all beneficiaries regardless of energy use.

3.3. Historical investment drivers

- Investment in electricity networks peaked from the 1950s through to the 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.
- Investment to serve demand growth for electricity is driven by factors like population growth, shifting technologies around energy usage (such as electric vehicles) and commercial/industrial usage.
- In electricity, investment in networks and generation capacity occurs to supply peak demand or provide resilience against outages. Investment in a variety of competing generation technologies has occurred over time to provide adequate supply of energy, including during sustained dry periods, and the lowest competitive prices. Investment in distributed generation is increasing as costs of new technology fall.
- New Zealand's legislated net zero carbon emission goals and broader energy market policy settings impact both gas and electricity investment.

3.4. Community perceptions and expectations

This section summarises what we know about the New Zealand public's perceptions and expectations of the electricity sector, at a national level.

- In general, New Zealanders' expectations for the reliability of electricity seem to be well met.[169]
- However, there is a general perception that electricity prices are higher than the costs to supply.[170]
- New Zealanders are increasingly concerned about the electricity sector's ability to ensure electricity supply will be sufficient in the future.[171]
- Most New Zealanders support electricity charges that are based on usage.[172]
- In a nationally representative survey undertaken by the Commission as part of consultation on the draft National Infrastructure Plan, 71% of New Zealanders reported that electricity services meet or exceed their needs, while 29% reported it somewhat or consistently fails to meet their needs.

3.5. Current state of network

New Zealand's difference from benchmark country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Electricity	-3%	+23%	-46%	-12%

Comparator countries: Canada, Chile, Columbia, Costa Rica, Finland, Iceland, Norway, and 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.[173]

- Our electricity networks are somewhat unique relative to other countries. We have a comparatively large transmission network, reflecting long distances between our generation plant and where we consume electricity, with 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.[174]

3.6. Forward Guidance for capital investment demand

Forecast investment levels for electricity (generation, transmission, and distribution)

	2025–2035	2035–2045	2045–2055	2010–2022 historical average
Average annual spending (2025 NZD)	$6.1 billion	$7.1 billion	$8.9 billion	$2.6 billion
Percent of GDP	1.3%	1.2%	1.3%	0.8%

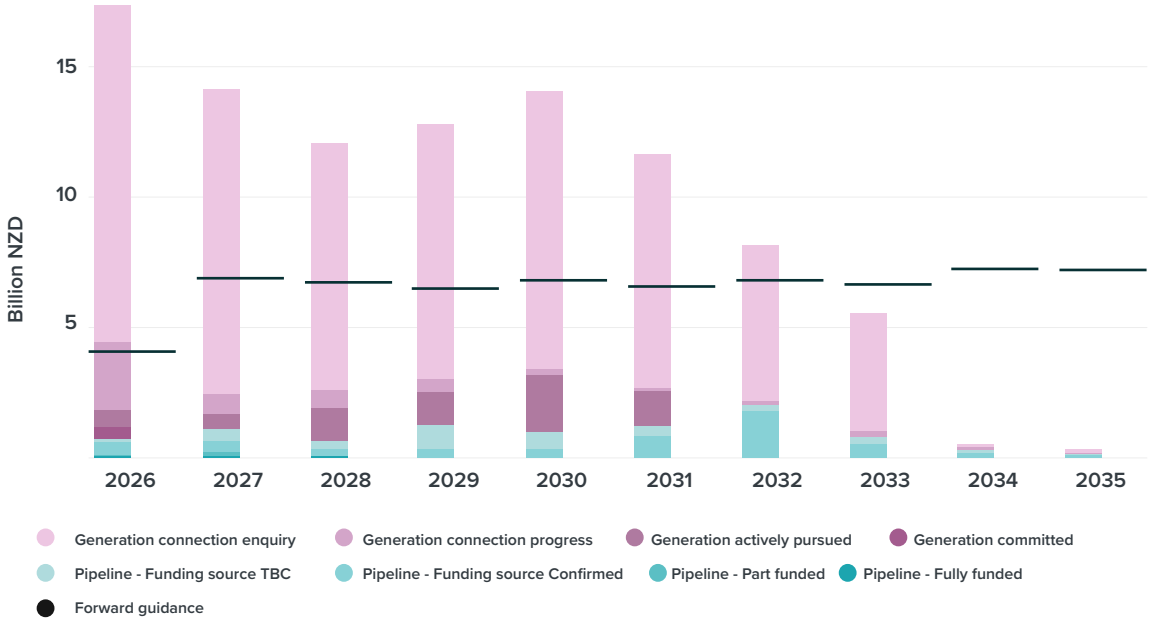
This table provides further detail on our Forward Guidance, which is summarised in Chapter 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report.[175]

- Meeting our legislated net zero carbon emissions goals will require a meaningful uplift in electricity investment over the next 30 years. This investment will include a need for new electricity generation, transmission, distribution, and 'firming' generation to supplement variable renewables like wind and solar. Investment will also be required to improve the resilience of these systems. Investment in demand flexibility and distributed generation will play an increasing role in the future.
- Over a 30-year period, based on Climate Change Commission scenarios, we estimate that this decarbonisation demand, as well as demand for increased data centres, will require approximately $26 billion worth of capital investment above baseline demand driven by population and income growth, or just over $835 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. Investment in technology and enabling systems to improve coordination and get more from our assets will be important.[176]
- Most of this decarbonisation-related investment demand 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.
- Outside of decarbonisation efforts and technology-driven demand from data centres, 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.

3.7. Current investment intentions

- Electricity investment has been stable as a share of GDP in recent years, but current market information highlights that actual investment and future investment intentions are increasing. Increased investment will depend on market factors, including consumer demand for more electricity, expected return on investment over the lifetime of an asset, and 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 based on information received via their clause 2.16 investment pipeline information notice. This information is collected by Transpower as developers make enquiries about grid connection. Relative to current electricity generation capacity of around 10.6GW, a large amount of new capacity is being investigated – a total of 44.3GW as of October 2025. 1.38GW of this capacity is committed and 2.95GW is being actively pursued.
- The following figure shows that projected spending to deliver initiatives in planning and delivery in the Pipeline (turquoise bars) and the Electricity Authority's generation investment intention information (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. This trend may not be surprising given the information is sourced from grid connection intentions information, and the lead time that businesses may reasonably engage with Transpower. Additionally, the information does not show historical investment intentions (that were not commissioned) moving forward, which is reasonable to anticipate as generation businesses make investment decisions. Investment in distributed generation including larger investments connected to local distribution networks is not represented in the chart.

Figure 48: **Electricity investment intentions**



This figure compares two different measures of future investment intentions with the Commission's Forward Guidance on investment demand. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline for transmission and distribution only (based on funding status), and the purple bars show the Electricity Authority's generation investment intentions (based on generation certainty). The black lines show the Commission's Forward Guidance on investment demand. This reflects all asset classes, whereas the investment intentions are restricted to infrastructure assets.

3.8. Key issues and opportunities

- **Policy certainty:** Policy uncertainty and unpredictability may continue to have an impact on future electricity demand. These include policies related to the implementation of the recent electricity market performance review, the Emissions Trading Scheme and other complementary decarbonisation policies, and the Government's role in managing dry-year risk.
- **Pricing:** Wholesale pricing provides important signals for investment in generation, storage and demand response. The additional investment required by decarbonisation will put upward pressure on prices in the near-term, then decline as supply comes online and prices are driven by average cost. Consumers are also likely to benefit from spending less on petrol, diesel and gas for transport and heat, as electricity is often more efficient. Pricing approaches will need to consider investment risk and affordability for users during the transition period.
- **Coordination:** Electricity is expected to play a major role in meeting our 2050 legislated emissions goals, not only within the sector but by substituting for more carbon-intensive fuels. Coordination between increased investment in generation, transmission, distribution, demand response and distributed energy resources (for example, home solar and batteries) will be required. As investment in decentralised energy resources and demand flexibility expand, they will offer increasing value across the energy value chain, including the wholesale market, management of transmission and distribution networks, and customer services.
- **Governance:** While economic regulation has worked well for transmission and distribution providers, perceptions among the public indicate low confidence in prices reflecting costs. At a system level, there are issues that may be contributing to this, including regulatory coordination, reporting to the public, transparency of credible information around fuel availability, investment intentions, and market operation.

- **Efficient resource consenting regimes:** Accommodating new, more distributed generation and network assets will require responsive regulatory environments that acknowledge and enable investment and innovation.
- **Navigating demand uncertainty:** Timing of new supply with demand growth is a critical challenge for the sector. All published forecasts (MBIE, Climate Change Commission, BCG's 'The Future is Electric' report, Transpower) point to accelerated demand growth. This growth is off the back of declining consumption since the Global Financial Crisis in 2008, led predominantly by large industrial processors (such as paper, wood, chemicals and basic metals), which makes the level and location of future demand harder to predict. Demand uncertainty is compounded by the pace of fuel switching from carbon-intensive industrial heat and processes, and the potential for demand growth from emerging industries, such as data centres.

4. Gas

4.1. Institutional structure

Service delivery responsibilities

- This sector summary focuses on 'downstream' gas transmission, distribution and retail. It excludes liquid fuels (for example, petrol and diesel) and 'upstream' gas production and processing activities. While the focus is on the transmission and distribution networks, these rely upon the presence of ongoing volumes of gas in sufficient quantities to make the operation of these networks viable.
- Gas infrastructure and services are provided by non-government entities. Gas transmission is provided by Firstgas (part of Clarus Group, which is in the process of being acquired by Brookfield), which owns and operates the high-pressure gas transport pipelines. Distribution through low-pressure networks to end users is provided by Firstgas, Vector, Powerco, Nova and GasNet (a council-owned provider in the Manawatū-Whanganui area). Transmission and distribution companies operate as regulated monopolies. There are several gas retail companies, such as Nova Energy, Contact Energy and Genesis Energy, which buy gas wholesale to sell to businesses and households. Distributed gas is only available in the North Island, with bottled LPG available for South Island consumers.
- Gas delivery works on a series of contracts across the production and network components of the sector. Gas is generally wholesaled through Gas Supply Agreements (GSAs), which are long-term bilateral contracts between producers and large users or retailers. The spot market comprises just under 5% of gas production.[177] The long-term contracts specify volume, price, delivery points, and duration. Large users and retailers then have transmission and distribution agreements with pipeline operators to transport gas for a pre-determined (regulated) tariff. Only 4% of natural gas is consumed by households,[178] but they comprise over 90% of connections.

Governance and oversight

- The Gas Act 1992 provides for sector legislation around safety standards, a co-regulatory governance model and the establishment of the Gas Industry Company (GIC). The Commerce Act 1986 empowers the Commerce Commission under Part 4 of the Act to regulate gas networks, under the current (2023) default price-quality path that has been in place since October 2022. A new (2026) path is currently under development for commencement on 1 October 2026.
- The 'downstream' gas sector is governed by regulations developed by the government and the GIC. The GIC is a form of industry self-regulation governed by the largest industry players, which makes recommendations to the Minister for Energy on rules and regulations.
- MBIE provides policy stewardship for both gas and electricity because of the interdependencies between them. Gas remains complementary to electricity generation, with around 9% of electricity generated using gas in 2023.

4.2. Paying for investment

- Investment in gas transmission and distribution infrastructure is privately funded by the network owners (for example, Firstgas, Vector, Powerco). These companies recover the costs of their investments, plus a regulated rate of return, from gas users through charges levied on retailers, which are then passed on to consumers.
- End user gas bills recover the costs of gas production, transmission and distribution, plus retail margins.
- While not directly part of the 'downstream' market per se, the Government has announced a $200 million joint exploration fund to work with the private sector to discover new gas resources, which could have implications for infrastructure assets. In November 2025, the scope of the fund was broadened to include a range of investments that can accelerate or increase the volume of gas to market in the short-, medium- and long-run.

4.3. Historical investment drivers

- The initial development of the gas transmission and distribution networks was driven by the discovery and production of the large offshore Maui and onshore Kapuni gas fields in the Taranaki region. Maui began producing in 1979 and output and usage continued rising until the early 2000s following further offshore and onshore exploration resulting in more fields being developed.
- Subsequent investment was spurred by the expansion of the network to connect major industrial users, electricity generators, and residential consumers across the North Island. Methanex's arrival, as a large anchor customer, also drove increased investment.

- On the back of increased supply and large industrial users, the gas transmission and distribution networks were built to their present size and form, serving a broader range of industrial, commercial and residential customers.
- Investment in infrastructure networks, at a high level, is driven by underlying economic and population dynamics. However, investment is also fundamentally limited by the availability of gas, under current and future policy settings. Recent supply reductions, limited exploration activity and New Zealand's legislated net zero carbon emission goals raise significant questions about future gas infrastructure investment.

4.4. Community perceptions and expectations

- In a nationally representative survey undertaken by the Commission as part of consultation on the draft National Infrastructure Plan, 70% of New Zealanders (who use gas) reported that gas services meet or exceed their needs, while 30% reported it somewhat or consistently fails to meet their needs.
- In general, consumers appear to be concerned about prices and security of supply for both gas and electricity. Ensuring prices do not increase significantly was the most important factor for New Zealanders (87%) when considering the future of energy. Security of supply was also important (84%) to respondents.[179]

4.5. Current state of network

- The total value of gas transmission, distribution, and storage infrastructure in New Zealand was approximately $2.2 billion in 2024, which was roughly the same as the value in 2014.
- New Zealand's gas transmission network, owned and operated by Firstgas, consists of 2,517km of high-pressure underground pipelines, compressor facilities and above-ground stations, including 123 offtake points across the North Island.
- Overall investment in the network was approximately $85 million in 2024. Over the past decade, average capital expenditure has been $96 million. From 2019 onwards there has been a downward trend in investment.
- Over the past decade, the average ratio of renewal expense to depreciation was 0.46, indicating that assets have deteriorated in condition over the last 10 years, or not been replaced on a like-for-like basis.[180]
- The distribution companies split networks across different areas of the North Island. Firstgas operates just under 5,000km of lower pressure distribution pipeline through Northland, Waikato, the Central Plateau area, Bay of Plenty, Gisborne and Kāpiti Coast. Vector covers the greater Auckland region with a 7,000km pipeline network. Powerco has a 6,300km pipeline network across Taranaki, Hawke's Bay, Horowhenua and Manawatū, Porirua, Hutt Valley, and Wellington. The GasNet network consists of 413km of mains and 276km of service lines covering the five communities in the Whanganui region.
- Alongside the reticulated network, there are around 300,000 residential and commercial customers who are served by bottled LPG for cooking and water heating. Bottled LPG remains an important fuel source in the South Island, which lacks natural gas reticulation.
- The Commission publishes performance dashboards that can be used to understand changes in the performance of New Zealand's energy sector over time.[181]

4.6. Forward Guidance for capital investment demand

Forecast investment levels for gas pipelines and storage

	2025–2035	2035–2045	2045–2055
Average annual spending (2025 NZD)	$82 million	$65 million	$12 million
Percent of GDP	0.02%	0.01%	0.01%

This table provides further detail on our Forward Guidance, which is summarised in Chapter 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report.[182]

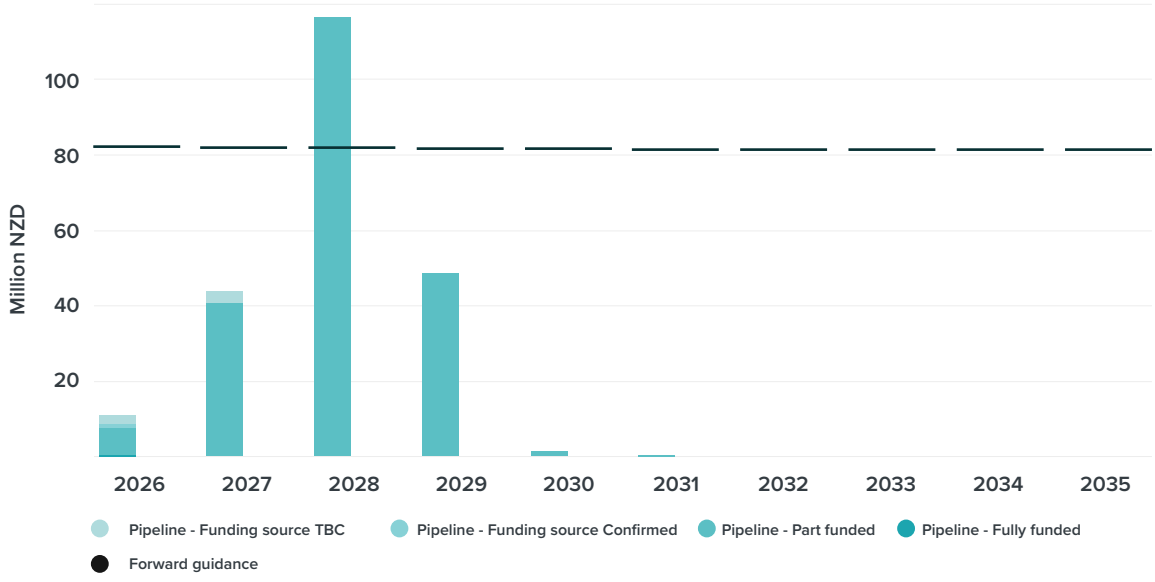
- The Commission's Forward Guidance covers investment in the gas transmission and distribution networks, rather than upstream assets like production.[183]
- Our forecasts for the gas network are derived from modelling by the Climate Change Commission, which has created scenarios for meeting our net zero emissions targets. These scenarios include demand for gas, which we have converted to capital requirements.

- Based on Climate Change Commission scenarios, to meet our emissions targets gas demand will eventually be replaced by electricity and other sources. Revised production forecasts[184] show supply is reducing faster and sooner than previously forecast. Current MBIE projections show production declining from about 120 PJs today to less than 40 PJs by 2035. Without any new discoveries or greater production, this level would require significant reductions in industrial, commercial and residential demand and is only sufficient to meet current thermal electricity generation demand.
- Steady investment to maintain current pipeline assets will likely continue until the wave of new electricity generation, transmission, and distribution becomes available around 2040. At some point after this period, the existing network for natural gas is likely to be retired, though there is potential to repurpose some of the assets to deliver biofuels.
- This downward trend in investment, as well as the level, aligns closely with 2024 disclosures on future investment plans made by gas pipeline businesses to the Commerce Commission.

4.7. Current investment intentions

- The following chart shows projected spending to deliver initiatives in planning and delivery in the Pipeline (turquoise bars). The black lines show the Commission's Forward Guidance for gas investment.
- The Commission currently collects only limited project data from gas transmission and distribution companies, so forward intentions in the Pipeline appear to be below the Commission's forecasts for the next couple of years but catch up in 2028. Intentions do not extend much beyond 2030. The Commission is working to expand coverage of the gas network in the future.

Figure 49: **Gas investment intentions**



The turquoise bars show project-level gas investment intentions from the National Infrastructure Pipeline. The black lines show the Commission's Forward Guidance on investment demand.

4.8. Key issues and opportunities

- **Future asset management:** Gas production is projected by MBIE to decline dramatically over the coming decades, with projected supply in 2035 expected to be 84% lower than in 2015. This reduction may require steps to manage the transition for users. Steps and risks include:
  - Better gas security-of-supply reporting will be important to help end users understand and manage downside supply risks.
  - A range of demand and supply-side actions will be needed to manage the transition, balancing the need to accelerate fuel switching, while ensuring overall energy security is maintained during the transition. The Government has announced that it will run a competitive procurement process for an LNG import facility.
  - Reduced demand response for the gas and electricity sectors. Large industrial users of gas have been able to reduce production during periods of very high wholesale electricity prices, freeing up gas for electricity generation. If these industrial users reduce production in line with declining gas supply, the electricity and gas systems may lose this additional level of demand response.
  - In its 2023 default price path determination for gas transmission and distribution, the Commerce Commission approved shortening the assumed asset life of gas pipelines, allowing companies to recover depreciation expenses from users over a shorter period, which led to a small increase in customer bills. Over time, this and other network costs will need to be distributed over a smaller set of end users, which is likely to affect prices and affordability.
- **Innovations in renewables:** While traditional sources of natural gas are in decline and there is significant uncertainty around further exploration and future discoveries, renewable sources of gas are being explored. This includes producing biogas and converting it to biomethane and introducing the use of hydrogen blends to be transported across networks. There is not a clear view across network operators as to whether these alternatives are viable from a scaling perspective, and any potential switch to renewable sources may also trigger associated investment in network assets (for example, new lower pressure compressors) which may test existing price-quality paths.
- **Policy certainty:** Policy uncertainty may continue to have an impact on the outlook for future gas supply, including permitting for exploration and production from any new exploitable resources that are found, and also whether imported LNG is introduced as an electricity generation fuel. These uncertainties will influence investment decision making around future asset investment, including demand management practices and fuel switching – all of which will have an impact on prices. Large industrial users are particularly affected, as they are likely to face higher costs of switching to alternative fuel sources and longer required lead times for investment. Better gas security-of-supply reporting and stable and consistent transition planning can help to reduce investment uncertainty and disruption.

5. Telecommunications

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), fixed wireless access (FWA), and other services like satellite broadband.
- Fixed-line broadband infrastructure is monopolistic, but there are many retailers of fibre broadband services to households.
- A wholesale/retail structural separation applies to Chorus' 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.
- Cellular Wireless (Mobile) services are competitive, with several firms offering services. Supporting cellular wireless are tower companies, such as Connexa and FortySouth, which provide the ground infrastructure (masts) for the wireless telecommunications equipment.

Governance and oversight

The Commerce Commission regulates terms of access across a range of telecommunications 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 telecommunications levies.

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.

5.3. Historical investment drivers

- In recent decades, spending has been driven by the need to deploy new telecommunications technologies (mobile networks, 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. However, for other physical assets, such as in-ground ducting and poles, depreciation rates are lower and reflect long-lived assets.

5.4. Community perceptions and expectations

This section summarises what we know about the New Zealand public's perceptions and expectations of the telecommunications sector, at a national level.

