



Government response to **Rautaki Hanganga o Aotearoa** **New Zealand** **Infrastructure Strategy**

September 2022

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Government response to
Rautaki Hanganga o Aotearoa
New Zealand
Infrastructure Strategy

September 2022

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FOREWORD

I am honoured on behalf of the Government to lead our response to *Rautaki Hanganga o Aotearoa*, the *New Zealand Infrastructure Strategy*. I want to thank Te Waihanga, the New Zealand Infrastructure Commission for providing a comprehensive outlook for infrastructure over the next thirty years, and for setting the challenge to the Government to respond.

The Strategy makes very clear the challenges and opportunities that lie ahead for Aotearoa New Zealand in terms of the way our communities develop, how we respond to the existential threat of climate change and how we plan and fund the infrastructure needed for future generations.

Investment in infrastructure has been a priority for our Government. Over the last five years we have invested record amounts in our transport, housing, water, and social infrastructure. In many cases that was simply playing catch-up after decades of under investment. It is vital that sustained and increasing investment continues if we are to make up the deficit and build the infrastructure we need to thrive as a nation. However, as the Strategy points out that will not be enough on its own. We must also make a better job of how we manage, maintain, and use our current infrastructure. We need to be innovative, collaborative, and nimble.

There are opportunities to break down traditional silos when it comes to how we develop a way forward. Wherever you live in New Zealand, be it in cities, towns or rural areas, you need and deserve quality infrastructure. In line with the Government's wellbeing approach, infrastructure cuts across many of the domains, particularly in financial, environmental, and social spheres. This means, for example, an integrated approach to urban development; thinking of housing, transport, horizontal and social infrastructure as a whole. It means efficient planning, competitive land markets and funding and financing tools that are flexible and adaptable to all those involved in the system. In the end, people sit at the heart of making the changes that are needed to deliver on this Strategy.

We will continue to invest in those who make our infrastructure work. The Strategy recognises the role of Māori and the place of Te Tiriti o Waitangi in our future work. It also emphasises the need for long term investment and certainty of a pipeline of work, and the skilled workers needed to make that a reality.

In this response the Government works through in detail each of the recommendations in the report and our response to them. In many cases the Strategy highlights work that is already underway. In others it asks us to go further. The next step will be the development of an Action Plan and Reporting Programme that stakeholders will be able to use to monitor our progress on implementation.

This Strategy is a blueprint for a new and exciting programme of infrastructure work. We look forward to putting it into action with all who are interested in helping build the future shape of our nation.



Hon Grant Robertson
Minister for Infrastructure

OVERVIEW

Government's vision for infrastructure: nation building for the wellbeing of New Zealanders

The Government's vision for infrastructure is that all New Zealanders have the services on which to build their lives, and to thrive and prosper. We know that to do this we have to turn around decades of under-investment, poor planning, failed markets, and siloed thinking.

Strong infrastructure means strong communities. Our social capital as a nation is enhanced by infrastructure that brings us together. We need transport links that allow us to connect with friends, families, and neighbours. Our health and wellbeing require warm, dry houses, that are affordable to buy, and are part of well thought out environments.

We recognise the importance of infrastructure to nation building. Every step our Government takes to improve infrastructure must be taken with future generations in mind. This means a central role for action on climate change. It can no longer be seen as an after-thought to development, but rather as an integrated driver. To meet our climate goals and obligations, intention must give way to action.

Innovation is critical as well. We know we must plan better. For too long New Zealand has failed to put in place the building blocks of competitive land markets, and the range of financing and funding tools that are needed. We have made good progress on that through work on innovative funding and financing, Housing and Urban Development strategies and Resource Management (RM) reform but we know that there is more to do.

Over the course of the last five years, we have taken serious steps to create a new architecture for our infrastructure. This includes establishing Te Waihanga, the New Zealand Infrastructure Commission, to provide leadership and coordination. We have also established the Ministry of Housing and Urban Development and revamped a range of strategies in critical areas such as transport and housing to take a longer term more integrated view. Critical reform is underway in the RM system and Three Waters programmes to underpin this work.

We also recognise that for the many stakeholders in this sector certainty is vital. We simply will not meet the challenges and seize the opportunities in this strategy unless we are collaborating with iwi, local government, the private sector and more. In order to do this, we do need to be clear about priorities, responsibilities and timelines.

Infrastructure supports our economic plan

Infrastructure plays a key role in supporting this Government's economic goal to build a high-wage, low-emissions economy that provides economic security in good times and bad.