- In general, telecommunications services in New Zealand appear to be meeting most New Zealanders' expectations.[185]
- In a nationally representative survey undertaken by the Commission as part of consultation on the draft draft National Infrastructure Plan:
  - 90% of New Zealanders reported that mobile phone services meet or exceed their needs, while 10% reported it somewhat or consistently fails to meet their needs.
  - 85% of New Zealanders reported that internet services meet or exceed their needs, while 15% reported it somewhat or consistently fails to meet their needs.

5.5. Current state of network

New Zealand's difference from benchmark country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Telecommunications	+28%	-9%	+3%	-4%

Comparator countries: Canada, Chile, Columbia, Costa Rica, Finland, Iceland, Norway, and Sweden. 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. [186]

- Over the past 10 years, New Zealand has spent a larger share of GDP on telecommunications infrastructure than most comparator countries. Demand for data services has increased significantly within this time, and providers have been responding by adding additional capacity and speed enhancements.
- New Zealand's fixed broadband network is comparable to our comparator countries in terms of network coverage, subscriptions, and quality (connection speeds). New Zealand ranks tenth in the OECD for fibre uptake, although this position has slipped since completion of the UFB programme as other OECD countries, including our comparators, have continued to invest in digital networks.
- New Zealand's uptake of mobile subscriptions is comparable to similar countries, and 4G mobile broadband coverage is like that of comparator countries, albeit at the lower end of the range. However, only around 40% of the population is covered by 5G mobile networks, which is nearly the lowest in the OECD and well below other comparator countries. This could be due to delays in spectrum being allocated, as the 2020 auction was cancelled due to the COVID-19 pandemic.[187] New Zealanders also use a very low amount of mobile data compared to our peers, although mobile data usage is growing rapidly.
- The Commission publishes performance dashboards that can be used to understand changes in the performance of New Zealand's telecommunications sector over time.[188]

5.6. Forward Guidance for capital investment demand

Forecast investment levels for telecommunications

	2025–2035	2035–2045	2045–2055	2010–2022 historical average
Average annual spending (2025 NZD)	$3.4 billion	$4.2 billion	$5.0 billion	$2.6 billion
Percent of GDP	0.7%	0.7%	0.7%	0.7%

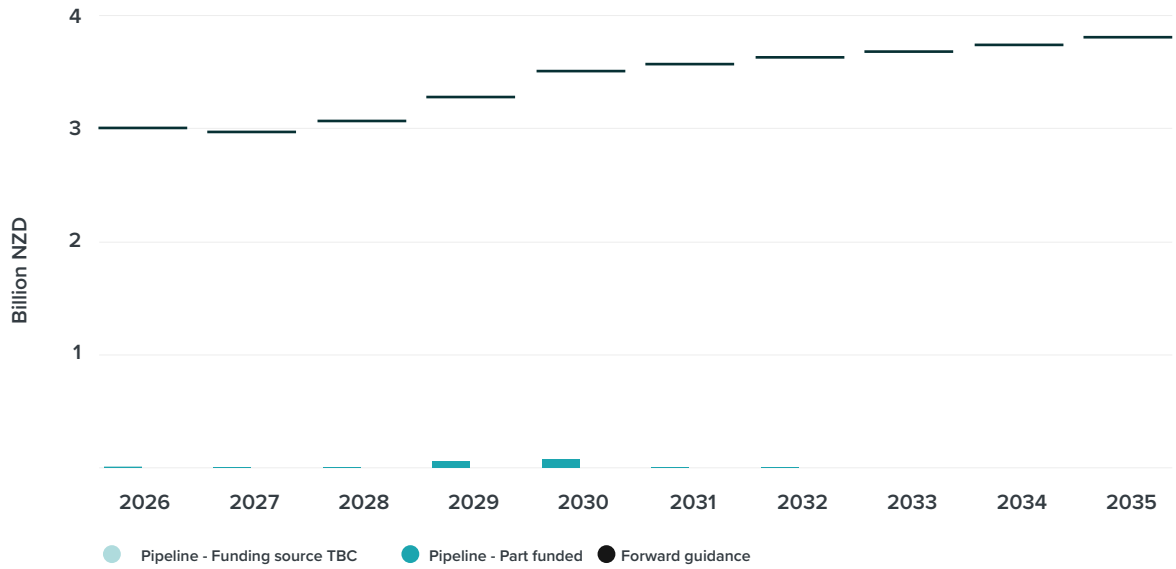
This table provides further detail on our Forward Guidance, which is summarised in Chapter 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report.[189] Our analysis for the telecommunication sector includes investment in all fixed 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 Stats NZ 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 suggest that renewal or replacement of the existing network will continue to drive investment after this period of high investment.

5.7. Current investment intentions

- The Pipeline's information on 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 Stats NZ, 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 (turquoise bars) is significantly below the Commission's investment demand outlook (black lines) over the 2026–2035 period. This is due to limited Pipeline contributions by the commercial entities responsible for telecommunications investment.
- The Commission's Forward Guidance, which is based upon Stats NZ's capital investment data, suggests slowly rising investment demand that is broadly in line with economic growth.

Figure 50: **Telecommunications investment intentions**



The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline. The black lines show the Commission's Forward Guidance on investment demand.

5.8. Key issues and opportunities

- **Rural telecommunications access:** 13% of homes are not connected to fibre broadband. The migration to newer technologies and increasing community expectations will increase demand for a mix of fibre, wireless (FWA), and satellite technologies to provide modern telecommunications services to customers not currently served by the fibre network. Some responders to the draft National Infrastructure Plan noted the difficulty and time taken to obtain resource consents for new infrastructure in rural areas. Funding and financing infrastructure expansion to these areas will remain challenging for commercial providers, particularly if ensuring equal access to these technologies is a priority.
- **Governance and regulation:** New Zealand has many service providers, indicating competition in access for consumers and businesses. However, OECD surveys into regulation in the sector have highlighted potential gaps related to competition in the sector and scope of regulation (only Chorus is price-quality regulated, while LFCs are subject to information disclosure) and relative separation of the Commerce Commission from Government priorities. Industry feedback on the draft National Infrastructure Plan indicates the importance of access to radio masts and new sites for masts, as well as spectrum allocation to foster greater growth in wireless technologies.
- **Transparency and information:** There are some publicly available or centralised sources of information on the condition of telecommunications assets. Chorus and LFCs publish reasonably thorough asset age and health information (although still short of full asset management plans like electricity and gas). As mobile and other network assets are subject to less economic regulation, there is less publicly available information on asset condition. There is also comparatively little research on the vulnerability of New Zealand's telecommunications assets to natural hazard risk.
- **Technological advancement:** Keeping pace with technological advancement in information technology will be a continual challenge for telecommunications providers. Despite New Zealand's very low 5G coverage and low rates of mobile data usage, community perceptions of telecommunications infrastructure are high. This suggests New Zealand's fibre and 4G networks are meeting the expectations of the community. However, advancements in technologies that require fast mobile communications may increase demand for 5G, and New Zealand's slow start to 5G deployment may act as a bottleneck to the uptake of such technologies.
- **Coordination:** Feedback on the draft National Infrastructure Plan suggested that there may be an issue around some networks peering with each other to pass data. It has been suggested that some networks are buying connectivity to Australia and the United States in order to peer locally within New Zealand.

6. Education

6.1. Institutional structure

Service delivery responsibilities

- The education sector includes primary and secondary education and tertiary education. It also includes early childhood education (ECE), which we discuss but, due to data limitations and the sector's primarily private sector provision, have not included in our Forward Guidance for investment demand.
- The Ministry of Education (MoE) administers buildings and land for state schools and kura on behalf of the Crown. School boards are responsible for day-to-day maintenance and management of their property, with support from MoE regional offices. The New Zealand School Property Agency (NZSPA) is expected to be established in 2026 and have responsibility for planning, building, maintaining and administrating the school property portfolio, taking over from MoE. Network functions, including determining where growth needs to occur, will remain with MoE.
- 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) and can be located on either Crown-owned or privately owned property. 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, including kindergartens, are mainly provided by community-based or privately owned entities, with the exception of early childhood services operated by councils and other publicly owned entities. They can operate on either a for-profit or not-for-profit basis.

Governance and oversight

- MoE oversees primary and secondary school education policy and legislation. With the creation of the NZSPA, MoE's role in infrastructure provision will focus on operational planning, funding allocation and investment. This will include ongoing oversight of investment (including responding to projected changes in local enrolment demand) and the monitoring of investment. The NZSPA will take over major capital works, redevelopment projects and oversight of routine maintenance activities. MoE will continue to set performance frameworks for school boards, but this will no longer include the oversight of maintenance delivery.
- 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 by MoE under the Education (Early Childhood Services) Regulations Act 2008. As it does with schools, MoE oversees the policy and legislation associated with ECE.

6.2. Paying for investment

- State schools are funded through general taxation with varying degrees of private/household co-funding.
- Once MoE allocates funding to schools, the associated School Board prepares a 10-year property plan of priorities, which is designed to operate under the funding allocation. This is used to ensure that buildings and facilities are adequate.
- 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 boards.
- 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 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.

6.3. Historical investment drivers

- At a high level, investment in new education infrastructure has historically been driven primarily by population growth, internal population migration and demographic change. Investment demand for primary and secondary schools is highly localised. Additionally, school premises and facilities often serve wider functions within their communities, such as civil defence, health and civic (election) hubs, along with providing community sport and education amenities.
- Student populations have pushed the number of schools to two main peaks. The first peak was around 1930, when the number of primary students drove school numbers to 3,256. 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, but the number of smaller rural schools was rationalised, so the second peak occurred in the late-1960s at just over 3,000 schools. As student volumes declined in later decades, so did the total number of schools, although not in proportion to the decline in student volumes. This could reflect community values provided by schools and expectations that schools remain open despite dwindling enrolment numbers.
- As of July 2024, there were 2,468 state and state-integrated primary and secondary schools (excluding private schools, specialist, charter schools and teen parenting units).
- 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 maintenance and renewal needs. 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.

6.4. Community perceptions and expectations

This section summarises what we know about the New Zealand public's perceptions and expectations of the education sector, at a national level.

- 'Ageing schools and hospitals' were the third most important infrastructure priority, according to a New Zealand Infrastructure Commission survey of over 23,000 New Zealanders.[190]
- Education services in general are very important to New Zealanders, consistently ranking in the top 10 issues.[191]
- Education services are the New Zealand 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.[192]
- In a nationally representative survey undertaken by the Commission as part of consultation on the draft National Infrastructure Plan, 59% of New Zealanders who use schools reported that school infrastructure services meet or exceed their needs, while 41% reported it somewhat or consistently fails to meet their needs.

6.5. Current state of network

New Zealand's difference from benchmark country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Education	+1%	-10%	+6%	+4%

Comparator countries: Australia, Chile, Finland, Iceland, Ireland, Norway, and the United States. Similarity based on income, population density, population share aged 5 to 17, population growth since 1960, exposure to natural hazard events, 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.[193]

- 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 for our 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, the findings of a recent Ministerial Inquiry into School Property included that many school buildings were undermaintained and there was a lack of transparency around investment decisions and prioritisation.

6.6. Forward Guidance for capital investment demand

Forecast investment levels for education (primary, secondary, tertiary)

	2025–2035	2035–2045	2045–2055	2010–2022 historical average
Average annual spending (2025 NZD)	$3.5 billion	$3.9 billion	$4.7 billion	$3.0 billion
Percent of GDP	0.8%	0.7%	0.7%	1.0%

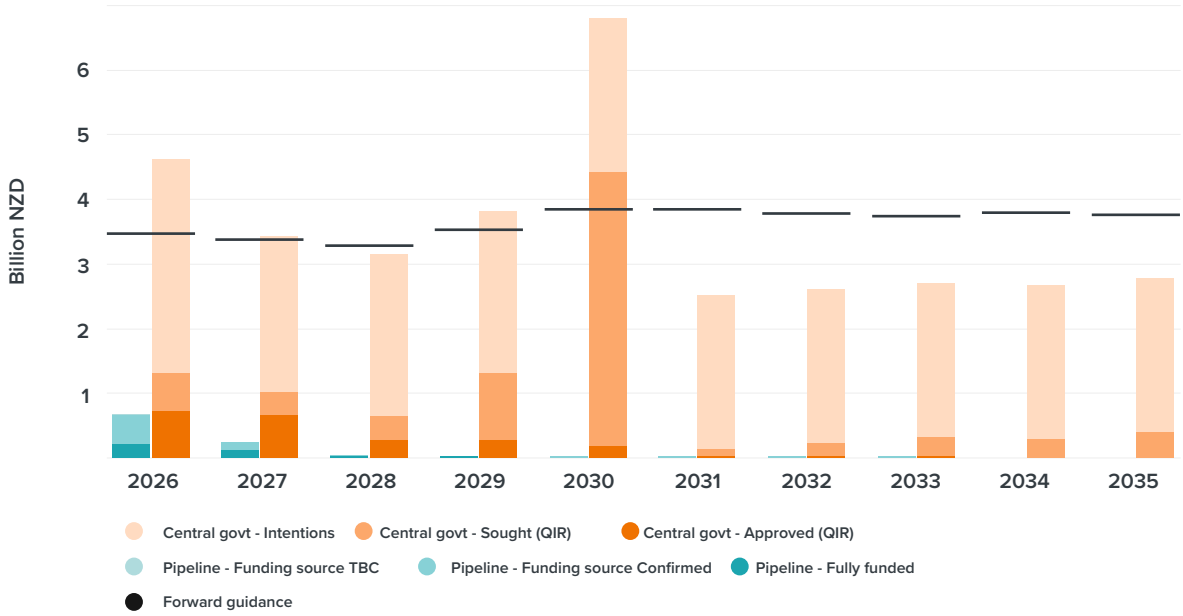
This table provides further detail on our Forward Guidance, which is summarised in Chapter 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report.[194]

- 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 population ageing, which means less demand for school infrastructure in relative terms.
- However, these averages mask important regional variations. For example, almost 20% of schools (369) have capacity utilisation over 105%, while 11% (224) have utilisation of less than 50%. Population distribution will influence expenditure requirements in certain areas, but it will also be important to balance equity of access.
- Demographic trends will present challenges for the sector about how to optimise renewals and maintenance to meet ongoing needs. Many schools built in the 1970s will require renewal, but some will need to be right-sized to meet demographic trends. At the same time, teaching spaces will need to be added to areas that are at capacity or growing.
- Future demand for schools will be increasingly driven by localised demographic changes. For example, 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.

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 (turquoise bars) and programme-level intentions in central government's reporting to the Treasury's Investment Management System (orange bars) are in line with the Commission's Forward Guidance outlook (black lines) in the late 2020s but decline after that point.
- The Ministry of Education undertakes longer-term network planning. However, education seems to have short-term funding 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 only equal to 3% of the Commission's Forward Guidance on future investment demand.

Figure 51: **Education investment intentions**



This chart compares two different measures of future investment intentions with the Commission's Forward Guidance on investment demand. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The orange bars show the measure of investment intentions from central government's reporting of infrastructure-specific initiatives provided to the Treasury's Investment Management System, again distinguishing by funding status. The black lines show the Commission's Forward Guidance on investment demand. This reflects all asset classes, whereas the investment intentions are restricted to infrastructure assets.

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, which may also include the recycling or repurposing of existing assets no longer aligned with demand.
- **Uneven demographic change:** While the overall number of students is expected to decline over time, there will still be areas with very high demand. The Commission and MoE's modelling shows that areas around Auckland and parts of Canterbury are expected to have growing school demand. Moreover, 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. Hospitals

7.1. Institutional structure

Service delivery responsibilities

- The Commission's work focuses primarily on the hospital sector, rather than the wider healthcare sector, as hospitals are the most infrastructure-intensive element. The hospital sector includes both public and private hospitals. The broader healthcare sector includes primary healthcare services (such as general practitioners) and other community healthcare services (such as community health providers and specialist services). While the broader healthcare sector is not formally included in our infrastructure demand analysis, there are significant interactions between the sectors that need to be considered.
- New Zealand has recently adopted a model with a single centralised Crown entity (Health New Zealand/Te Whatu Ora) 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 and non-profit entities.

Governance and oversight

- The Ministry of Health monitors the performance of Health New Zealand. It is responsible for health policy and planning. It is also responsible for the regulation of public and private hospitals under the Health and Disability Services (Safety) Act 2001.
- Oversight tends to operate via budget and performance targets to improve health outcomes within funding envelopes.

7.2. Paying for investment

Public funding

- The government funds around 80% of the cost of health and disability services through taxation (around 70% contribution) and the Accident Compensation Corporation (ACC) levy (around 10%). Other costs are met by users directly and via private insurance. Public hospitals generally provide services free of charge, but with services rationed using waiting lists. Broader healthcare services are subsidised but often have co-payments paid by users.
- The Government sets an annual budget for broad categories of health spending, with Health New Zealand then allocating funding to specific services and regions. ACC funds healthcare for accident recovery through an insurance model, with services provided by public and private providers.
- Some hospital services are funded through private insurance and out-of-pocket payments by users. These are generally used to gain faster access to specialist treatment (such as avoiding public hospital wait times) or to access services not funded by the public system (for example, unfunded cancer treatments). Some healthcare services are also funded by voluntary organisations and private donations, supplementing public funding.

7.3. Historical investment drivers

- Need for hospital infrastructure is driven by population and demographics, income and standards growth, and changes in medical technologies and clinical services delivery methods.
- Investment in hospital 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 and higher community expectations.
- Hospital infrastructure is one part of a much wider health system that contribute to health outcomes, ranging from specialist hospital workforces to primary care services to public health promotion. Hospital services are often provided to treat acute and severe health need. A goal of the wider health system is to prevent, manage and treat health needs earlier, often avoiding the need for acute hospital services. Therefore, the effectiveness of the wider health system at preventing and managing health needs is a determinant of the need for infrastructure.

7.4. Community perceptions and expectations

This section summarises what we know about the New Zealand public's perceptions and expectations of the health and hospital sector, at a national level.

- 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.[195]

- While overall, New Zealanders would prefer to spend more efficiently on public services and infrastructure, rather than spending more, health is perhaps the main exception. Most New Zealanders support spending more to improve health services (either via new funding or reallocating funding).[196]
- 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.[197]
- In a nationally representative survey undertaken by the Commission as part of consultation on the draft National Infrastructure Plan, 35% of New Zealanders reported that hospital services meet or exceed their needs, while 65% reported it somewhat or consistently fails to meet their needs.

7.5. Current state of network

New Zealand's difference from benchmark country average

Network	Investment	Quantity of infrastructure	Usage	Quality
Health	-24%	-10%	-2%	-13%

Comparator countries: Australia, Denmark, Iceland, Norway, Sweden, and the 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.[198]

- 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.
- Waiting times for elective surgeries, which could partially reflect infrastructure availability (operating theatres, equipment), are higher than most comparator countries.
- There is some evidence of deteriorating quality of assets. While building envelopes of hospitals are mostly in average to good 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).

7.6. Forward Guidance for capital investment demand

Forecast investment levels for hospitals

	2025–2035	2035–2045	2045–2055	2010–2022 historical average
Average annual spending (2025 NZD)	$1.6 billion	$2.1 billion	$2.4 billion	$0.8 billion
Percent of GDP	0.4%	0.4%	0.4%	0.2%

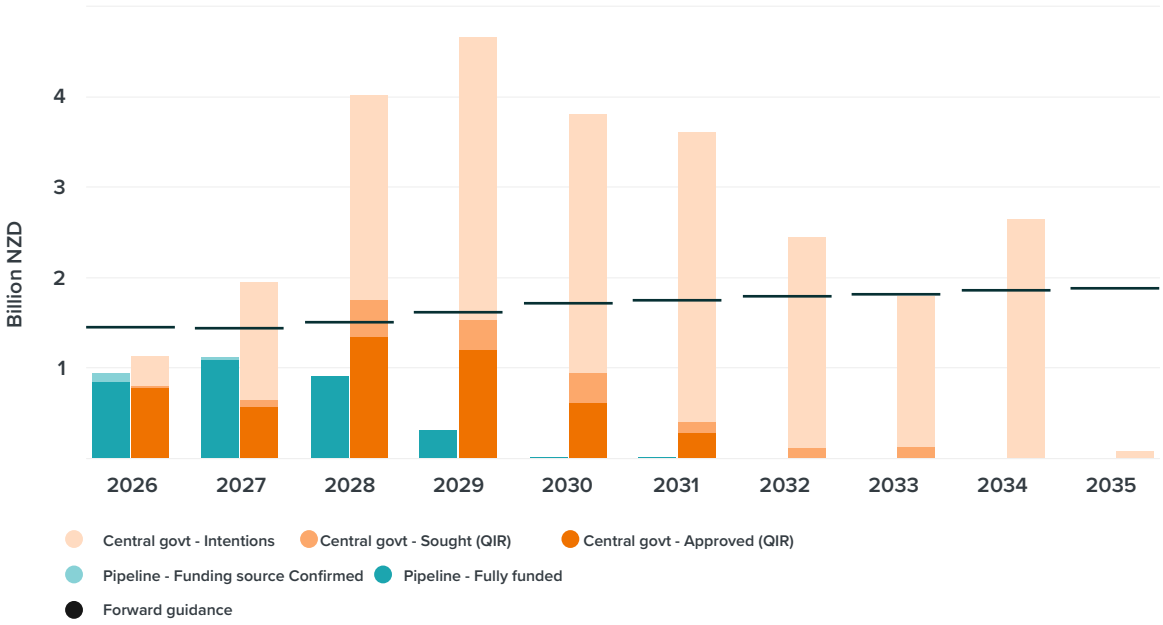
This table provides further detail on our Forward Guidance, which is summarised in Chapter 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report.[199] Our investment outlook is primarily focused on hospital infrastructure and fixed assets therein, rather than other infrastructure such as general practitioner offices or community health centres.

- We anticipate a significant uplift in the share of GDP being spent on health infrastructure to meet the growing needs of an ageing population. Changing models of care and major medical innovations may ease demand for hospital services or shift delivery into the community. However, it is likely that population ageing will put upward pressure on hospital demand, and some medical innovations may increase demand for hospital services.
- Renewals of existing stock built during the boom period will also contribute to rising investment requirements over the next 20 years.
- Low levels of investment in the 1990s and since the mid-2010s likely led to deterioration of the hospital estate, creating a backlog of renewals and maintenance.

7.7. Current investment intentions

- The following chart shows that projected spending to deliver initiatives in planning and delivery in the Pipeline (turquoise bars) and approved 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 2026–2035 period. However, the full value of investment intentions reported to the Investment Management System are higher than the Commission's investment demand outlook.
- Information currently in the Pipeline is focused on fully funded initiatives and does not indicate work in planning. Based on investment intentions reported to the Investment Management System we expect significant amounts of planned and unfunded investment to be added to the Pipeline over time. The Health Infrastructure Plan sets out over $20 billion of investment intentions in the health sector.

Figure 52: **Hospitals investment intentions**



This chart compares two different measures of future investment intentions with the Commission's Forward Guidance on investment demand. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The orange bars show the measure of investment intentions from central government's reporting of infrastructure-specific initiatives provided to the Treasury's Investment Management System, again distinguishing by funding status. The black lines show the Commission's Forward Guidance on investment demand. This reflects all asset classes, whereas the investment intentions are restricted to infrastructure assets.

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 structured leases or public-private partnerships for asset management services) may be an opportunity to improve asset management practices for new hospitals.
- **Coordination:** Given the growing needs in the sector, investment plans initiated by Health New Zealand will need to be connected to wider Budget processes managed by the Treasury.
- **Project appraisal:** As many hospitals prepare for renewal, ensuring their replacements are the optimum size and not overdesigned will help to manage pressure on funding availability. An important enabler of this will be long-term service planning of hospital services. This will inform when it makes sense for a local hospital to provide a service, or whether it is safer, higher quality and more efficient for the service to be provided from a larger hospital covering a wider catchment area. Better planning, appraisal and procurement can also help identify cost efficiencies, maximising what can be delivered within limited health funding.
- **Changing models of care:** Given the significant growing needs of the sector, wider changes are likely needed to help slow the growth in demand for acute hospital services. This could include consolidating hospital services in fewer hospitals to improve efficiency and quality, changes in models of care to shift services into the community, better integration between primary and secondary care to minimise hospital stay times and treat health needs earlier, and greater investment in prevention and population health services to reduce the need for acute hospital services.
- **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 adaptable.
- **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.

8. Public administration

8.1. Institutional structure

Service delivery responsibilities

- The public administration sector is a broad category that includes central and local government administration buildings and associated infrastructure. Public administration infrastructure underpins the functioning of democratic governance (Parliament and council chambers), while other central government buildings provide amenities and are considered elsewhere.
- Individual central government departments are responsible for procuring their own administration buildings, with centralised support from the Government Property Office (GPO). Apart from specialised and security focused assets, these are largely leased. For local government, this is the responsibility of councils, to the extent they own the buildings they use (as opposed to leasing office space) and the community assets they provide. While leasing buildings is an operating expense, the fit-out of the interiors is the responsibility of the tenant departments and can be a significant capital expense. This also provides for a separation of the repairs and maintenance responsibilities between the landlord for the building (for example, lifts) and the tenant for fittings.

Governance and oversight

- The Chief Executive of the Ministry of Business, Innovation and Employment (MBIE) is the System Lead for Property, and the GPO serves as their operational arm within MBIE. The GPO oversees around 940,000 square metres of property, including office accommodation and public interface areas, across roughly 70 central government organisations. Acting as the strategic coordinator for the central government property system, the GPO sets standards, provides tools and guidance, and approves all leasing activity to ensure effective property management.
- The GPO also administers and mandates the Government Property Portal (GPP), which agencies are required to submit their office accommodation data into. The GPO also assists with leasing and offers internal brokerage services to optimise the use of underutilised or vacant office space within the system.
- Public administration assets are distributed over central government departments and Crown agencies. Relevant ministries are responsible for policy and planning. Oversight tends to operate via budget and performance targets set by Ministerial expectations to improve productivity and cost efficiencies.
- The Department of Internal Affairs has an ongoing oversight function around the performance of the local government sector, which includes how it invests in and manages assets.

8.2. Paying for investment

- Funding of central government administration buildings and facilities comes from general taxation. Many central government office buildings are leased, but the leasing departments and agencies are responsible for the internal fit-out of the office space, and the associated maintenance and renewals for internal fittings.
- Funding for local government administration buildings is funded through rates.

8.3. Historical investment drivers

- Demand for office space closely align with the movements in the size of the public sector, following the ebb and flow of headcount expansion and contraction.
- Public administration buildings will have relatively standardised renewal and maintenance requirements to maintain safety and capability to be occupied. They may also require investment to become more resilient to natural hazard events or to bring them up to modern standards.

8.4. Community perceptions and expectations

- This section summarises what we know about the New Zealand public's perceptions and expectations of the public administration sector, at a national level.
- We do not have data on New Zealanders' views on the quality of public administration buildings, but a recent 2022 survey found that around two-thirds of New Zealanders were satisfied with administrative services (68%), which is slightly above the OECD average (63%).[200]

8.5. Current state of network

- Stats NZ capital stock data is grouped into a large category of public administration and safety, which includes government buildings, corrections, justice, police, defence assets, and fire services. We have gathered data from entities' annual reports to understand the scale of these subsectors.
- Initial analysis by the Commission indicates that the value of central government buildings and equipment not related to health, schools, justice, defence, or corrections to be around $12 billion in 2022.
- We estimate that since 2007, investment in these buildings was over $1 billion a year, on average.
- We don't have full information on building condition, but we can observe the extent to which total investment (including renewals as well as improvements) is keeping up with depreciation. (Note: If investment falls below depreciation, this implies assets are being 'sweated out'. However, even if investment is above depreciation, if that investment is directed to new infrastructure, it is still possible that existing assets are deteriorating at the expense of new infrastructure. In the absence of knowing renewal investment to depreciation specifically, the higher the ratio the better the overall condition of the asset base.)
- For overall public administration and safety, investment to depreciation ratios have averaged just over 150% since the year 2000. However, corrections investment has been elevated during the period, suggesting that the condition of central government buildings (and other subsectors of the category) has either been steady or declining (rather than improving) over the last 25 years.

8.6. Forward Guidance for capital investment demand

Forecast investment levels for central government administration buildings (excl. health and education)

	2025–2055	2007–2022 historical average
Average annual spending (billions 2025 NZD)	$1.4–1.9 billion	$1.2 billion
Percent of GDP	0.2-0.3%	0.3%

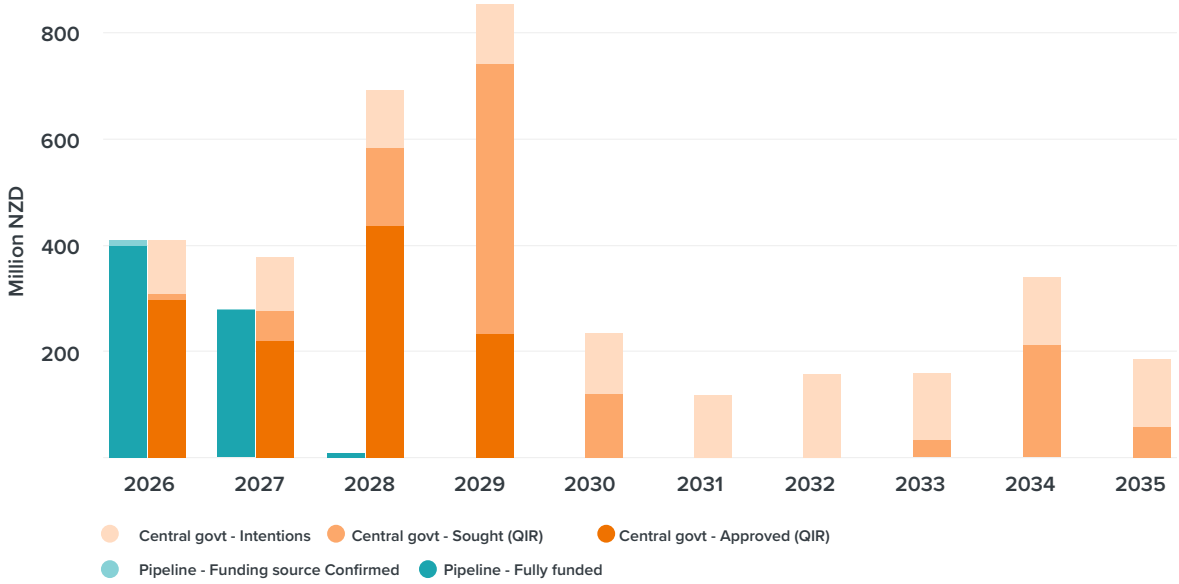
This table provides further detail on our Forward Guidance, which is summarised in Chapter 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report.[201]

- Our outlook for this sector is largely stable, with investment levels settling at close to the long-term trend. It is not expected that income and population dynamics will have a significant impact on the demand for central government buildings. This means that renewals and maintenance of the existing stock will be the primary driver of investment need.

8.7. Current investment intentions

- For central government public administration buildings, our Forward Guidance for this sector is largely a multi-year indicative projection, rather than an annual target. As such, we have excluded it from the chart below.
- The following chart shows projected spending to deliver initiatives in planning and delivery in the Pipeline (turquoise bars) and programme-level intentions in central government's reporting to the Treasury's Investment Management System (orange bars) over the 2026–2035 period. Local government public administration buildings have not been included.
- Investment intentions and funding sought outweighs approved and funded projects.

Figure 53: **Public administration investment intentions**



This chart compares two different measures of future investment intentions. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The orange bars show the measure of investment intentions from central government's reporting of infrastructure-specific initiatives provided to the Treasury's Investment Management System, again distinguishing by funding status. The chart does not show a comparison using the Commission's Forward Guidance on investment.

8.8. Key issues and opportunities

- **Asset management:** According to the Commission's report 'Taking care of tomorrow today: Asset management state of play', development of long-term asset management and investment plans is a key opportunity for the sector. Better asset management will also give visibility about the scale and quality of the assets we have in this sector.
- **Transparency and accountability:** Central government, which has funding and oversight roles in this sector, has an opportunity to provide more transparency around its maintenance and renewal requirements.
- **Project appraisal and evaluation:** The evaluation of project proposals could be improved. Process improvements could include more effective cost estimation, optimising investments and understanding the prioritisation and trade-offs associated with investment decisions.
- **Lease versus ownership:** For general-purpose infrastructure such as office space, leasing is often preferred over ownership. Ownership exposes agencies to the risk that demand may fall below owned supply, leaving surplus space and sunk costs. Leasing a piece of infrastructure shifts that risk to the third party, who can reduce this risk by leasing to multiple tenants. This approach is standard for central government office accommodation, with the GPO actively seeking to move towards a more coordinated model that could unlock and maximise the benefits and efficiencies under this approach. There may be opportunities to shift to leasing for other general-purpose infrastructure or in the local government sector.

9. Law and public safety

Law and public safety is a broad sector that covers justice and the courts, New Zealand Police, and Fire and Emergency New Zealand.

9.1. Institutional structure

Service delivery responsibilities

- The Ministry of Justice owns and operates the portfolio of buildings that comprise the New Zealand court system. The court system operates a hierarchical structure, with each level of court having specific jurisdiction and appeal pathways, which is funded and managed through the Ministry's annual budget.
- New Zealand Police is headquartered in Wellington with 12 police districts, each with a central station and a network of subsidiary and suburban stations. As of November 2025, there were 295 police stations across New Zealand, ranging from large, 24-hour central stations in major urban centres to smaller community policing centres in suburban and rural areas. The property portfolio is owned and managed centrally, although some land is owned by iwi and some buildings are leased.
- Fire and Emergency New Zealand (FENZ) is New Zealand's main firefighting and emergency services organisation, owning over 600 fire stations and around 1,280 fire trucks and specialist vehicles. They attend a significant number of incidents – not just fires, but other events like urban search and rescue. FENZ also acts as a regulator for fire safety, issuing fire permits and undertaking enforcement activities based on its regulatory duties.

Governance and oversight

- The Ministry of Justice is the lead agency for the justice sector, responsible for justice policy and legislation, court administration, and constitutional issues. It also chairs the Justice Sector Leadership Board (JSLB) to coordinate with other justice sector agencies, of which both Police and Corrections are members.
- Justice and Police are public service departments accountable to their own Ministers.
- Independent oversight is provided by bodies such as the Independent Police Conduct Authority (IPCA). The judiciary, while operating within facilities managed by the Ministry of Justice, is constitutionally independent of the executive government, a crucial element of governance.
- FENZ was founded as a Crown entity under the Fire and Emergency New Zealand Act 2017, amalgamating 40 organisations. FENZ has its own board and is accountable to the Minister of Internal Affairs. The Department of Internal Affairs is responsible for overseeing FENZ, including financial performance and strategic direction.

9.2. Paying for investment

- Justice and Police receive individual annual parliamentary appropriations that are funded through general taxation. These appropriations include both capital and operating expenditure. Significant projects that require large amounts of capital are subject to a separate business case and Budget bid process. The Ministry of Justice collects minimal revenue from filing fees, which are largely used for operating expenditure.
- FENZ is funded through the fire services levy placed on property insurance contracts and Crown funding for public good services.

9.3. Historical investment drivers

- Most investment in Justice is driven by the need to modernise ageing buildings, improve security, and incorporate technology for more efficient processes. Investment in new infrastructure is tied to population-driven demands, as a larger population will require greater capacity to process those charged with crimes. Government policy approaches to crime will also determine demand volumes for courts.
- Like Justice, Police investment is driven by a mix of maintenance, renewals, population growth and Government policy. In recent times, changes in policing strategy, such as a move towards community-based policing, have influenced investment in smaller, more localised police stations and bases.
- When established in 2017, FENZ inherited assets from 40 organisations with varying levels of investment need. Renewals are consistently a large driver of investment for FENZ, as fire appliances make up a large portion of its asset base and they generally have an operating life of 20 to 25 years.
- For all these sectors, local population dynamics are important considerations for future demand. For instance, consolidation of the fire service drove significant rationalisation investment in station co-location and upgrades, fleet standardisation and communications infrastructure integration. Investments in digital technologies have helped to improve the quality and reliability of emergency services.

9.4. Community perceptions and expectations

- This section summarises what we know about the New Zealand public's perceptions and expectations of the law and public safety sector, at a national level.
- There is very little data available that represents New Zealanders' preferences and expectations for law and public safety infrastructure. Generally, studies ask about spending on different types of public services, rather than asking specifically about the infrastructure that enables those services.
- However, while most New Zealanders do not indicate that concern for crime is a top priority, spending more on police and law enforcement as a priority appears to be a preference for most people.[202]

9.5. Current state of network

- As of 2024, the Ministry of Justice's capital assets (excluding land) were valued at about $1.2 billion. The value of Justice assets has increased 136% since 2004 in real terms.
- In 2024, Police had capital assets of about $710 million. Police assets have only grown 20% since 2004 in real terms. There was an elevated period of investment from 2009 through to 2013. Aside from that, there were multiple time periods where the value of assets declined, indicating a wearing out of the capital stock.
- Based on data available since 2007, investment (such as additions of fixed assets) in Justice and Police assets has averaged about $215 million per year.
- From an asset perspective, FENZ own and operate over 600 fire stations, as well as three communication centres, five regional offices, and their corporate headquarters. FENZ has over 1,280 fire trucks and specialist vehicles. The estimated physical asset base (property and equipment) is approximately $1.5 billion, 60% of which is in buildings, and 20% in fire appliances. The late 2010s saw FENZ investing significantly to upgrade its buildings, but outside of that period, investment has been relatively subdued.
- We don't have full information on building condition, but we can observe the extent to which total investment is keeping up with depreciation. (Note: If investment falls below depreciation, this implies assets are being 'sweated out'. However, even if investment is above depreciation, if that investment is directed to new infrastructure, it is still possible that existing assets are deteriorating at the expense of new infrastructure. In the absence of knowing renewal investment to depreciation specifically, the higher the ratio the better the overall condition of the asset base.)
- The investment to depreciation ratios for Justice and Police averaged 131% and 107% respectively since 2007. These averages mask significant ebbs and flows. For instance, we estimate ratios were well below 100% for Police in the late 2010s, while Justice saw ratios at or below 70% around the early 2020s. For FENZ, since 2000[203] we estimate the investment to depreciation ratio has been 125%, with the ratio a bit higher since 2017 when FENZ was established (145%). Because investment was also required to respond to population and income growth, this suggests renewal-focussed investment may have been below the level required by depreciation.
- Much of the courthouse estate is ageing, with many buildings requiring seismic strengthening, security upgrades, and modernisation to be fit for purpose. Court capacity is also an important factor, with Budget 2025 allocating $245.5 million over four years to address pressures in the courts and legal aid.

9.6. Forward Guidance for capital investment

Forecast investment levels for law and public safety

	Justice	Police*	FENZ
Average annual spending (billions 2025 NZD)	$0.15-$0.17	$0.06-$0.19	$0.10-$0.12
Percent of GDP	0.03%	0.01%-0.03%	0.02%

Note: Spending is modelled for law and public safety as a whole, then broken down into each subsector's estimated relative share of total government public administration and safety, using estimates of capital stock and investment over the past 10 to 20 years. *Police's range is wider than the other two sectors because it's relative share varies depending upon on the measure – historical investment share or historical capital stock share.

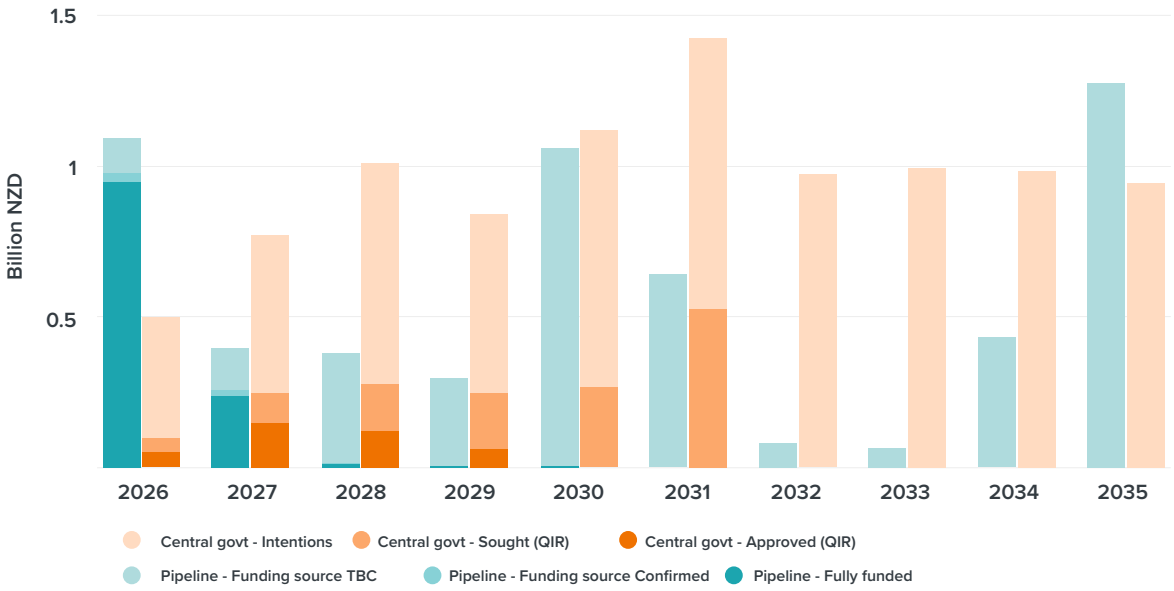
- The Commission's Forward Guidance for Justice, Police, and FENZ are largely reflective of these agencies' relative importance within the overall public administration and safety sector delivery activities.

9.7. Current investment intentions

- The current Government has implemented a focus on policing and justice policy approaches, including a stronger police presence and longer sentences, especially for three strikes violent and sexual offences. This approach will require increases in operational funding across the justice sector, but also complementary infrastructure investment to support the expected increased service levels.

- For justice and public safety, our Forward Guidance is largely a multi-year indicative projection, rather than an annual target. As such, we have excluded it from the chart below.
- Beyond the first two years in the Pipeline, funding is uncertain for these projects.

Figure 54: **Law and public safety investment intentions**



This chart compares two different measures of future investment intentions. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The orange bars show the measure of investment intentions from central government's reporting of infrastructure-specific initiatives provided 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.

9.8. Key issues and opportunities

- **Asset management:** Investment to depreciation ratios over the past 20 years suggest investment levels in the sector may have been insufficient to keep pace with renewal and maintenance needs, given population and income growth also grew significantly over this period. Improved asset management and investment planning practices could yield significant benefits and certainty for the sector. Improved planning and collaboration between law and public safety agencies can provide opportunities for cost savings and operational efficiencies.
- **Project appraisal, evaluation, planning and delivery:** There is an opportunity for central government agencies in this sector to submit their major capital proposals to the Infrastructure Priorities Programme to ensure value for money of scare investment dollars. The various infrastructure bodies across central government, including the Infrastructure Commission, Crown Infrastructure Delivery, and National Infrastructure Funding and Financing can support agencies with all aspects of appraisal, planning, and delivery of vertical infrastructure.
- **Policy certainty:** Investment levels in this sector are heavily influenced by Government policy objectives. Providing the sector with certainty around law and public safety outcomes could benefit investment planning.
- **Delivery in regional areas:** Delivery of law and public safety services can be more difficult in rural areas where lower population density makes it difficult to justify large infrastructure investments.

10. Corrections

10.1. Institutional structure

Service delivery responsibilities

- The Department of Corrections (Ara Poutama Aotearoa) manages New Zealand's 18 adult prisons. These facilities are categorised by security level and whether they house male or female prisoners. There are 15 prisons for male offenders located throughout the North and South Islands and three prisons for female offenders, situated in Auckland, Wellington, and Christchurch.
- As part of its remit, Corrections also has responsibility for probation services and community sentences provided by a network of over 100 Community Corrections Sites across the country. Most of these community sites are leased, but they feature substantive fit-outs that meet Correction's standards for safety and security of staff and clients.
- Beyond the adult prison system, there are also five youth justice residences. These are secure facilities for young offenders and are managed by Oranga Tamariki, the Ministry for Children.

Governance and oversight

- The Ministry of Justice is the lead agency for the justice sector, responsible for justice policy and oversight of Corrections and Police. It also chairs the Justice Sector Leadership Board (JSLB) to coordinate with other justice sector agencies, of which both Police and Corrections are members.
- The Department of Corrections is accountable to the Minister of Corrections. Independent oversight is provided by the Office of the Ombudsman, and the Inspector of Corrections, which handle complaints and conduct investigations.

10.2. Paying for investment

- Corrections receives annual parliamentary appropriations that are funded through general taxation. These appropriations include both capital and operating expenditure. Significant projects that require large amounts of capital are subject to a separate business case and Budget bid process.
- From time to time, New Zealand has used public-private partnerships (PPPs) for major prison infrastructure projects, including Auckland South Corrections Facility (Wiri), Waikeria Prison expansion, and part of Auckland Men's Prison. Auckland South Corrections Facility is unique in that it is fully managed by the PPP, both in terms of correctional service delivery and infrastructure. Phase 1 of the Christchurch Men's Prison redevelopment is expected to be delivered under a revised infrastructure-only PPP model, similar to the one in place at Auckland Men's Prison and Waikeria. The use of PPPs has had mixed results for prisons. For example, the Mount Eden Prison PPP, which delivered both infrastructure and correctional services, ended earlier than expected due to perceived contractual difficulties.

10.3. Historical investment drivers

- Corrections infrastructure is tied to population-driven demands, as a larger population will require greater capacity to process offenders. However, policy decisions around sentencing and managing of court backlogs have a larger impact on the requirements for prison capacity. Other general drivers of prison infrastructure include changing levels of service (for example, single bunking relative to double bunking) and improving standards within prisons based on human rights conventions.
- A significant driver for investment in the corrections sector has been the rising prison population, which has led to periods of time where overcrowding pointed to the need for new facilities and capacity expansions. However, there have also been periods of low incarceration levels which underpinned a rationalisation of the prison stock. This has led to undercapacity followed by overcapacity under differing policy regimes, making forecasting at the sector level challenging. The Commission's analysis indicates past forecasts of prison population have on average over-estimated capacity requirements, while volatility in the forecast errors means a combination of over-shooting and under-shooting population numbers makes it difficult to plan network capacity.[204]
- The prison population can be broadly divided into two groups: prisoners sentenced of a crime and serving their imposed time, and remand prisoners. Remand prisoners are either accused (presumed innocent and held before trial) or convicted (awaiting sentencing following a conviction). The share of prisoners who are on remand has been broadly increasing over time (currently around 40%), creating operational challenges and pressure to provide more high security 'beds'. Remand prisoners need to be separated from the sentenced prison population, and are often

managed as a high security risk on arrival by default – a practice dating to a time when remand was used rarely and only for people accused of the most serious offences.

10.4. Community perceptions and expectations

- This section summarises what we know about the New Zealand public's perceptions and expectations of the corrections sector, at a national level.
- New Zealanders views on the need for prisons are mixed. One study showed that almost 60% of New Zealanders agree that in the future we will use prisons less than now, or about the same, while only 16% agree that we will use prisons 'a little bit more' than we currently do.[205] A different study showed that about half of New Zealanders currently believe that spending on new prisons is necessary to some extent.[206]

10.5. Current state of network

- The total fair value of Corrections' property, plant and equipment (PP&E) assets (excluding land value) was $4.8 billion as of 30 June 2025,[207] making it one of the largest infrastructure sectors within public administration and safety.
- The value of the capital stock increased rapidly in the early 2000s as capital investment averaged over $600 million per year from 2005 through to 2008. This corresponds with the opening of four prisons, expanding total spaces by over 2,500 inmates. Since that period, investment has been more muted, with the exception of the new 596-bed Waikeria Prison, which was completed in April 2025 and valued at $792.6 million for its PPP-related PP&E assets in the agency's annual report.[208] Since 2023, plans to meet an increasing prison population have included a further 810-bed expansion at Waikeria and 240 additional beds at Christchurch Men's Prison.
- Overall, asset condition is trending downwards within Corrections, with higher levels of investment in renewals and maintenance of existing stock required in future to maintain levels of service, in addition to the significant capital investment planned in new-builds to meet growing demand.
- Corrections is not currently meeting its own levels of service targets for prison asset condition, with 10% of prison asset value being held in poor/very poor condition; 6% above a maximum 4% target. It is also only achieving 81% of prison asset value in good/very good condition, against a target of no less than 85%. The percentage of owned Community Corrections Site asset value with a poor/very poor condition also rose from 2% to 5% in 2024, against the target of no more than 4%.[209]
- We can observe the extent to which total investment (including renewals as well as improvements) is keeping up with depreciation. (Note: If investment falls below depreciation, this implies assets are being 'sweated out'. However, even if investment is above depreciation, if that investment is directed to new infrastructure, it is still possible that existing assets are deteriorating at the expense of new infrastructure. In the absence of knowing renewal investment to depreciation specifically, the higher the ratio the better the overall condition of the asset base.) Investment to depreciation ratios for Corrections exceeded 200% over the last 25 years. This would indicate, overall, that the quality of Corrections assets has improved over this time period. However, deferred maintenance and renewal liabilities exist across the older facilities.

10.6. Forward Guidance for capital investment

Forward Guidance for Corrections infrastructure investment

	2025–2055	2010–2022 historical average
Average annual spending (billions 2025 NZD)	$0.35-$0.52	$0.3
Percent of GDP	0.06-0.09%	0.1%

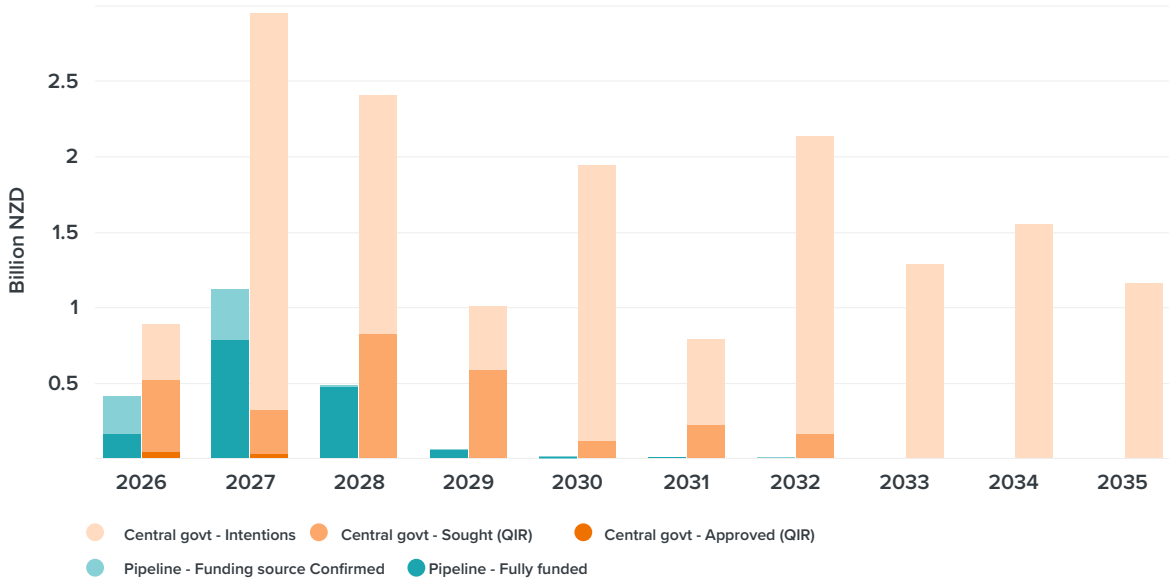
Note: Ranges are based upon each subsector's estimated relative share of the total public safety category over the past 10 to 20 years. These shares are derived from the estimated share of capital stock and investment over the period. Data on asset values and investment collected by the Commission from agency annual reports.

- Our Forward Guidance for Corrections investment projects a need for additional investment relative to recent years, primarily because of the need to renew and maintain the recent expansion of the prison network, as well as covering the cost to maintain and renew older facilities and infrastructure.
- Forecasting corrections' demands is very challenging because demand is largely driven by policy choices by the Government of the day. The Department of Corrections makes forecasts for future prisoner populations, but they have proven relatively inaccurate because of policy uncertainty. However, it should be possible to produce a baseline forecast for maintenance and renewals costs across the lifecycle of existing assets.

10.7. Current investment intentions

- As one of the largest estates within the government's property and asset portfolio, Corrections develops and manages a complex set of facilities that incarcerate and rehabilitate a growing prison population. Corrections uses the Long-Term Network Configuration Plan (LTNCP) to balance the evolution of the prison network over time, including the security mix across facilities and regional capacity requirements. Under the current LTNCP the aim is to retire 2,200 prison beds that are no longer fit for purpose and create 5,100 new (mostly high security) beds across the network, for a net gain of 2,900 beds over the next two decades.
- The Government's current justice policies include increased resourcing for police and longer sentences, especially for three strikes violent and sexual offences. This approach requires increases in operational funding across justice sector operations, but also complementary infrastructure investment to support the expected increase in prisoner volumes.
- The new 596-bed facility at Waikeria is now open and receiving prisoners. The Government intends to build another 810-bed facility on the site, the first phase of the Christchurch Men's Prison redevelopment has also been announced (240 beds) and there is a possible future development at Auckland Men's Prison (Paremoremo).
- For Corrections, our Forward Guidance is long-term indicative guidance, rather than an annual projection. As such, we have excluded it from the chart below.

Figure 55: **Corrections investment intentions**



This chart compares two different measures of future investment. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The orange bars show the measure of investment intentions from central government's reporting of infrastructure-specific initiatives provided to the Treasury's Investment Management System, again distinguishing by funding status. Note that intentions data reflects the date that the funds will be required, not the dates that the related spend takes place. It does not show a comparison with the Commission's Forward Guidance on investment demand.

10.8. Key issues and opportunities

- **Policy and prison population patterns:** Challenges include managing a large remand population relative to the sentenced prison population, which puts pressure on the corrections system, addressing the high proportion of Māori in the justice system, and funding the significant cost of upgrading an ageing infrastructure portfolio. The larger remand population and longer sentences for convicted offenders does create forecasting challenges for prison capacity – not just on an overall basis, but also the forecast capacity requirements across high, medium and low security areas.
- **Investing in the face of uncertainty:** Corrections faces significant uncertainty about the level and composition of the remand and prison populations at a national and regional level. Measuring crime is difficult and measures have changed over time. Subject to this caveat, the New Zealand Crime and Victimisation Survey finds broadly stable rates of crime and victimisation over time. In contrast, the use of incarceration in response to crime has changed significantly over time, reflecting different public and political views about the response. Investing in infrastructure that can more efficiently be expanded or adjusted to different security levels is one way of managing this uncertainty.
- **Different models of delivery:** Exploring alternative models of infrastructure provision, including partnerships with iwi and community housing providers, already offers Corrections innovative solutions for delivering reintegration and rehabilitation services.

11. Defence

11.1. Institutional structure

Service delivery responsibilities

- The New Zealand Defence Force (NZDF) is the singular agency charged with the responsibility of defence in New Zealand. It is part of a trio of organisations providing defence and security for the country, the others being the New Zealand Security Intelligence Service and the Government Communications Security Bureau. Defence has three main functions under the Defence Act, including defence of New Zealand and protection of its interests (for example, patrolling the Exclusive Economic Zone), contributing forces to the United Nations and other collective agreements, and providing humanitarian assistance and disaster relief (both in New Zealand and overseas).
- NZDF includes the three core armed service branches of New Zealand Army, Royal New Zealand Navy (RNZN) and Royal New Zealand Air Force (RNZAF). These entities work separately and jointly to achieve government defence and security outcomes, maintain the effectiveness of their current capabilities and assess the operating environment for future requirements that will drive investment.

Governance and oversight

- The Defence Act 1990 is the governing legislation that established the NZDF and defines the roles and responsibilities of the Minister of Defence, the Chief of Defence Force, and the Secretary of Defence. The Defence Capability Plan (DCP) is a multi-year plan outlining the Government's intentions for investment in defence capabilities, including major infrastructure projects. The 2025 DCP signals a significant increase in spending. Defence Policy and Strategy Statements are high-level documents that set the strategic context for defence activities and capability development.
- Oversight comes through the Minister of Defence, who has statutory authority for the control of the NZDF. The Ministry of Defence is the principal civilian advisory body to the Government on defence policy, capability development, and major procurement. It is a separate entity from the NZDF.

11.2. Paying for investment

- The Government retains the sovereign responsibility for the provision of defence and security for the country, funding these responsibilities through general taxation. They are provisioned through annual Budget appropriations, covering operating expenditure and capital expenditure (maintenance and renewals), as well as individual business cases for the acquisition of new capabilities.
- The Government is beginning to explore alternative financing models to supplement direct taxpayer funding, including the use of PPPs for major redevelopment projects at key bases including Ohakea and Linton. There is increasing interest in working with the local technology sector to co-develop new home-grown military equipment.

11.3. Historical investment drivers

- The establishment of New Zealand's main defence infrastructure occurred in response to the military needs of the Second World War. This included the main military camps of Papakura (1939), Waiouru (1940) and Linton (1942), while military aviation infrastructure was developed at Ohakea (1939) and Whenuapai (1939).
- Defence investment responds to 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. The acquisition of upgraded or new defence capabilities across the three services should trigger complementary investment in physical infrastructure that support these new capabilities (for example, modifications to dockyards, airbases and service facilities).
- Due to the small scale of purchases relative to international partners, New Zealand has often followed our closest allies and those we work with regularly for the acquisition of significant military capital assets. Previously New Zealand has either joined on to the end of production runs for other countries' assets, or purchased to stay in lockstep with our allies' capabilities, specifically Australia, for example with ANZAC frigates and the Poseidon P8As aircraft.
- New Zealand's strategic focus on the South Pacific as a key area of operations has driven investment in infrastructure that can support humanitarian aid, disaster relief, and maritime security missions throughout the region.

11.4. Community perceptions and expectations

This section summarises what we know about the New Zealand public's perceptions and expectations of the defence sector, at a national level.

- New Zealanders' views about whether to spend more or less on defence infrastructure are mixed and change over time. While in the past about one-in-five New Zealanders agreed with spending more on defence,[210] more recent data suggests that about half of New Zealanders may support spending more on defence.[211]

11.5. Current state of network

- The current value of NZDF assets (excluding land) was about $10 billion in 2024. About $5.5 billion of this is specialist military equipment and almost $4 billion was buildings and infrastructure. Investment (addition of fixed assets) has averaged about $542 million (in 2025 dollars) since 2003, although this has increased in recent years.
- The defence estate currently includes approximately 81,000 hectares of land, encompassing over 4,700 buildings, nine main bases, and two major training areas. This includes specialist defence facilities such as a dry dock, runways, fuel storage, medical facilities, and weapon ranges, horizontal infrastructure (such as 400km of roading), and living, working, and training accommodation for 14,000 personnel.
- Overall, there appears to be evidence that a significant portion of defence assets are aged and potentially no longer 'fit for purpose' to support modern military capabilities and personnel. We estimate that investment to depreciation ratios have averaged about 119% since 2003. In eight of those years, total investment (including renewals as well as improvements) was below depreciation, indicating that assets were wearing out faster than they were being improved.
- Key operational hubs such as Devonport Naval Base, Ohakea Air Base, and the Linton and Waiouru Military Camps require extensive regeneration to meet future operational demands, training needs and health and safety standards. Defence housing proposals to the Commission's Infrastructure Priorities Programme noted that a substantial number of assets are in very poor condition.

11.6. Forward Guidance for capital investment

Forward Guidance for Defence infrastructure investment

	2025–2055	2003–2022 historical average
Average annual spending (billions 2025 NZD)	$0.8-$1.14	$0.59
Percent of GDP	0.1%-0.2%	0.17%

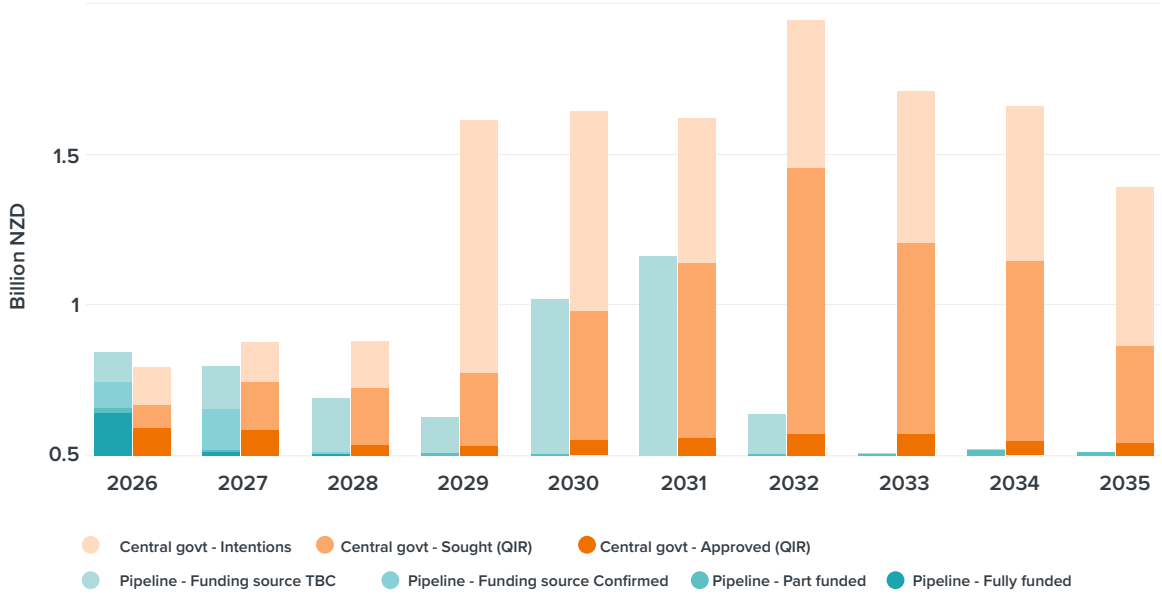
Note: Ranges are based upon each subsector's estimated relative share of the total public safety category over the past 10 to 20 years. These shares are derived from the estimated share of capital stock and investment over the period. Data on asset values and investment collected by the Commission from agency annual reports.

- The Commission's Forward Guidance for defence investment largely projects a state of investment required to maintain and renew existing defence assets over a 30-year period. It does not account for potential catch-up investment for underinvestment in previous years. As such, it should be viewed as a long-run sustainable target.
- The Commission's Forward Guidance covers investment in the estate, as well as investment in other defence capital assets such as military equipment. This is to assist central government and the Treasury with long-run capital planning.
- Stats NZ classifies defence within the wider public administration and safety asset class that also includes justice, public safety and corrections. The Commission's Forward Guidance above represents our estimate for defence's share of that asset class. The Commission has collected data on the value of capital investment for public administration and safety and noted that it has rarely exceeded 1% of GDP over the last 100 years, even during the First World War and the Second World War.

11.7. Current investment intentions

- NZDF's Defence Capability Plan (DCP) is the principal strategic document outlining the Government's long-term vision and planned expenditure for military capabilities, which directly informs the required supporting infrastructure. The Government-approved plan amounts to $12 billion over 4 years which is a major uplift in investment as a share of GDP. The programme covers physical infrastructure and estate regeneration and military capital assets, including ships, aircraft (fixed and rotary wing) and vehicles.
- The DCP includes the Defence Estate Strategy and its associated regeneration programme provide the overarching framework for the entire defence property portfolio. It prioritises investment to align infrastructure with the capabilities set out in the DCP and to regenerate existing assets that are critical to defence outcomes, but are currently unable to support modern needs, such as housing, barracks and a range of horizontal infrastructure assets. Detailed master plans for individual bases and camps, developed in partnership with military service branches, and with private sector consultant expertise, provide a more granular, site-specific roadmap for future development and investment priorities over the next 30 years.
- For defence, our Forward Guidance is largely a long-term indicative target, rather than an annual projection. As such, we have excluded it from the chart below.
- The intentions data is for infrastructure assets only and does not include any special equipment.

Figure 56: **Defence investment intentions**



This chart compares two different measures of future investment intentions. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The orange bars show the measure of investment intentions from central government's reporting of infrastructure-specific initiatives provided 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 align data definitions.

11.8. Key issues and opportunities

- **Asset management:** A primary challenge is the cost of the required infrastructure regeneration after an extended period of low investment in renewals for vital existing infrastructure. Other issues include managing the complexity of major construction projects, addressing skill shortages in the construction sector, and ensuring investments are resilient to climate change impacts.
- **Service level enhancements:** The defence estate regeneration programme offers a chance to improve energy efficiency and reduce long-term operating costs when fully implemented. There is an opportunity to deepen strategic partnerships with the private sector, fostering innovation in construction and financing. Furthermore, targeted infrastructure upgrades can significantly enhance interoperability and training opportunities with New Zealand's key international allies.
- **Growing geopolitical uncertainty:** While forecasting need for defence infrastructure is difficult, geopolitical trends suggest a less benign future international environment, greater competition between great powers and more uncertainty about the future of the rules-based international order. Current conflicts are impressing the need to account for technological change when procuring new capabilities and for modernising existing platforms. Greater investment in defence capability will likely be needed, but it is important that investment in new capabilities doesn't come at the expense of addressing maintenance and renewal needs, which support the effectiveness of frontline capabilities.

12. Ports

12.1. Institutional structure

Service delivery responsibilities

- There are thirteen major commercial ports in New Zealand: nine are in the North Island, all except Port Taranaki are on the east coast, and four are distributed mostly on the east coast of the South Island. Most ports are capable of handling containerised freight as well as commodities, like logs, and break-bulk cargo, and have specialised facilities to transit commodities with specific handling and storage requirements such as cement and fuel.
- In addition to the main commercial ports, New Zealand has numerous smaller commercial wharves that primarily serve specific industries such as fishing, coastal shipping, inter-island ferries, and local cargo or passenger needs. These wharves are typically managed by local councils, port companies, or private operators and are not included in the main international port statistics. These wharves also play an important role for shipping services to remote locations that include Stewart Island, the Chatham Islands and Great Barrier Island.
- Inland ports, also referred to as intermodal freight hubs, are an expanding component in the logistics network. They are a direct response to landside constraints faced by major seaports, such as Auckland and Tauranga. These strategically located facilities act as inland extensions of seaports, handling transfer of cargo between road and rail, and providing customs and biosecurity services.
- Most port companies are incorporated under the Port Companies Act 1988. They own and manage the physical port infrastructure (wharves, cranes) and provide services to shipping lines and cargo owners. There are a range of port ownership structures within the New Zealand port sector. Some ports are majority-owned by local/regional councils, while others have part private ownership and a listing on the New Zealand Stock Exchange (NZX), such as Port of Tauranga. There is also some cross-ownership between ports (for example, Port of Tauranga owns part of Northport and PrimePort Timaru).

Governance and oversight

- The Port Companies Act 1988 corporatised the former harbour boards and has shaped the current structure of the sector. The Maritime Transport Act 1994 (safety, security and environmental protection), Local Government Act 2002 (commercial relationship between local councils and their port entities), Resource Management Act 1991 (planning and consenting process and environmental protection for coastal areas) provide the suite of legislative governance.
- The Minister of Transport is responsible for overall transport policy, including the maritime and port sectors, appoints the board of Maritime NZ and can issue high-level policy direction. The Ministry of Transport advises the Minister on the legislative framework, funding, and governance of transport Crown entities like Maritime NZ. The Commerce Commission enforces the Commerce Act by monitoring for anti-competitive behaviour but does not regulate the port sector under Section 4 of the Act like it does for specified airports.
- Maritime NZ, in partnership with port operators and regional councils, develops and maintains the New Zealand Port and Harbour Marine Safety Code. This voluntary code is an institutional arrangement that translates the high-level safety duties of the Maritime Transport Act into specific, good-practice operational standards for managing navigation and safety within ports.
- Regional councils translate the Resource Management Act into regional plans that specify environmental standards and consent requirements for costal port activities. Regional councils are also delegated the Harbourmaster function, which retains the authority, legal responsibility and enforcement powers for maritime safety in the harbour jurisdiction.

12.2. Paying for investment

- Capital investment by maritime ports is primarily funded by the port companies themselves through retained earnings and debt. For significant investments, some council-owned ports have undertaken partial privatisation by listing on the NZX to raise capital. These costs are expected to be recouped through charges on port users.
- Port companies also often develop inland ports, sometimes in partnership with other entities. For example, the Ruakura inland port just outside of Hamilton is a joint venture between Port of Tauranga and Tainui, with KiwiRail as the main transport provider.

- Central government occasionally provides targeted funding for specific projects, often aimed at enhancing regional development, resilience, or connectivity.

12.3. Historical investment drivers

- During its early development, New Zealand relied heavily on ports and coastal shipping to service the isolated communities dispersed around the country. This has given the country its existing pattern of ports and commercial wharves.
- Dependence on regional ports has reduced over time through internal competition as land transport alternatives gained traction. Technological change in shipping through containerisation and logistics management changed the requirements from the 1970s onwards around wharf design and configuration, while increases in ship size reduced ship calls and consolidated port activity.
- Integration and coordination with land transport networks has become increasingly important over time, which has seen increases in shared use of road and rail infrastructure. This is linked to the increasing use of inland port facilities and just in time cargo arrival or clearance.

12.4. Community perceptions and expectations

- The Commission does not have any specific information about whether ports are meeting community expectations or needs.
- The Ministry of Transport publishes measures of port container productivity that give insights into how well ports are meeting consumer expectations.[212] Productivity levels peaked around 2017 and fell sharply in 2021 due to COVID-19 related disruptions. Productivity increased somewhat in 2024 but it remains significantly below 2017 levels. This productivity trend is broadly consistent with international trends, with global measures of container port performance falling significantly in 2021 and as of 2024 remain at low levels. New Zealand and Australia have consistently lower port productivity levels than in many other regions.[213]
- Parliament's Transport and Infrastructure Select Committee is conducting an inquiry into ports and the maritime sector. Submissions to the Committee, including from international shipping lines, note an expectation that the sector will need to improve productivity and coordination to adapt to the amalgamation and rationalisation of international shipping services.
- Port use of urban waterfront space often leads to trade-offs between port operations and use of waterfront for public and commercial purposes. This is most clearly seen in Auckland with proposals to reduce the footprint of the port, or move it entirely, to allow for other uses of Auckland waterfront space.

12.5. Current state of network

- The total fixed capital stock (excluding land) of New Zealand's seven busiest ports was over $3.3 billion total in 2024.[214]
- Capital investment in the seven busiest ports averaged a total of $235 million per year between 2020 and 2024.
- We don't have full information on building condition, but we can observe the extent to which total investment (including renewals as well as improvements) is keeping up with depreciation. (Note: If investment falls below depreciation, this implies assets are being 'sweated out'. However, even if investment is above depreciation, if that investment is directed to new infrastructure, it is still possible that existing assets are deteriorating at the expense of new infrastructure. In the absence of knowing renewal investment to depreciation specifically, the higher the ratio the better the overall condition of the asset base.) Investment to depreciation ratios for the seven busiest ports averaged 207% between 2020 and 2024.

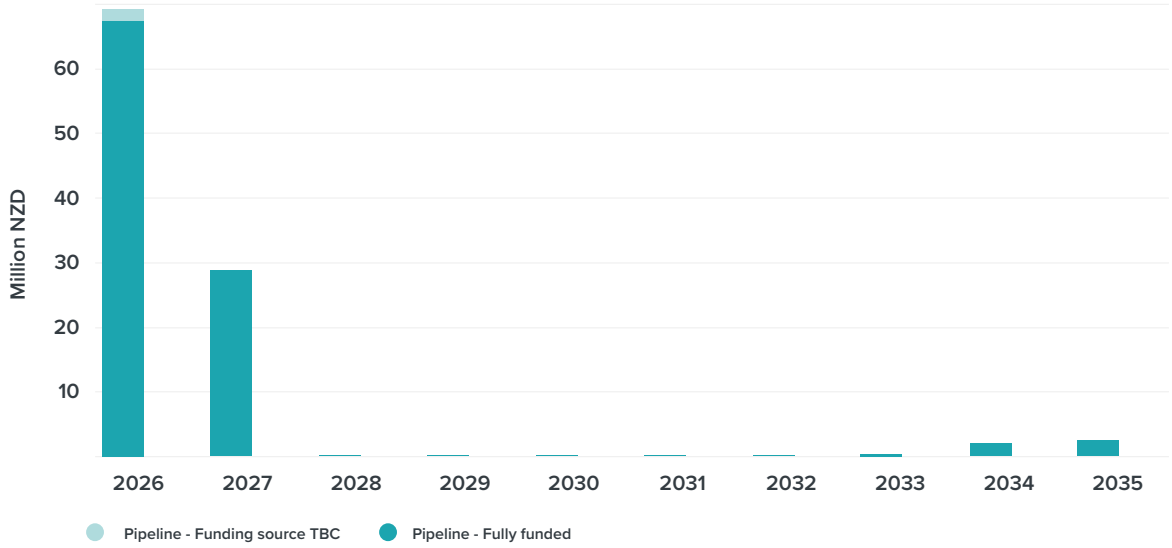
12.6. Forward Guidance for capital investment

- The Commission does not produce Forward Guidance forecasts for investment in ports infrastructure.
- We expect that at a high level, future demand for ports will be a function of economic dynamics in New Zealand, and also abroad. These dynamics reflect the changing structure and composition of the New Zealand economy, including which sectors continue to be sources of growth and generators of merchandise trade. Changes to the container trade, including the use of larger ships and potentially fewer port calls, along with changes to shipping routes following geopolitical events, will also shape port infrastructure investment.

12.7. Current investment intentions

- The Pipeline currently collects only a limited amount of data from port companies or council-owned operations and appears to show primarily fully funded projects.

Figure 57: **Ports investment intentions**



The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The Commission has not produced Forward Guidance for this sector.

12.8. Key issues and opportunities

- **National coordination:** A key challenge identified by the sector has been fragmented decision-making and competition between regionally owned ports. NZTA's Action Plan for Freight is an opportunity to improve coordination in the sector.
- **Shipping services:** The ongoing amalgamation and rationalisation of international shipping services presents strategic challenges for the sector, including the impacts of managing fewer ship visits by agglomerating cargoes and the adoption of hub and spoke models for freight distribution, where a central location ('hub') consolidates and routes cargo to and from peripheral destinations. The trend to larger ships also places pressure on ports to manage calls from these ships, including infrastructure demands (deeper channels, larger berths, crane capability and landside capacity), and to manage more noticeable cargo peaks.
- **Competing land use and accessibility:** Population growth in our city centres is leading to more demand for waterfront space, which can compete for space against port infrastructure. The Port of Auckland is an example of where both rail and road access are constraints that possibly offset any wharf expansion. Decommissioning a port within an urban centre and establishing or expanding a new one would be a significant investment, and would need large, concrete benefits to justify the investment. However, where this has worked best overseas, such as the closure of Manhattan's wharf in favour of Port Newark, or the development of Port Botany in Sydney, new ports have been close by to the facilities they have replaced.

13. Airports

13.1. Institutional structure

Service delivery responsibilities

- Scheduled air services operate out of 26 airports across the country. Six of these airports (Auckland, Christchurch, Queenstown, Wellington, Dunedin and Hamilton) currently host international air services.
- The remaining 20 airports form a regional network that provides domestic connectivity, including access to the main international hubs, economic (for example, tourism, freight) and social connectivity, as well as access to emergency and medical services.
- Beneath the main airports there are a range of licensed aerodromes (around 102, including the main airports) and airstrips that are either council or privately owned. These allow for recreational flying, flight training, agricultural aviation, air ambulance services and provide access to remote locations.

Governance and oversight

- The sector is covered by the Civil Aviation Act 2023, which provides the overarching framework for aviation security, safety, operations and sector regulation. The Airport Authorities Act 1966 grants powers to airport operators and the Commerce Act 1986 governs economic regulation, with major airports (Auckland, Christchurch and Wellington) subject to information disclosure regulations under Part 4.
- The ownership structures of the main international and regional airports vary. Auckland (AIAL) is an NZX listed entity, Wellington is majority owned by a listed infrastructure company (Infratil), while Christchurch is majority owned by Christchurch City Council, with the Crown holding a minority stake. Most remaining regional airports are structured either through direct council ownership and management or are operated through council-controlled organisations (CCOs), while a small number are Crown-Council joint ventures (for example, Taupō) or are privately owned.
- The Ministry of Transport is the primary central government agency responsible for policy and legislation for the aviation sector. It oversees the Crown's interest in joint-venture airports, as well as providing monitoring and oversight of Crown agencies operating in the sector, including the Civil Aviation Authority (CAA) and Airways New Zealand. MBIE is involved in competition policy and the economic regulation of airports.
- Sector oversight is achieved through the Civil Aviation Authority and its subsidiary Aviation Security (AvSec), which is responsible for safety and security regulation, setting the rules governing civil aviation and certification. Airways New Zealand operates as a state-owned enterprise and is the monopoly provider of air navigation and air traffic control systems and services. The Commerce Commission oversees the information disclosure regime for the three largest airports in the country (Auckland, Christchurch and Wellington).

13.2. Paying for investment

- Part 7 of the Civil Aviation Act 2023 requires that airports be operated on a commercial basis, with exceptions made for airports operated by local authorities or those owned and operated as CCOs. This means the key funding approach is based around a user-pays principle for infrastructure access and operations. Airport landing charges are not directly regulated, but large airports are required to consult with customers, like airlines, on major capital plans before setting charges.
- Major international airports are largely self-funding through aeronautical and non-aeronautical revenue, debt, and equity. The ability to generate non-aeronautical revenue, such as property development and retail operations, provides an additional funding source for airport development.
- Regional airports often rely on a mix of commercial (aeronautical and non-aeronautical) revenue, local government funding, and central government grants (e.g. Provincial Growth Fund, Regional Infrastructure Fund). Some smaller airports struggle with financial sustainability due to low usage and the requirement to maintain their assets to high standards.
- Occasional central government funding for regional airports helps to maintain essential infrastructure that enables connectivity for smaller communities.

13.3. Historical investment drivers

- Following the Second World War, a strong national development effort through the establishment of the National Airways Corporation to develop main trunk and feeder routes, drove the expansion of

airport infrastructure and airline services to create the loosely affiliated network of airports that are present to this day.

- A more recent phenomenon that has driven both international and regional airport investment has been the growth of New Zealand as an international destination for tourists. This has necessitated ongoing investment in terminal capacities, airside infrastructure (runways and aprons) and facilities for customs processing and biosecurity. The growth in international flights has also required further investment in airport and aviation operating systems and equipment, such as air traffic control, radar, runway lighting and instrument landing systems.
- Changes in airline fleet composition have also had a material impact on airport investment. The introduction of larger aircraft, through the transition from propeller to jet engine, has driven investment in runway lengthening and widening and the hardening of aprons, as well as the requirement for upgraded terminal gates to accommodate the new aircraft.
- The move to airport corporatisation and the focus on commercial models for airport funding has led to airport investment into facilities that generate both aeronautical and non-aeronautical revenues, particularly through commercial development of landside properties like hotels.

13.4. Community perceptions and expectations

- Overall, it appears airport infrastructure is meeting New Zealanders' needs.
- One study showed that 81% of New Zealanders rate the quality of New Zealand's airports as very or fairly good, higher than a global average of 72%, and few (15%) identified airports as an area of priority for further investment.[215]

13.5. Current state of network

- New Zealand's three largest international airports (Auckland, Wellington, and Christchurch) had a fixed-asset stock (excluding land) of nearly $6.4 billion in 2024.
- The value of the capital stock has increased rapidly over the past 10 years, with investment averaging nearly $460 million between 2017 and 2024 across the three airports. Investment in 2024 alone was over $1 billion, $992 million of this being in Auckland Airport.
- We don't have full information on building conditions, but we can observe the extent to which total investment (including renewals as well as improvements) is keeping up with depreciation. (Note: If investment falls below depreciation, this implies assets are being 'sweated out'. However, even if investment is above depreciation, if that investment is directed to new infrastructure, it is still possible that existing assets are deteriorating at the expense of new infrastructure. In the absence of knowing renewal investment to depreciation specifically, the higher the ratio the better the overall condition of the asset base.) Investment to depreciation ratios for New Zealand's three largest airports averaged nearly 250% between 2016 and 2024.

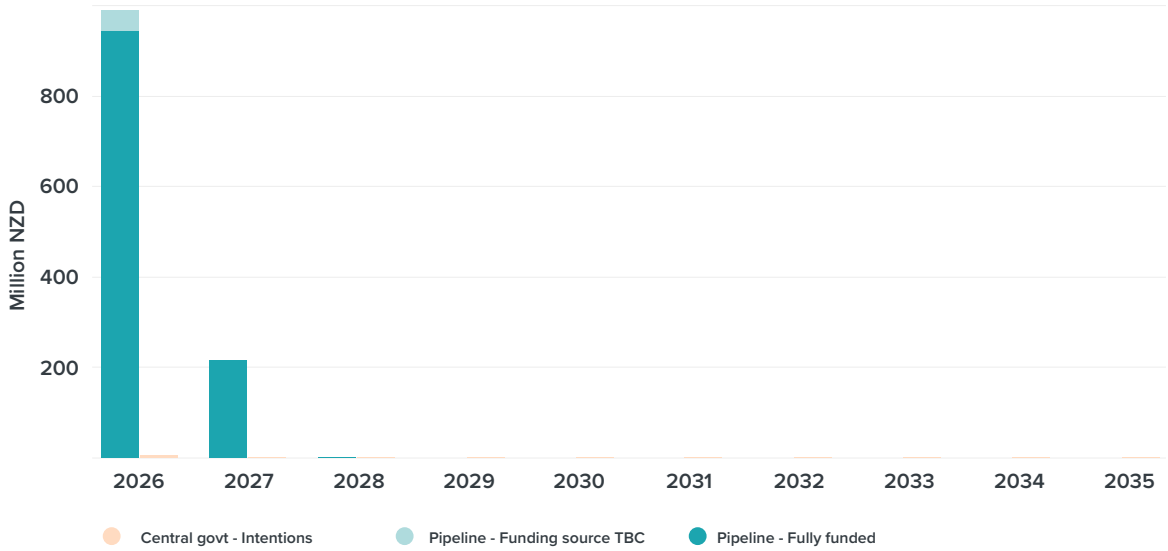
13.6. Forward Guidance for capital investment

- The Commission does not produce Forward Guidance forecasts for airport infrastructure investment.
- Air travel, and therefore demand for infrastructure, has been found to be more sensitive to income than other infrastructure, with international air travel being more driven by income growth than domestic travel. This suggests that slower income growth driven by demographic dynamics and productivity into the future may be a headwind for air travel. Policy targets for international visitor arrivals are for 5 million arrivals by 2030 under the Government's Tourism Growth Roadmap, which, if met, will place additional demands on the airport system, along with the connectivity to the land transport system.
- Decarbonising our economy could be a driver of future investment, as aviation transitions to low-carbon travel. This includes planning for the infrastructure required to support new, lower-emission aircraft technologies (for example, electric, hydrogen) and reducing ground-based emissions. Any such moves would place additional requirements on other infrastructure sectors, such as electricity generation and distribution.
- Improving system resilience could also be an important future investment area for airports which can be utilised as support lifelines during emergencies.

13.7. Current investment intentions

- The Pipeline currently collects only a limited amount of data from airport companies and council-owned operations which are primarily fully funded.
- Central government investment intentions are limited to investments proposed for joint-venture airports.

Figure 58: **Airports investment intentions**



This chart compares two different measures of future investment intentions. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. There is also a small amount of investment intentions based on the Commission's modelling of programme-level data from central government's reporting to the Treasury's Investment Management System. The Commission has not produced Forward Guidance for this sector.

13.8. Key issues and opportunities

- **Funding and affordability:** Large renewal investments in core infrastructure could strain affordability, particularly for regional airports with lower passenger numbers. The cost and scale of capital programmes highlight the difficulties with applying the user-pays model to recover costs from a relatively small base of users, in this case, airlines, pass costs on to consumers.
- **Governance and ownership models:** Central and local government support for airports is provided in part through direct ownership. This can lead to issues when airports are smaller, and either are not very profitable or do not make enough revenue to fully cover their costs. Central and local government face significant capital investment demands in other areas, raising the question of whether investments in airports should be recycled to fund higher priority investments.
- **Decarbonisation:** The transition towards decarbonisation and low-emission aviation presents a major challenge, that will likely require a substantial commitment to long-term investment in new infrastructure and the development and management of new energy sources. This is currently playing out in a highly uncertain technological environment.
- **Technological change:** New technologies like artificial intelligence and data analytics for ground operations and terminal configuration offers an opportunity to improve the efficiency of existing assets, optimise resource allocation, and provide a more seamless and predictable journey for passengers. Currently Auckland, Christchurch and Queenstown are experimenting with new technologies, while the CAA is looking to streamline security screening.[216] The challenge will be rolling out technical changes to smaller undercapitalised regional airports.

14. Flood protection

14.1. Institutional structure

Service delivery responsibilities

- Flood management in New Zealand is a devolved responsibility, with regional and territorial authorities taking the lead in mitigating natural hazard events under a range of Acts including the Local Government Act 2002, the Soil Conservation and Rivers Control Act 1941, the Resource Management Act 1991 and the Civil Defence Emergency Management Act 2002. This regional approach allows for tailored solutions to local flood risks. However, there is also a push for a more coordinated national approach to ensure consistency and address the increasing challenges posed by climate change.
- Regional councils are the lead agencies responsible for delivery, including the planning, funding, construction, and maintenance of major flood control schemes within their catchments, as well as developing catchment management plans and flood hazard maps.
- Territorial authorities are responsible for managing local stormwater networks and land-use planning, which must integrate with the wider regional flood management framework.
- New Zealand employs a variety of structural measures to mitigate the risk of flooding, primarily relying on a network of stopbanks, flood walls and groynes. While stopbanks are the primary defence, other methods are also employed. River diversions, like the Moutoa Sluice Gates on the Manawatū River, redirect excess water to protect downstream communities. Although New Zealand's large dams were primarily built for power generation and irrigation, they also play a role in buffering major floods. Nature-based solutions are also increasingly being used.
- There are various flood protection schemes distributed across the country and managed by regional councils. The Te Uru Kahika National Flood Risk Resilience business case states there are 367 such flood protection schemes.
- Private landowners are responsible for managing drainage on their own properties, managing overland flood paths and, in some areas, smaller, private flood protection works.

Governance and oversight

- Flood protection is managed through a devolved, multi-level structure where central government provides the legislative framework. As part of the current changes being made to the RMA, the current Government is considering introducing the National Direction on Natural Hazards (ND-NH), which would provide overarching national planning direction for identifying and responding to natural hazard events.
- Governance is exercised at the regional level. Regional councils interpret national laws to create specific regional policies and floodplain management plans. Historically, some form of delegation to regional or local governments has been the norm, as with the Soil Conservation and Rivers Control Act 1941 and the Water and Soil Conservation Act 1967, which authorised catchment boards to undertake river control works. Other relevant legislation includes the Civil Defence Emergency Management Act 2002 which provides the framework for emergency response.
- Central government agencies also have an active role in flood protection. For example, the Ministry for the Environment (MfE) is developing the ND-NH. The National Emergency Management Agency (NEMA) coordinates central government's response to large-scale emergencies, including major flood events.

14.2. Paying for investment

- Historically, flood management has been funded through a combination of central and local government investment under the Soil Conservation and Rivers Control Act 1941, which allowed for central government loans and subsidies through the then Minister of Works. The Ministry of Works oversaw investment by catchment boards.
- The current model emphasises local responsibility, with regional councils funding flood protection works through targeted rates paid by the communities that benefit from them. This beneficiary-pays approach can create affordability challenges, particularly where small communities face high costs to protect against major flood risks.
- In recent years, central government has committed some funding to flood resilience, including $217 million in 2022 from the COVID-19 Response and Recovery Fund, $22.9 million for Resilient Westport following flood events in 2021 and 2022, $100 million in 2023 for flood resilience projects in areas impacted by Cyclone Gabrielle, and $200 million in 2024 ring-fenced in the Regional Investment Fund.

14.3. Historical investment drivers

- Major investment has historically been reactive, often driven by the aftermath of significant and destructive flood events that highlighted vulnerabilities.
- Much of the proactive investment in the mid-20th century was driven by the need to protect productive agricultural land like the Hauraki and Heretaunga Plains. Key legislation, such as the Soil Conservation and Rivers Control Act 1941, was a direct response to widespread flooding and erosion, establishing the institutional structures (catchment boards) that initiated most of New Zealand's major schemes. These catchment boards were funded through local authority rates.

14.4. Community perceptions and expectations

This section summarises what we know about the New Zealand public's perceptions and expectations of the flood protection sector, at a national level.

- New Zealand's infrastructure to reduce flooding was rated as poor/very poor by two-thirds (64%) of respondents in a 2024 survey.[217]
- New Zealand's flood protection infrastructure was rated as an investment priority for just under half of New Zealanders, according to one survey.[218]
- In a nationally representative survey undertaken by the Commission as part of consultation on the draft National Infrastructure Plan, 46% of New Zealanders reported that flood protection services meet or exceed their needs, while 54% reported they somewhat or consistently fail to meet their needs.

14.5. Current state of network

- New Zealand relies on an extensive network of flood protection assets, including at least 5,284km of stopbanks, many of which were designed and built several decades ago to varying standards.
- Some flood protection infrastructure may not be adequate to provide the intended level of protection against the increasing frequency and intensity of rainfall events being driven by climate change.
- There are recognised gaps in the national understanding of the condition and performance of many flood defence assets, making it difficult to accurately assess risk and prioritise investment.

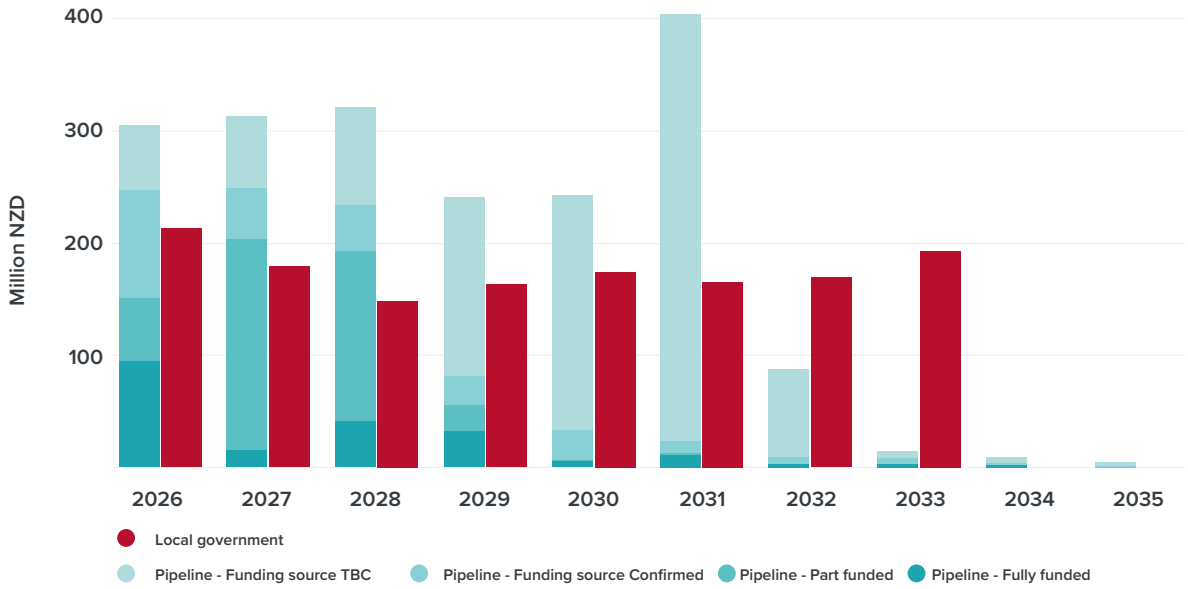
14.6. Forward Guidance for capital investment

- The Commission has not produced Forward Guidance for flood protection infrastructure.

14.7. Current investment intentions

- Regional councils are planning significant capital works programmes focused on upgrading key flood defence schemes to provide greater resilience against larger flood events, such as raising stopbanks in Hawke's Bay and the Waikato.
- Investment is being targeted at schemes that protect major urban areas, economically vital agricultural regions, and critical national infrastructure.
- Alongside strengthening physical infrastructure, councils are also investing in non-structural measures and nature-based solutions, including improved flood warning systems, catchment-wide management plans, and stricter land-use controls.
- A recent report by Te Uru Kahika estimated that strengthening flood resilience would cost $5 billion over the next 10 years. The most significant driver for future investment is climate change adaptation.

Figure 59: **Flood protection investment intentions**



This chart compares two different measures of future investment intentions. The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The red shows the measure of investment intentions based on the Commission's modelling of portfolio-level data from local government long-term plans. The Commission has not produced Forward Guidance for this sector.

14.8. Key issues and opportunities

- **Funding and incentives:** Future policy requirements will likely require assessments of the impacts of flood hazards to balance insurance and incentive effects. This includes assessing the costs and benefits of a wide range of different options, including physical protection, avoiding flood-prone areas using land-use planning changes, managed retreat/relocation from inhabited flood-prone areas, and accommodating the effects of flood events by using pumps and stormwater systems. These responses should be proportionate to the size of the flood hazard.
- **Asset management and standards:** The reactive and fragmented nature of past investment created an inventory of legacy assets with varying standards and unknown performance capabilities, posing a significant challenge for future risk management. The absence of consistent national engineering design standards has further compounded these issues, highlighting the need for greater standardisation to improve resilience and reliability.
- **Non-built solutions:** There is a significant opportunity to better integrate structural countermeasures, like stopbanks, with non-structural solutions, such as floodplain restoration, nature-based solutions, and managed retreat, to create a more sustainable and resilient long-term approach.
- **Coordination:** The benefits of flood protection can be diffuse across a whole community, business and infrastructure providers (both government and commercial). Flood protection can also have economies of scale, where it is more efficient to protect a whole area from flooding than each individual beneficiary making investments (for example, elevating individual properties or pieces of infrastructure). Different approaches to funding and financing flood protection infrastructure could help to overcome these coordination challenges.

15. Waste and resource recovery

15.1. Institutional structure

Service delivery responsibilities

- Solid waste infrastructure and services are provided by both territorial local authorities and private firms. A three-tiered system exists where central government (Ministry for the Environment) sets national policy, and local and regional councils are responsible for planning, consenting, procurement and service provision – often in partnership with the private sector.
- Collection, recycling and disposal services are managed through council infrastructure and contracts or provided as a wholly private service. There are many different service arrangements and asset ownership models across New Zealand's districts and regions for waste management and recycling services.
- Territorial authorities (councils) are also mandated by the Waste Minimisation Act 2008 to develop Waste Management and Minimisation Plans (WMMPs), which guide local service provision and infrastructure decisions.

Governance and oversight

- Multiple pieces of environmental legislation set the rules around the activities of this sector: the Resource Management Act 1991 (RMA), the Waste Minimisation Act 2008 (WMA), the Litter Act 1979, the Local Government Act 2002 (LGA) and the Climate Change Response Act 2002 (CCRA), which includes the Emissions Trading Scheme (ETS). These Acts are all administered by the Ministry for the Environment.
- National direction under the RMA includes a national environmental standard on air quality, requiring the flaring of methane from landfills, and a national environmental standard for soil contamination. The Government intends to replace the RMA with a Planning Act and a Natural Environment Act in 2026.
- The WMA provides for the waste disposal levy and waste minimisation fund, and promotes national strategy, with enabling powers for product stewardship schemes (for example, Tyrewise scheme) and product controls (used to ban single use plastic shopping bags and phase out hard-to-recycle plastics). While the WMA has played a key role in improving waste minimisation outcomes, the Government is currently working on amending the WMA to create a modernised and fit-for-purpose Act. This also includes repeal and replacement of the Litter Act 1979 into one piece of waste legislation.
- In 2024 national kerbside standardisation was introduced, requiring all territorial authorities to standardise the materials that they accept in council-managed kerbside recycling and organics.

15.2. Paying for investment

- Solid waste services are usually user pays – through a combination of council rates, one-off and subscription fees, 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. The Waste Minimisation Fund (WMF), sourced from waste levy revenue, provides contestable government funding to support projects by councils, businesses, and community groups that aim to reduce waste. A hypothecated portion of waste levy revenue is also provided to territorial authorities to support their waste minimisation services and infrastructure.
- Investment in waste and recycling infrastructure is funded through a combination of public and private sources. This includes council rates, user charges for waste services, revenue from the waste disposal levy and private sector investment. Key asset classes typically include landfills, collection vehicles, processing facilities and bin infrastructure. Investment decisions are driven by many factors, including commercial returns and markets, council contracts, WMF investment signals, and policy directions from both central and local government.

15.3. Historical investment drivers

- Early investment was primarily driven by public health requirements to dispose of refuse, leading to the establishment of local landfills with minimal environmental regulation.
- The introduction of the RMA significantly shifted investment towards engineered landfills with better environmental controls to manage effects, such as from leachate and landfill gas on land, water, and air quality.

- More recently, drivers have shifted towards resource recovery and sustainability, spurred by the Waste Minimisation Act 2008 and global shifts, such as China no longer accepting unprocessed recyclable materials that it used to accept.
- Policy settings can also impact investment directions and priorities, including how much waste needs to go to landfill, such as excavated soils during the construction and demolition process,[219] and the treatment of landfill byproducts, such as biogenic methane. The latter is captured within the ETS, providing incentives to better manage and mitigate, such as harnessing the gas for power generation.

15.4. Community perceptions and expectations

This section summarises what we know about the New Zealand public's perceptions and expectations of the waste and resource recovery sector, at a national level.

- Reducing the production of, and appropriately dealing with, waste is an important priority for New Zealanders.[220]
- Most New Zealanders agree we should produce less waste (85%) and are concerned about the impacts of waste on the environment (83%).[221]
- There is strong and growing public expectation for improved environmental outcomes, with high demand for accessible and effective recycling services and a desire to reduce waste sent to landfill.[222]
- In a nationally representative survey undertaken by the Commission as part of consultation on the draft National Infrastructure Plan, 72% of New Zealanders reported that rubbish and waste services are meeting or exceeding their needs, while 28% reported they are somewhat or consistently failing to meet their needs.

15.5. Current state of network

- New Zealand has 701 registered waste facilities which cover landfills, disposal facilities for organic material, and transfer stations. This includes 188 landfills, of which 41 are Class 1 municipal landfills.
- New Zealand produces the most municipal waste per capita in the OECD. However, definitions of municipal waste vary and more recent analysis with updated definitions has shown that New Zealand's waste per capita may not be as high as previously reported.[223]
- Based on information from Stats NZ, we can infer that council-owned solid waste assets have a value of around $1 billion.[224] However, many solid waste facilities are privately-owned, so the value of total waste assets is higher.

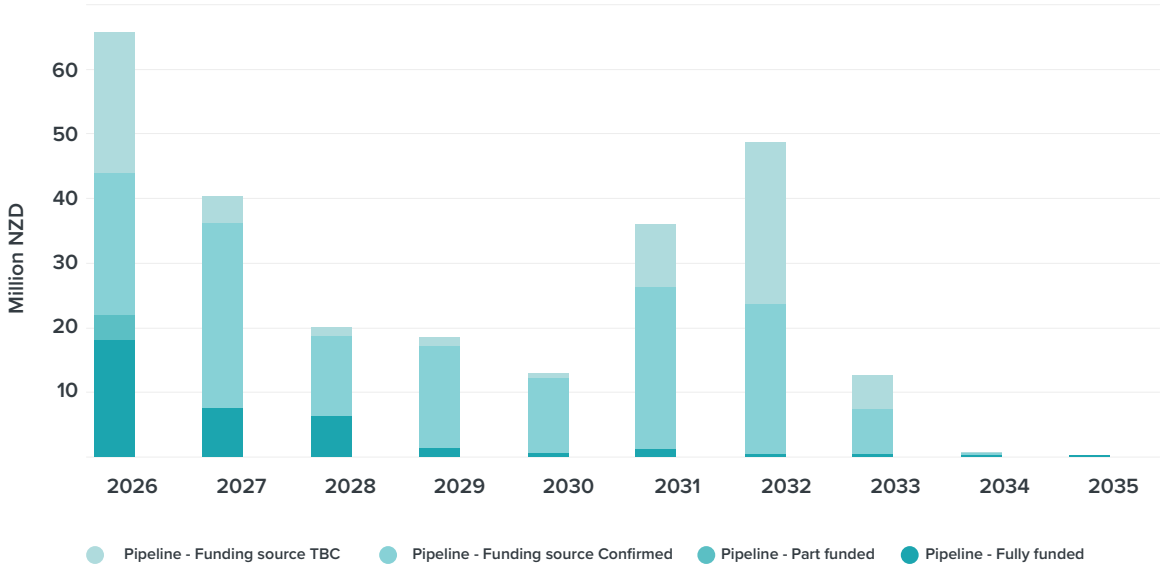
15.6. Forward Guidance for capital investment

- The Commission has not produced Forward Guidance for waste and resource recovery infrastructure.
- Future investment needs are likely to be driven by population growth, income growth and higher community expectations around environment standards.
- Maintenance of landfills will become more important and difficult as landfills become increasingly exposed to climate change and natural hazard events. For legacy waste facilities near coastal or river areas, erosion and runoff will need to be addressed with greater maintenance and investment.
- Future investment in landfills will also be linked to investment in other infrastructure sectors. For instance, landfill requirements will be affected by how wastewater capacity constraints are addressed.

15.7. Current investment intentions

- The data collected for current investment intentions is limited to local government entities in the National Infrstructure Pipeline. Specific reporting on capital spending for waste or resource recovery is not a required activity for inclusion in local government long-term plans.
- Data from the Pipeline indicates that waste management accounts for 2–3% of the value of all projects reported by local government. Around 15% of future projects are currently fully funded.

Figure 60: **Waste and resource recovery investment intentions**



The turquoise bars show project-level investment intentions from the National Infrastructure Pipeline, distinguishing based on funding status. The Commission has not produced Forward Guidance on investment demand.

15.8. Key issues and opportunities

- **Coordination:** Standardising kerbside collections nationwide has the potential to create economies of scale, improve the quality of recycled materials, boost public participation, and stimulate investment in domestic processing. This will be particularly important for urban areas and towns. Rural areas could also benefit from standardisation of accepted waste and recyclable materials, but may require financial support from local and central government to implement these programmes.
- **Planning and engagement:** Engagement with the commercial infrastructure waste sector should be undertaken to align infrastructure priorities and investment. There is also the opportunity to ensure that urban developments are planned to reduce waste and enable waste management servicing and capacity. Defining solid waste as infrastructure in resource management law may have benefit, particularly facilities such as district or regional resource recovery or waste disposal facilities.
- **Optimising investment:** Developing reliable and comprehensive national waste data is a major opportunity to inform evidence-based policymaking, infrastructure planning, and performance measurement. In addition, well-designed behaviour-change initiatives and information campaigns can help ensure that existing infrastructure is used efficiently, and new investment is being used as intended.
- **Technology:** Developing a view on the potential costs and benefits of opportunities for improved resource recovery, and more onshore recycling of materials like plastics, glass, tyres, and other materials, presents a possibility for creating economic value, generating jobs, and reducing New Zealand's environmental footprint.
- **Pricing and revenue:** For waste facilities funded by councils, rates affordability concerns will put funding pressure on investment and programmes. Better pricing of waste services could reduce possible funding gaps and help support greater minimisation of waste services and ensure greater equity across the system. Industry-led product stewardship schemes are also becoming an alternative form of user pays which could assist in funding future investment.

16. Irrigation

16.1. Institutional structure

Service delivery responsibilities

- Irrigation in New Zealand is concentrated in specific regions, particularly the east coast of both Islands. Irrigated operations are primarily associated with suitable land classes (soil type, topography, proximity to water).
- Irrigation infrastructure and services are provided by a variety of private and user-owned schemes, sometimes with a degree of local government involvement.
- Service delivery is highly decentralised. Farmers and growers are shareholders in these entities, which are responsible for the operation, maintenance, and delivery of water to the farm gate. In the South Island irrigation more typically operate as schemes, but across NZ there are also numerous independent irrigators in a single catchment. Sometimes individual irrigators are organised as collectives or user groups with global consents although not directly connected by pipe or canal infrastructure.
- Regional councils are responsible for managing water resources under the Resource Management Act 1991 (RMA). They develop regional plans that set allocation limits and grant resource consents to both schemes (for water takes) and individual farmers (for water use). In practice, water take and use consents have become linked (i.e. consideration of what land use the water is used for when consenting the take).
- On-farm, the individual farmer or landowner is responsible for the efficient and compliant use of the water, including managing nutrients as well as sediment and biological (E.coli) runoff.

Governance and oversight

- Central government, primarily through the Ministry for the Environment (MfE) and to a lesser extent the Ministry for Primary Industries (MPI), sets the macro-level policy framework. The cornerstone has been the National Policy Statement for Freshwater Management (NPS-FM), which embeds the principle of Te Mana o te Wai, prioritising the health of water bodies. It has been amended by the Resource Management (Freshwater and Other Matters) Amendment Act 2024 and other minor amendments.
- The Government is in the process of replacing the RMA with the Planning Bill and Natural Environment Bill, which are expected to pass into law in 2026. There has also been public consultation on multiple other current National Policy Statements and National Environmental Standard instruments related to water (productive, drinking, urban, industrial)
- Regional councils and Unitary Authorities provide the primary governance and oversight. They translate national directives into legally binding regional plans, monitor water use and environmental impacts, and enforce compliance with consent conditions.
- IrrigationNZ serves as the key industry body, providing advocacy, promoting best practices, and facilitating knowledge sharing among irrigation schemes and farmers.

16.2. Paying for investment

- The primary funding model for irrigation infrastructure is user-pays, where farmers contribute capital by purchasing shares in a scheme and then pay annual charges for water access and delivery, covering both operational and capital costs. Individual irrigators fund on-farm infrastructure, such as bores, pumping stations, power supplies, and control systems.
- Historically, central government provided significant capital subsidies and grants to encourage development. More recently the government has had a role in assisting project feasibility with grants (Irrigation Acceleration Fund, MPI) and capital phase bridging loans, representing a shift towards co-investment models. Crown Irrigation Investments Ltd (a government entity established to invest in schemes) is in the process of being wound up, but funding may now be available through entities like the Regional Infrastructure Fund for projects that meet specific economic and environmental criteria.
- Schemes also raise capital through commercial loans from banks, with the security of their assets and shareholder commitments forming the basis for lending.

16.3. Historical investment drivers

- A key driver of investment has been to increase agricultural productivity and enable higher-value land use. Irrigation has facilitated the conversion of dryland farming to more intensive and profitable sectors like dairying, viticulture, and horticulture.
- Another major driver of investment is the desire to smooth agricultural productivity within seasons. More dependable crop productivity helps stabilise long-term price contracts for buyers, and therefore consumers.

- Irrigation infrastructure helps to mitigate the impacts of frequent and intense droughts, particularly in the eastern regions of the South and North Islands (for example, Canterbury, Otago, Hawke's Bay), by providing a reliable water supply for crop and pasture growth.
- Post the Second World War and through to the early 1980s, government policy actively encouraged agricultural expansion and intensification through direct investment, subsidies, and development programmes.[225] The subsequent increase in land under production required more resources, which included access to water.

16.4. Community perceptions and expectations

- The Commission does not have any specific information on whether irrigation infrastructure is meeting overall community needs.

16.5. Current state of network

- The network is a mix of ageing and modern infrastructure. Many older schemes, developed from the 1930s to 1980s, still rely on open, unlined canals which can result in significant water loss through seepage and evaporation.
- There is a clear and ongoing trend of modernisation, with schemes investing heavily in converting open races to more efficient piped networks. This reduces water loss, enables pressurisation for modern sprinklers, and improves overall control.
- On-farm systems are also in a state of transition. Older, less efficient methods like flood and border dyke irrigation have almost all been superseded, and there has been a significant shift towards precision technologies like centre-pivot, variable-rate irrigators, solid set, and drip-line systems. There has also been rapid adoption of data acquisition and analysis systems, including satellite technology and AI systems, for water-use decision-making support.

16.6. Forward Guidance for capital investment

- The Commission has not produced Forward Guidance for irrigation infrastructure.

16.7. Current investment intentions

- The Commission's Pipeline does not contain any information on specific irrigation projects.

16.8. Key issues and opportunities

- **Technology:** Advanced irrigation scheduling tools, precision application technology, and data analytics offer a major opportunity to yield higher water productivity and reduce water consumption, reducing both costs and environmental footprint.
- **Policy consistency:** Investment needs and opportunities are influenced by environmental standards, targets and limits, meaning that consistent settings can help to optimise farmers and growers' investment (along with public, institutional, iwi and foreign investment) in the best combination of infrastructure, new technology and agricultural processes.[226,227] Appropriate policy settings can encourage the uptake of new technologies, shift water use toward high-value products and shift land use to its highest and best use. Water allocation is also a source of uncertainty with current cases before the court system.
- **Asset management:** Developing a sector-specific asset management framework as a collaboration between central government, regulators and industry would create standardised approaches to irrigation asset investment and operational management. Many older schemes face significant future costs for upgrading or replacing infrastructure to meet modern standards of efficiency and environmental performance. Greater investment in water storage and distribution may support greater efficiencies from existing schemes.
- **Climate change:** Climate change could lead to drier conditions in some areas around the country resulting in lower river levels. This may result in higher irrigation demand, primarily to ensure consistent productivity of crop yields and limit fluctuations in prices.

17. Social housing

17.1. Institutional structure

Service delivery responsibilities

- Social housing is rental accommodation provided at below market rates, usually targeted and allocated to those with specific housing needs. Most social housing is funded by central government through the income-related rent subsidy (IRRS).
- The largest provider of social housing is Kāinga Ora – Homes and Communities (Kāinga Ora), a Crown entity. Kāinga Ora provides around 73,000 social housing tenancies, around 84% of all government-funded social housing places. Around 200,000 people live in Kāinga Ora homes, making it the largest landlord in New Zealand.
- Government-funded social housing is also provided by Community Housing Providers (CHPs), with 61 non-government entities providing around 14,000 government-funded social housing places. Some councils have also established independent CHPs to manage their social housing stock and access IRRS funding.
- In addition, sub-market rental accommodation is also provided by local councils and community organisations.
- Governments have also provided funding for housing interventions across the housing continuum, including emergency housing, transitional housing, affordable rentals and shared ownership schemes.

Governance and oversight

- The provision of social housing is regulated by the Public and Community Housing Management Act 1992, which is administered by the Ministry of Housing and Urban Development (HUD). CHPs are required to be registered with the Community Housing Regulatory Authority, which monitors CHPs to ensure they are well-governed, financially viable and delivering appropriate services to their tenants.
- In addition, the Residential Tenancies Act 1986 regulates social and non-social housing tenancies, including the rights and responsibilities of tenants and landlords, healthy home standards and disputes management.
- Kāinga Ora is a Crown entity with a board appointed by the Ministers of Housing and Finance. The Kāinga Ora board is the primary monitor of Kāinga Ora management and is accountable to the responsible Ministers for the performance of the organisation. HUD also monitors Kāinga Ora, advises Ministers on the performance of Kāinga Ora and acts as the responsible Ministers' agent.
- To access government-funded social housing, individuals must apply to the Ministry of Social Development (MSD) to be added to the Housing Register, with eligibility based on age, residence, income and asset tests. MSD assesses the housing need of applicants and assigns a priority rating and score using the Social Allocation System. As suitable social housing places become available, Kāinga Ora and CHPs offer tenancies to shortlisted applicants from the Housing Register. As of November 2025, there were roughly 19,500 households on the Housing Register.

17.2. Paying for investment

- Government-funded social housing is funded mainly from user charges (below market rate rents paid by tenants) and subsidies paid for through general taxation. Government funding for social housing is provided through ongoing payments for services, rather than up-front grants. The primary payment is the IRRS. Access to this subsidy requires that the rent charged to the social housing tenant is capped at 25% of their income, with the IRRS payment to the provider making up the difference between rent from the tenant and the rent the property would achieve on the private rental market. In addition, a supplementary payment called Operating Supplement (OS) is paid for newly built social housing places, to help cover the cost of financing construction.
- To pay for the upfront cost of building a social housing place, social housing providers need to borrow against their future cash flows of IRRS and OS funding. Kāinga Ora is required to borrow directly from the Crown, via New Zealand Debt Management (NZDM), at a small premium to the borrowing costs of NZDM.

- Social housing is purchased by HUD from CHPs primarily through 25-year capacity contracts, which are intended to provide CHPs with greater certainty over future cashflows. CHPs borrow to fund construction costs from financial institutions, including banks and the Community Housing Funding Agency (CHFA). The Government has recently taken decisions to make it easier and cheaper for CHPs to borrow, by providing a loan guarantee scheme to participating banks and a liquidity facility to the CHFA.

17.3. Historical investment drivers

- Investment in social housing is driven by a combination of population growth, overall housing need and differing Government policy approaches. Investment in social housing has occurred in several waves, as different Governments have responded to community need for housing.
- The first wave of significant investment in social housing was in the 1930s prior to the Second World War. Investment remained elevated during the 1940s and 1950s but gradually started falling through the 1960s. There were also waves in the late 1970s and late 1980s.
- Investment in social housing was relatively low from the 1990s, including a period where the total social housing stock was falling due to asset sales. This was part of a wider reform to housing supports, with greater emphasis placed on direct financial support to households. Transfers of social housing from government to non-government ownership was a focus in the 2010s, with limited additional investment.
- The most recent wave of social housing investment started around 2018. This was driven by a significant increase in demand for social housing, with the number of applicants on the Housing Register more than quadrupling between 2017 and 2022. Need for a range of housing supports increased over this period, leading to the use of motel accommodation for emergency housing and investment in transitional housing.
- Current social housing investment is also driven by the need to renew Kāinga Ora homes that are reaching the end of their useful life, exacerbated by limited renewals and maintenance in previous decades. Waves of investment during the 20th century have become waves of renewal need in the 21st century.

17.4. Community perceptions and expectations

There is limited recent data available on the general New Zealand public's perceptions, expectations and preferences for social housing.

- Public perceptions of the wider housing market are relevant, as social housing is one way of addressing wider housing affordability challenges. A range of studies show that addressing housing supply, affordability, and quality issues are consistently very important priorities for New Zealanders. For example:
- Housing, and the price of housing, was the top issue (alongside inflation/cost of living) selected by New Zealanders, averaged across 24 survey waves over seven years.[228]
- New Zealand's supply of new housing was rated as poor/very poor by 67% of respondents and identified as the top infrastructure priority for New Zealand in a 2024 survey (of the options provided), with 55% of respondents selecting it.[229]
- In another survey, housing affordability was identified as the third top issue that the government should take action on, averaged across three years (2023–2025).[230]
- Housing affordability was the fourth most important priority, and cities not keeping up with growth was also very important for most New Zealanders responding to the Commission's Aotearoa 2050 survey of over 23,000 people.[231]

17.5. Current state of network

- As of November 2025, New Zealand had roughly 87,000 government-funded social housing places, around 73,000 owned by Kāinga Ora and 14,000 owned by CHPs. In addition, non-IRRS social housing is also provided by local councils, Māori housing providers and other non-governmental organisations.
- Kāinga Ora had property assets, excluding land, of $17 billion in 2025. According to Stats NZ, the value of social housing stock owned by local councils, excluding land, was $4.5 billion in 2022.
- Investment in social housing as a share of GDP peaked in the 20 years after the Second World War (roughly 1-2% of GDP each year) with further waves of investment in the 1970s and 1980s. Since 1990, we've spent about 0.2% of GDP on building or renewing social housing each year. However, in recent years, investment in social housing has been elevated, with around 20,000 new social housing places being added since 2017.

- Since 1960, the ratio of investment to depreciation in social housing has been 121%, the lowest ratio of any horizontal or vertical infrastructure class according to Stats NZ data. This pattern likely reflects historical reductions in the total stock of social housing, the average age of stock increasing and potentially indicates a decline in the average condition of the stock originally built in the post-war period. The recent wave of investment has likely been reversing this trend.
- According to the OECD, about 3.8% of New Zealand's housing stock is social housing, below the OECD average of 7%. New Zealand has 14.4 social houses per 1,000 people, which is below the OECD average of 32.7.[232]
- New Zealand appears to rely more on providing rent supplements, such as the Accommodation Supplement, rather than relying on constructing social housing. The OECD estimates that New Zealand spends just over 0.4% of GDP per year on rent supplements, which is sixth highest in the OECD.

17.6. Forward Guidance for capital investment demand

Forward Guidance for social housing

	2025–2035	2035–2045	2045–2055	2010–2022 historical average
Average annual spending (2025 NZD)	$1.5 billion	$1.8 billion	$2.2 billion	$1.1 billion
Percent of GDP	0.3%	0.3%	0.3%	0.3%

This table provides further detail on our Forward Guidance, which is summarised in Chapter 3. Further information on this analysis and the underlying modelling assumptions is provided in a supporting technical report.[233]

- The Commission's Forward Guidance assumes that the government will own and operate social housing in the same way it has in the last 10 to 20 years. It does not make assumptions about asset sales or the shift in ownership/subsidy models.
- The Commission projects that to meet the needs of a growing population, renewal requirements, and to catch up on years of underinvestment in renewals, investment over the next 30 years will need to be higher than it has been in the latest decade.
- Ongoing renewal requirements plus growth in construction costs alone will require about 0.16% of GDP (over $645 million in 2025) a year on average, before accounting for any growth in demand from a growing population or the need to catch up on deferred renewals.

17.7. Current investment intentions

- As the largest provider in the sector, Kāinga Ora's Reset Plan, released in February 2025, provides insight into investment intentions for the sector.[234] While exact decisions on capital investment are dependent on Ministerial and Board-level decisions, the Reset Plan sets out potential scenarios for investment. The Reset Plan's central scenario projects between 1,500 and 2,000 new builds per year out till 2029, offset by demolitions and sales.
- In addition to Kāinga Ora's investment, CHPs were funded to provide 1,500 social housing places in Budget 2024 and 550 social housing places in Budget 2025, with additional investment to be delivered through a Flexible Fund.
- The chart below represents planned and intended net investment in social housing activities (this is the cost of investment, less sales of assets). The Pipeline value is not used as a comparison in this chart as it only reports on asset creation and maintenance and so does not represent the net value.

Figure 61: **Social housing investment intentions**

The orange bars show the measure of investment intentions based on data from 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 for the sector.

17.8. Key issues and opportunities

- **Government's approach to social housing:** There are different views on the extent to which housing need should be addressed by government-provided social housing, non-government provided social housing, or direct financial assistance to households (such as the Accommodation Supplement). The choice of which approach to use will have a significant impact on required investment in social housing.
- **Management of the asset portfolio:** According to Treasury's latest Investment Statement, the asset base of Kāinga Ora ($48 billion) is one of the largest in the Crown's social portfolio.[235] Given significant renewal requirements and continued elevated housing need, ensuring strong balance sheet and asset management is critical to meeting housing need. For example, use of asset recycling, selling houses that are less needed to build houses in higher need areas and typologies, helps to better meet housing need while reducing pressure on government capital allowances.
- **Meeting housing demand:** The types of social housing people need is changing over time. For example, over half of the applicants on the Housing Register are single adults who require a one-bedroom home, whereas less than 15% of Kāinga Ora housing stock, the majority of which was built decades ago, is one-bedroom units. In addition, social housing need is unevenly distributed across the country, being higher in small centres in the upper North Island, such as Rotorua, Gisborne and Whakātane, and lower in the South Island.[236] Shifting to a housing stock that matches the needs of those on the Housing Register will require significant shifts in investment and asset recycling of houses in lower need areas and lower demand typologies. The Kāinga Ora Reset Plan and the new Housing Investment Strategy are responding to this shift in demand.
- **Asset management.** Low investment and renewal of government-owned social housing has been a significant issue over multiple decades, leading to significant renewal requirements over the next 15 years. Between 1990 and 2015, there was lower investment in government social housing, resulting in ageing and lower quality housing stock.[237] There were likely many drivers for this, including funding restraints, land-use restrictions preventing intensification, and changes in how Governments view their role in social housing. Since 2015, significant investment in new social housing stock, supported by more enabling land-use settings such as the Auckland Unitary Plan, has increased average quality but significant renewal needs remain. The Kāinga Ora Reset Plan sets out scenarios to renew, refurbish and maintain assets at a moderate and sustained level over time.

Appendix Two:

Rautaki Hanganga o Aotearoa | New Zealand Infrastructure Strategy

The National Infrastructure Plan builds on the recommendations of the 2022 Strategy. Progress has been made against many of these recommendation. https://tewaihanga.govt.nz/the-strategy

	Recommendation		How
1	Strengthen partnerships with Māori across the infrastructure system of Aotearoa New Zealand	a	Undertake a 'State of Play' of current Māori engagement activity for infrastructure to help inform and educate readers on how infrastructure providers can engage and work with Māori in a way that works for Māori and infrastructure providers.
		b	Identify a lead government agency that will establish a Māori advisory group to develop a framework for strengthening partnerships with Māori in infrastructure planning and delivery. The framework should be based on Te Tiriti o Waitangi and tikanga Māori and consistent with an all-of-government approach. The advisory group should also consider the evolving role of Māori in the infrastructure system and options for ongoing governance and oversight of the framework.
2	Develop capabilities and capacity across the infrastructure system for effective partnerships with Māori	Put in place a programme to develop capabilities and capacity for effective partnership that should:	
		a	Build specialist Māori infrastructure capabilities at the centre of government that can support agencies and Māori.
		b	Consolidate and enhance specific funding for provision of technical support for iwi with infrastructure planning and delivery partnerships (agency or programme specific).
		c	Broker partnerships with Crown agencies and industry to create fixed-term secondment opportunities for iwi organisations.
		d	Leverage procurement opportunities for Māori across infrastructure policy, planning, delivery, maintenance and research.
3	Strengthen the Māori infrastructure evidence base	A collaborative multi-decade research agenda should be designed that:	
		a	Builds an evidence base exploring how infrastructure planning and delivery out to 2050 and beyond can help empower Māori and enable rangatiratanga.
		b	Builds and disseminates a programme of in-depth case studies from leading Māori infrastructure partnership projects.
		c	Investigates the use of an appropriate national framework for assessing the nationally agreed effects of infrastructure on cultural values (sometimes referred to as cultural impact assessment, the mauri model or similar), as a supplement to the local, rohe-specific effects (determined on a project-specific basis by iwi and hapū).
4	Minimise lock-in of future emissions	Set a strategic direction in emissions reduction plans that requires public sector investment programmes to be compatible with our international commitments on carbon emissions. Measures to support this direction should:	
		a	Require infrastructure policies and strategic plans take into account, where feasible, their implications for locking in carbon emissions.
		b	Include full consideration of non-built solutions and decarbonising existing infrastructure in all business cases.
		c	Require assessment of whole-of-life carbon emissions, including embodied, enabled, and operational emissions, in all business cases.
		d	Require the use of a cost of carbon compatible with international commitments on carbon emissions within all cost benefit analyses, outlined in the Treasury CBAx tool.
		e	Measure the carbon impacts of different construction materials used in infrastructure projects.
		f	Set a timetable for reviewing regulations, standards and codes to ensure they don't inhibit the uptake of low carbon materials.

	Recommendation	How
5	Achieve net zero carbon emissions at minimum cost	Develop clear and credible policies and mechanisms for offsetting any differences that arise between actual emissions and our international commitments on carbon emissions. In developing a National Energy Strategy, include measures that achieve net zero carbon at minimum cost. These include:
		a Modify the renewable electricity target to focus on renewable energy.
		b Reduce barriers to the prudent expansion of transmission and distribution capacity where needed.
		c Ensure the existing gas infrastructure can be redeployed when new alternatives become viable.
		d Progress efforts to remove barriers to local generation, storage and demand management activity, in particular ensuring distributors have reasonable access to the metering data they need to manage their networks safely and efficiently.
6	Speed the build of low-emissions energy infrastructure to leverage our abundant resources	Streamline consenting of low-emissions energy infrastructure while meeting environmental objectives by:
		a Strengthening existing Resource Management Act 1991 national direction for renewable energy generation and transmission.
		b Developing a streamlined approach to planning and consenting under the Natural and Built Environments legislation, which could include tools such as environmental standards for project consenting and development of renewable energy zones.
		c Establishing an offshore regulatory framework to explore and develop low-emissions energy resources in territorial waters.
7	Ensure a fair, inclusive and equitable transition to a low-emissions economy	Target support to those disproportionately affected in the transition by:
		a Providing additional financial support to disadvantaged consumers to assist them with the upfront cost of investing in energy-efficiency improvements.
		b Supporting retraining for displaced workers.
		c Involving Māori and iwi in the development of specific energy hardship initiatives.
8	Improve efficiency and security of freight and the national supply chain	In developing a long-term National Freight and Supply Chain Strategy, the government should:
		a Include airports, ports, road, rail and coastal shipping.
		b Ensure it is integrated, resilient and multi-modal.
		c Identify infrastructure needs and options to improve efficiency, sustainability and security.
		d Assess the appropriateness of regulatory and market structures.
		e Recommend reforms and investments that will enable the more efficient movement of freight, provide freight users with competition and choice.
		f Build national freight and supply chain data capabilities for capturing and sharing data securely to improve efficiency.
		g Investigate the development of a National Location Registry, where attribute information about physical pickup and delivery locations is digitally stored and accessible to authorised users, leveraging the recent experience of Australia. The Registry should be sensitive to confidential information and privacy concerns.

	Recommendation	How
9	Reduce barriers to and costs of providing infrastructure services	In developing a National Digital Strategy, the government should:
		a Prepare New Zealand for realising the full benefits of a connected digital society and establishing regions where 21st century talent wants to live.
		b Fix digital black spot areas and ensure universal access to digital services and skills that remove the limitations of physical distance from major markets nationally and internationally.
		c Leverage changing social and economic patterns arising from COVID-19 and rising urban house prices to support the development of regional areas.
		d Identify and set out a plan to resolve key telecommunication system resiliency issues.
		e Identify options to improve trust in digital services and address digital privacy concerns.
10	Reduce population uncertainties for infrastructure demand, planning and delivery	Establish a National Population Plan that:
		a Presents a likely population pathway over the next 50 years, and identifies requisite supporting policies.
		b Provides direction for regional spatial plans.
		c Identifies supporting policies required for New Zealand to capitalise on the benefits of greater population, while managing and minimising the costs of growth.
11	Prepare for zero-emissions commercial electric flights and unmanned aircraft	Prepare existing airport infrastructure for zero-emissions commercial electric flights and leverage wider export opportunities. Measures will need to:
		a Develop the requisite training for existing and new pilots and for the maintenance of electric aircraft.
		b Prepare power and charging infrastructure networks and capabilities.
		c Develop a network of charging stations across New Zealand airports so that alternatives are available, in the case of service disruptions.
		d Coordinate charging standards to ensure that a wide variety of aircraft can utilise charging equipment.
		e Investigate export-ready applications, such as pilot and maintenance training.
		f Upgrade the aviation system and existing airport infrastructure to cater for greater use of unmanned aircraft.
12	Improve water infrastructure pricing and provision in cities	The water, wastewater and stormwater sector should be reformed, including by:
		a Implementing performance-based economic regulation and water quality regulation to ensure that water providers are incentivised to drive efficiency and deliver excellent customer service.
		b Ensuring that there is a clear link between the cost of providing water services and the prices that are charged to users, following the principles in Section 7.2.
		c Allowing entities to use their balance sheet capacity to finance infrastructure for growth, as well as funding asset renewals and improvements in water quality.
		d Clarifying the interface between water service entities and developer-financed water infrastructure provided under the Infrastructure Funding and Financing Act 2020.
		e Ensuring that developers can benefit appropriately from the provision of infrastructure that has spare capacity.
		f Developing cost benefit analysis guidelines to standardise evaluation decisions on water infrastructure against social, environmental and economic benefits.
13	Reduce pressure on water infrastructure through better water management and conservation	Steps that should be taken to reduce pressure on water infrastructure include:
		a Using planning rulebooks to encourage on-site solutions. For example, building coverage could be increased in exchange for installation of on-site stormwater-management devices.
		b Removing regulatory barriers to water conservation, such as consent requirements to install rainwater harvesting tanks.
		c Setting performance standards that improve the water performance of appliances.

	Recommendation	How
14	Realign local government boundaries, where appropriate, to improve coordination of infrastructure and planning outcomes	Where appropriate, local government boundaries should be redrawn to better align borders with functional labour-market boundaries to enable the coordination of key infrastructure and planning decisions. The realignment of boundaries should be guided by:
		a The alignment of borders with wider urban labour markets, commuting and urban growth patterns.
		b The costs and benefits of integrating regional planning and infrastructure provision.
		c An integration of infrastructure planning, ownership and operation to enable the efficient provision of infrastructure.
		d The alignment of funding streams with the infrastructure funding and financing principles outlined in Section 7.2.
		e A consideration of mechanisms for local voices to continue to inform decision-making.
15	Increase the supply and use of low-emissions transport modes	Transport network planning and funding agencies should:
		a Improve the quality, speed and reliability of public transport to major employment centres.
		b Improve active transport infrastructure, starting with low-cost solutions such as improving pedestrian crossings and reallocating existing road space to provide safe cycling facilities.
		c Reduce barriers to the cost-effective implementation of low-emissions transport modes and streamline costly resource management and local government consultation processes.
		d Increase certainty of funding to enable low-emissions transport modes to scale up efficiently.
		e Ensure all options considered for investments are subject to appropriate cost benefit analyses.
16	Reduce costs by optimising infrastructure corridors	Enable the planning and protection of infrastructure corridors in advance of growth through the following steps:
		a Develop a lead infrastructure policy and supporting guidance that provides a clear definition of lead infrastructure. The policy should include evaluation techniques for decision-making.
		b Amend resource management legislation to extend the duration of designations to 30 years and allow designations to be granted based on concept plans. Statutory tests for designations should be based on an established evaluation methodology.
		c Establish a corridor reservation fund with a secure funding source that can be used for early corridor protection activities, such as buying designated or identified sites in advance.
17	Optimise the use of urban land	Review central and local government land holdings to identify opportunities for land swaps, releases of land for development and relocations of major public facilities.
18	Improve the efficiency and consistency of urban planning by standardising planning rulebooks	**a** Establish national uniform definitions for land use policy.
		b Develop a National Planning Framework that appropriately standardises rules, with local authorities required to adopt these rules with limited variations.
		c Make consistent provision for papakāinga housing on Māori land and other forms of community housing.
		d Merge regional and district plans into a smaller number of combined plans.
19	Improve delivery of transit-oriented development (TOD)	Undertake post-implementation reviews of recent transit-oriented development (TOD) opportunities. These reviews should:
		a Reflect international best practice, be independent and assess actual performance against appraisal, cost schedule and benefits.
		b Recommend changes to practices and policies to increase the effectiveness of TOD delivery.

	Recommendation	How
20	Improve the efficiency and outcomes of infrastructure through spatial planning	Resource management reforms should include requirements for regional spatial plans that:
		a Provide clear direction to district plans and funding plans.
		b Include mechanisms for participation by relevant central government infrastructure suppliers and Māori.
		c Provide for cities to double or triple in population and provide alternative scenarios for the spatial distribution of growth, rather than providing only for a single growth scenario.
		d Identify future infrastructure requirements, including future transport networks and other major infrastructure.
21	Reduce congestion and improve urban mobility	Implement congestion pricing and road tolling in urban centres by:
		a Implementing recommendations from the "The Congestion Question" report for congestion charging in Auckland. Stage implementation as appropriate, considering current and future public transport arrangements.
		b Immediately removing legislative barriers to implementing congestion charging and road tolling, such as requirements in the Land Transport Management Act 2003 for alternative untolled routes.
		c Progressing planning for congestion pricing schemes for Wellington and other cities as appropriate.
		d By 2025, identifying other urban areas where congestion pricing may be beneficial.
		e Assigning responsibility for setting and adjusting prices to an appropriate independent institution.
22	Target transport investment to areas of highest need using signals from congestion pricing	Share and use data and signals from congestion pricing to identify where future multi-modal transport investment is needed.
23	Increase housing development opportunities in areas with good access to infrastructure	Improve development opportunities in areas already well served by infrastructure by:
		a Accelerating implementation of the National Policy Statement on Urban Development and monitoring compliance, including requirements to upzone around rapid-transit and employment centres.
		b Enabling greater urban development, including requirements for minimum levels of mixed-use zoning and upzoning.
		c Prioritising provision of human necessities, such as housing, over preservation of subjective preferences (e.g. heritage, character and amenity).
		d Using national direction to set binding targets for increased housing and business capacity commensurate with future growth expectations, guided by land prices in high-demand areas.
24	Improve spatial planning through better information on infrastructure capacity and costs to service growth	Improve information on the infrastructure cost implications of different growth possibilities by:
		a Developing, validating and publishing a spatial model of the long-run average infrastructure costs of servicing growth in different locations, to inform issues like regional spatial planning, local government development contributions policies and the alignment of development-capacity increases with infrastructure capacity and low-cost opportunities for development. This model should cover all relevant types of public infrastructure.
		b Requiring water entities to publish geo-spatial information on water asset condition, capacity for growth in existing water networks and capacity for growth due to planned network upgrades.
		c Developing a common approach to measuring the condition and capacity of water infrastructure assets.

	Recommendation	How
25	**Increase the resilience of critical infrastructure**	To increase the resilience of critical infrastructure the government should:
		a Develop a principles-based definition of critical infrastructure.
		b Apply the definition of critical infrastructure consistently across the policy and legislative framework for resilience.
		c Develop the criteria to set infrastructure criticality levels and then identify New Zealand's critical infrastructure.
		d Clarify and strengthen requirements for identifying minimum levels of service for critical infrastructure in the event of an emergency.
		e Adequately resource lead resilience agencies to carry out the functions required to support the delivery of critical infrastructure, on a consistent and long term basis.
26	**Improve infrastructure risk management by making better information available**	To make better information available to support risk management steps should be taken to:
		a Require regular disclosure of information about critical infrastructure preparedness and minimum levels of service in an emergency.
		b Resource the maintenance, upkeep and availability of research, information, data-sets and tools to support decision-making that enables resilience outcomes.
27	**Prepare infrastructure for the impacts of climate change**	To adapt to climate change, actions should be taken to:
		a Finalise and adopt the infrastructure actions set out in the National Adaptation Plan.
		b Support the provision of accessible, consistent and robust information on regional and local climate change impacts across the whole country.
28	**Support the security of supply of essential materials, goods and services to build, operate and maintain infrastructure**	To increase the resilience of supply of essential materials, steps should be taken to:
		a Incorporate into all risk-management planning for critical infrastructure a consideration of the security of supply of materials and goods required for the construction, operation and maintenance of infrastructure (including aggregate, bitumen, cement, concrete, steel and processed timber) and other essential goods and services.
		b Require that regional councils, in conjunction with territorial authorities, undertake resource scans as part of their long-term planning processes and protect sites suitable for aggregate extraction, including through zoning.
29	**Establish a clear national direction for circularity in waste management**	In developing a National Waste Strategy, provide appropriate direction that:
		a Sets out a plan for circularity and is consistent with net zero emissions targets.
		b Accelerates investment and innovation in waste minimisation and the recovery of resources.
		c Considers an appropriate aspirational target.
		d Sets out performance measures for tracking performance.
		e Ensures waste markets are well functioning and appropriately incentivised and regulated.
30	**Prioritise options that minimise waste from entering the market to avoid unnecessary infrastructure costs**	Options should include:
		a A ban on products that are hard to recycle.
		b The development of options to incentivise greater product stewardship.
		c Increasing waste-disposal levies sustainably while managing, monitoring and funding enforcement to minimise illegal dumping.
31	**Improve recycling infrastructure for priority materials**	Options should include:
		a Developing processing and biomass utilisation capacity for timber and wood wastes.
		b Developing construction and demolition waste collection services.
		c Developing a network of regional hubs for e-waste and battery drop-offs and the aggregation of hubs with adequate storage capacity for plastics consolidation.
		d Developing opportunities for local tyre-manufacturing and re-treading capacity.
		e Improving sorting facilities.

	Recommendation	How
32	Use behavioural interventions to address barriers to recycling, reduce waste and avoid contamination	This should include:
		a Improving the ease of recycling for consumers, with a focus on simplicity and consistency across jurisdictions.
		b Funding sustained education campaigns that promote and improve the social licence for recycling and promote options to minimise and avoid waste.
		c Coordinating and sharing behavioural change materials between central and local government.
33	Reduce landfill emissions resulting from organic waste.	Steps should be taken to:
		a Improve the collection of organic waste through more commercial and household food waste collection services.
		b Target education and behaviour-change programmes to improve take-up of organic waste collection.
		c Require landfill gas capture for all landfills that accept organic waste.
34	Develop uses for recycled materials in infrastructure	Responsible agencies should:
		a Identify opportunities for more domestic reprocessing, including for plastics (especially e-waste), metals, fibreglass, plasterboard and aggregate.
		b Develop relevant technical specifications and national standards for the re-use of recycled construction materials in infrastructure.
		c Support innovation in, and procurement of, infrastructure design and construction to enable greater use of recyclable materials in infrastructure.
35	Clarify the strategic role of waste-to-energy	The Government should establish a position on waste-to-energy as part of the National Waste Strategy, noting its potential as an alternative to landfill.
36	Improve waste sector data and insight	Fund improvements in waste data to enable comparisons between volume, performance and processing capacity across waste streams by region and territorial authority. This might be achieved by resourcing the implementation of the National Waste Data Framework.
37	Encourage public infrastructure waste minimisation and designing for deconstruction	This should include the following steps:
		a Require all infrastructure projects to incorporate waste minimisation plans in procurement and design objectives and use recycled products where feasible.
		b Encourage prefabrication and standardised options as part of infrastructure delivery.
		c Investigate the efficacy of a resource exchange mechanism for infrastructure projects, through a partnership between government and the construction sector.
38	Strengthen government as a sophisticated client of infrastructure	Take the following steps to develop the client capabilities of the government to better deliver infrastructure:
		a Develop service quality standards and standard design methodologies for each major infrastructure asset class with key delivery agencies.
		b Require long-term planning informed by service standards to better predict future infrastructure needs.
		c Strengthen government capabilities for end-to-end delivery, including governance, commissioning, procuring, negotiation, oversight and whole-of-life management systems for major infrastructure.
39	Increase clarity of long-term investment intentions for public infrastructure agencies	Central government requirements for long-term investment planning and asset management planning for all public infrastructure providers should be aligned with standards for local government and regulated infrastructure. Long-term investment planning should be transparent, aligned with agency service delivery priorities and strategies, and linked with budget allocations and other sources of financing.
40	Strengthen independent advice for infrastructure prioritisation	Establish an independent infrastructure priority list to build consensus on key projects and initiatives that address significant long-term problems. The development of the priority list should include the following steps:
		a Publish guidance on criteria for project inclusion and priority investigations, consistent with best practice decision-making principles.
		b Solicit applications for priority projects and initiatives from infrastructure providers.
		c Assess projects and initiatives and update the priority list regularly.

	Recommendation	How
41	Improve infrastructure performance reporting and insight	Assemble and analyse infrastructure performance across:
		a Projects: how individual assets perform in delivery and operation.
		b Networks: how infrastructure performs as a network.
		c Systems: how networks perform as an integrated system.
42	Optimise infrastructure investment by considering non-built solutions first	Consider and prioritise non-built options when choosing how to address infrastructure challenges, including:
		a Using pricing to manage demand.
		b Making better use of existing infrastructure by adapting or re-using it.
		c Using regulation and education to manage infrastructure demands.
		d Considering lower-cost options before progressing to higher-cost options.
43	Strengthen project evaluation through cost benefit analysis	Deliver consistent and transparent project evaluation by requiring:
		a Local and central government agencies to undertake and publicly release rigorous social cost-benefit analyses on all public infrastructure investment proposals where the whole-of-life costs of the proposals exceed $150 million.
		b Commitments to projects to only be made after the completion of this analysis, rather than prior to undertaking the analysis.
		c Analysis to recognise inter-generational choices appropriately and include wider environmental and social impacts.
44	Ensure an appropriate consideration of future generations in project evaluation	Undertake an inquiry into the appropriateness and consistent application of New Zealand's social discount rate policy, which determines how much weight is placed on future outcomes relative to present-day outcomes when analysing public infrastructure investments.
45	Improve the infrastructure project knowledge base	To improve future project evaluation methods and processes, delivery agencies should:
		a Conduct and fund independent post-implementation reviews of major infrastructure projects at completion.
		b Publish ex-post reviews in full and measure performance, benefits and costs against business case estimates.
46	Improve infrastructure cost analysis	Undertake investigations into the cost performance of New Zealand's infrastructure sector that:
		a Cover multiple infrastructure sectors to enable the identification of common issues and points of difference.
		b Identify recent cost trends and drivers of cost trends within infrastructure sectors.
		c Benchmark New Zealand's cost performance against better-performing OECD countries and identify drivers of differences.
		d Are repeated at least every five years to inform ongoing Infrastructure Strategy development.
47	Improve equitable funding of local infrastructure	Investigate options and timing to phase in the removal of existing Crown exemptions to pay rates, recognising when it generates a demand for infrastructure. The approach should avoid creating excessive and unexpected financial liabilities.
48	Reform the transport funding system.	Implement a new, fit-for-purpose transport funding system that's sustainable and adequate for meeting future transport investment requirements. The system should incorporate principles for user charges and best-practice funding and include shifting vehicles to time, location, distance and level-of-service-based pricing. Establishing a new system should include:
		a Establishing necessary transport funding requirements.
		b Introducing necessary complements or replacements to Road User Charges and Petrol Excise Duty.
		c Determining how additional funding, if required, should be collected.
49	Improve and streamline the application of development contributions	Implement a single national legislative process for development contributions policy to assist territorial authorities in interpreting existing legislation for determining development contributions policy. This could be similar to National Building Standards.

	Recommendation	How
50	Consolidate existing separate infrastructure capital funds	Fragmented infrastructure capital funding pools should be consolidated and integrated in a transparent infrastructure capital fund, or funds. The consolidation of national capital funding programmes for infrastructure would enable the Government to prioritise investments based on national significance and net benefits and enable greater public transparency of infrastructure capital funding decisions. How funding is held and distributed should: **a** Be set out transparently. **b** Include a consideration of the use of grants, loans and investments, or some combination of these.
51	Improve the ability to debt fund infrastructure	As a way of accessing alternate financing and avoiding debt on local government balance sheets: **a** Investigate opportunities to utilise the Infrastructure Funding and Financing Act 2020. **b** Explore other Special Purpose Vehicles as a mechanism for new infrastructure investments.
52	Improve funding of infrastructure services through targeted funding tools	Establish targeted funding tools for the following applications: **a** Tourism: Ensure that the International Visitor Conservation and Tourism Levy can be used for tourism infrastructure, especially by local authorities with high international visitor numbers that are otherwise struggling to secure funding sources. **b** Wastewater: Introduce legislative change that clarifies the ability of local authorities to direct-rate wastewater based on volumes, to create a better linkage between services and costs to users. **c** Waste: Investigate what funding mechanisms will best achieve the objectives of the Waste Minimisation Act 2008 and the National Waste Strategy and incentivise behaviour appropriately.
53	Encourage the use of value capture tools to fund infrastructure for growth	Enable value capture tools through legislation to ensure that value becomes a driver of service provision.
54	Increase infrastructure funding to meet our infrastructure challenges and boost productivity	Given current expenditure levels are unlikely to be sufficient to provide for infrastructure needs over coming decades, a material increase in infrastructure funding from both public and private sources is required to meet our infrastructure challenges and boost productivity. Government should increase infrastructure funding where there are opportunities to use investment to support productivity growth, resilience and improvement of environmental outcomes. Investments should be made based on rigorous assessments of which projects deliver positive value for money.
55	Ensure that infrastructure charges keep pace with inflation	Infrastructure related charges, fees and levies that are set out in legislation or regulation should be adjusted for inflation.
56	Improve public understanding of how infrastructure is funded	Improve communication about how infrastructure is priced and funded to build public understanding, including: **a** How infrastructure is priced in different infrastructure sectors, and what implications this has for equity and the quality of infrastructure provision. **b** The link between how infrastructure is paid for and the quality of services that are provided.
57	Strengthen the government's mandate to deliver infrastructure	Ensure that the Natural and Built Environments Act 'gives effect' to existing requirements for the government to deliver infrastructure.
58	Improve the evidence-base for environmental consent applications	Robust and consistent data is essential for making informed decisions on environmental consent applications. Steps to increase the quality of data available include: **a** Improving the evidence base on and knowledge of the effects of urban development and infrastructure on the quality of water, air, soil and biodiversity (species and habitat). **b** Centralisation of knowledge to enable consistent application across regional jurisdictions, for the purpose of determining environmental consent applications.

	Recommendation	How
59	Deliver reasonable environment limits and targets in the Natural and Built Environments legislation	Steps to achieve this recommendation include: **a** Focusing on environmental limits and targets for matters sustaining life (for example air, water, soil and biodiversity) rather than human values and preferences (for example heritage, character and amenity). **b** Standardising national minimum environmental limits. Where possible, ensure that environmental limits are measurable, targeted and quantifiable.
60	Develop greater certainty for infrastructure providers in the Natural and Built Environments legislation	Steps that should be implemented to deliver greater certainty include: **a** Standardising and codifying a National Planning Framework for infrastructure in the emerging Natural and Built Environments legislation, which sets requirements and conditions that infrastructure providers are required to meet for routine matters like noise and dust management, to minimise variations and increase certainty. **b** Providing a mechanism for resolving conflicts between multiple outcomes to avoid litigation on the interpretation of the outcomes. **c** Narrowing the definition of 'effects' to those relating to the natural and physical environment, so that other matters (like effects on trade competition) aren't unreasonably used to restrict new infrastructure. **d** Requiring that externalities unrelated to natural and physical resources are addressed elsewhere, such as in a project business case.
61	Increase the diffusion of existing technologies to increase productivity in the infrastructure sector	Increase diffusion of existing technologies through the following steps: **a** Review approaches to procurement at an agency level and consider whether there are barriers to technology diffusion within current systems and practices. **b** Develop a technology plan that establishes a clear time-bound mission and actions to increase the diffusion of technology. This should include consideration of all demand-side drivers and barriers to uptake. **c** Devolve decision-making for technical standard-setting (such as minimum energy performance standards, housing codes, waste and water efficiency) to responsible regulators where there are productivity gains and ensure the standards are reviewed and updated regularly.
62	Accelerate the adoption of open data and common standards for the infrastructure sector	Accelerate the adoption of open data and common standards through the following steps: **a** Identify the legislative and administrative steps required to move toward full open data for central and local government (including infrastructure). **b** Fund, develop and mandate common national infrastructure metadata standards, building on existing government initiatives.
63	Accelerate the digitalisation of infrastructure	Accelerate digitalisation across the infrastructure lifecycle by implementing the following steps: **a** Facilitate consistent use of Building Information Management systems and provide detailed implementation guidance. **b** Accelerate investigations into city, region and nation-wide digital twins to embed them as a process and tool of choice for spatial planning development. **c** Fund and launch a series of artificial intelligence-powered use cases across infrastructure sectors.
64	Provide certainty to industry to invest in skills and training development	Strengthen the Te Waihanga Infrastructure Pipeline to provide industry and government with a long-term view on: **a** The scale and type of work to be completed. **b** The likely resources required to plan, deliver and maintain infrastructure. **c** The geographic and sectoral distribution of projects.

	Recommendation	How
65	Develop the talent required to deliver New Zealand's future infrastructure	Deliver a national infrastructure skills plan to ensure New Zealand has the right people with the right skills to deliver our infrastructure over the medium to long term. A dedicated public and private sector working group should be established to develop the national infrastructure skills plan so that it:
		a Provides information on the likely professional and workforce requirements to deliver planned and forecast infrastructure supply over the next 15 years and beyond.
		b Advises on how our education system can best support our future workforce needs.
		c Provides advice on the role of immigration settings to address critical specialist infrastructure skills deficiencies that could delay construction or add to the costs of projects and maintenance.
		d Provides advice on skill-development pathways that appeal to a diverse audience and increase diversity in all parts of the infrastructure system.
		e Advises on opportunities to improve coordination across projects and sectors, and how employers can work more effectively in partnership with training providers.
66	Build New Zealand's competitiveness for international firms and products	Identify and reduce barriers for international firms and products to enter the New Zealand market by adopting international standards by default unless there is a compelling rationale for the development of a specific New Zealand standard. Strengthen the trans-Tasman procurement market by ensuring a consistent approach in:
		a Product and building standards.
		b Qualification requirements.
		c Contract and procurement processes.
67	Strengthen government client-side capability to plan, design, and deliver projects	Improve project outcomes by increasing public sector capabilities and excellence in infrastructure delivery by:
		a Introducing comprehensive procurement, asset management and project management practitioner development frameworks and underpinning accreditation systems across government.
		b Creating career development opportunities in the public sector by increasing the number of entry-level technical roles in client agencies to support the placement and rapid professional growth of newly graduated practitioners.
		c Building effective partnerships between delivery agencies and New Zealand's academic institutes to disseminate international best practice and lift the prioritisation of research in infrastructure.
		d Aligning remuneration between public and private sectors to improve competition across infrastructure types.
68	Recognise major project leadership as a role with comparable complexity to organisational leadership	The following steps should be put in place to recognise the complexity of major project leadership:
		a Develop guidance on the skill sets and appointment processes appropriate for the leaders of New Zealand's largest projects.
		b Establish a New Zealand Major Projects Leadership Academy based on proven international approaches and make completion a requirement for project leaders.
		c Ensure accountability mechanisms and remuneration are aligned with the complexity and risk project leaders are managing on behalf of the government.

Table 3: **Core principles for infrastructure decision-making**

1. Infrastructure problems and opportunities are quantified as part of long-term planning.
This includes analysing how existing infrastructure will perform and the level of service it will provide under a range of future scenarios. Planning considers opportunities to partner with and unlock opportunities for Māori, interdependencies with other infrastructure, developments in technology and changes likely to impact infrastructure services in the coming decades.
2. Delivery agencies identify infrastructure needs in response to quantified infrastructure problems.
Infrastructure needs are framed as potential responses that are likely to be required under several future scenarios. Delivery agencies publicly release strategic planning information to explain what the problem is, the cost of the problem and the potential solutions.
3. Delivery agencies invest in feasibility studies to scope potential options.
These enable the costs and benefits of different options to be meaningfully compared and ensure that any risks can be identified. As part of these studies, delivery agencies should consider a range of options that don't require construction, including those that make better use of existing infrastructure or changes to regulatory and pricing settings.
4. Where an infrastructure need is identified, steps are taken to ensure potential options can be delivered affordably.
Low-cost options for addressing the need are considered, and planning and design seeks opportunities to minimise delivery costs. Land needed for future infrastructure is protected by delivery agencies, which also ensures appropriate integration into long-term land-use plans.
5. A detailed analysis of a potential project is undertaken through a business case.
A business case is used to rigorously examine a potential project's benefits relative to its costs, value the future appropriately, show the project to be resilient to change under a range of future scenarios, and show who benefits and how much. A preferred option or cost profile is not announced until this detailed analysis has been completed.
6. Delivery agencies assess alternative funding sources for each potential project.
Delivery agencies minimise the need for public funds by considering other funding options and determining a fair funding split between taxpayers, ratepayers, users and other beneficiaries.
7. Meaningful stakeholder engagement is undertaken at appropriate points throughout project development and delivery.
Delivery agencies should engage with relevant stakeholders when identifying problems and before arriving at a preferred solution. Depending upon the project, relevant stakeholders could include iwi, users, affected neighbours or other interest groups, private infrastructure owners and operators and, where public funding is required, the general public.
8. All information supporting infrastructure decisions is publicly released.
This includes all analyses underpinning long-term plans and option development and assessment, and extends to full business cases once they have been independently assessed. Any protection of information should be genuine and justifiable.
9. Staged and post-completion project reviews are undertaken and publicly released.
Delivery dates for reviews are confirmed at the outset of a project. The reviews should focus on whether the project was delivered on time and on budget, measuring whether the economic case for the project (in its business case) was realised over time, whether unforeseen risks emerged and how they were managed, and extracting lessons to feed into future infrastructure development and delivery.
10. Where a project is funded as part of a broader programme, the corresponding decision-making processes are robust and transparent and prioritise value for money.
The objective, scope, scale and expected benefits of a funding programme are defined and reported against clear assessment criteria and objectives. Funding programmes are routinely assessed and reviewed to ensure investments are delivering against their objectives.

Ko tō hoe, ko taku hoe, ka tere te waka e

With your paddle and my paddle, the canoe will travel quickly

New Zealand Infrastructure Commission, Te Waihanga

Source: Kathryn Taylor, Truestock

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National Infrastructure Plan

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