Building a secure, high-wage, low-emissions economy requires efficient and resilient infrastructure that provides a consistent level of service and reduces costs for communities, businesses, and individuals. Our infrastructure needs to enhance market access, deliver reliable supply chain links, and provide a strong foundation for future growth and opportunities.

It is important that we have the right number of people trained with the right skills to deliver the infrastructure we need and to support a more productive and resilient workforce. A credible pipeline of infrastructure investments provides certainty for the market to enable it to build and invest, driving innovation and supporting jobs.

Climate change will affect all aspects of our economy. New and existing infrastructure assets will need to be maintained, renewed, and made more resilient so that they can continue to provide value. Responding to climate change impacts like droughts, extreme weather events, increased surface temperatures, and natural disasters such as earthquakes and floods will require us to replace and repair infrastructure over the next 30 years. We will also need to be smarter about where we build to ensure that new infrastructure is built in areas less susceptible to rising sea levels and other climate risks.

We know we need to make better use of existing infrastructure and consider how non-built solutions can meet our infrastructure needs and any shortfalls. We cannot build ourselves out of an infrastructure deficit or a climate crisis. However, by carefully considering how, when and where we do invest, our infrastructure can help us generate fewer greenhouse gas emissions by providing people with choices about the types of places they live in, how they purchase goods and services, where they work, and how they travel. How, when and where we invest in infrastructure shapes our communities and these choices.

Building and construction methods are evolving in response to new technology, innovation, environmental and policy changes, and regulatory settings. We need to ensure these methods continue to enable innovation, and effectively deliver on our infrastructure investments going forward.

Our procurement decisions regarding design, location, materials, and use of new technology and processes, can further enhance sustainability and resilience, reduce environmental impact, and support productivity gains and higher wages for New Zealanders.

Laying the foundations for a better future

Infrastructure is a key enabler of our economy and the wellbeing of New Zealanders.

A well-functioning infrastructure system that provides quality infrastructure assets and services is vital to address the key long-term issues that will shape our future, including climate change, housing affordability, productivity, and child poverty.

Addressing New Zealand's housing crisis is complex and requires long-term term planning and investment in infrastructure to support future population growth and demographic change. Adequate housing supply requires the timely provision of infrastructure, such as transport, energy and communications networks, social and community infrastructure, and public spaces.

The New Zealand population is growing as well as ageing.¹ Our infrastructure will need to accommodate more New Zealanders, support additional health and mobility solutions for an ageing population and provide preferences for more digitally delivered services. Infrastructure supports our goals to address child poverty by delivering built environments that enable equitable and affordable access to essential needs and services such as education, healthcare, and warm, dry homes. Efficient and effective supply chains can help lower the cost of living, and a credible pipeline of infrastructure projects alongside workforce training can support caregivers of our tamariki to enter and remain in employment.

By considering how we design our infrastructure and which technologies to incorporate, we can provide equitable access to services and support better outcomes for all New Zealanders, including those who experience hardship and those who live with disabilities.

¹ The population is expected to reach 6.5 million by 2060, and people aged 65+ are projected to account for more than a quarter of the total population by 2060, compared to 16% in 2020. See: <https://www.treasury.govt.nz/system/files/2021-09/ltfs-2021.pdf>

The economic outlook, opportunities, and challenges ahead

Rautaki Hanganga o Aotearoa, New Zealand Infrastructure Strategy (the Strategy) and the Government response are being delivered in a difficult time for the global economy and for many New Zealanders.

We are currently operating in a challenging environment with inflationary pressures increasing prices amidst global supply chain and labour market constraints. Construction costs are rising rapidly in New Zealand, with residential and non-residential costs rising by more than 10% in 2021. Inflation in the residential and civil construction sectors is now at the highest rates in a decade.² More recently, we have observed rising interest rates across the global economy.

In an environment of rising inflation and interest rates, we need to ensure our investments deliver the infrastructure we need to support productivity and community wellbeing without adding to inflationary pressures.

In the short-term, inflationary pressures, capacity constraints and rising interest rates mean that public infrastructure investment needs to be sequenced and well managed to ensure there is the capacity for these investments to be delivered. As these pressures abate in the medium to longer term, the Government's new debt ceiling will provide fiscal space to fund high quality capital investments that improve productivity and wellbeing.

This Government has already shown its commitment to address New Zealand's infrastructure challenges. We have committed to a further \$61.9 billion of infrastructure investment over the next five years. We will continue to focus our infrastructure investment on projects that support our priority areas, maintain essential services, and provide the greatest value in improving New Zealanders' wellbeing.

New spending is not the only lever available to address our infrastructure needs. The Government has a busy reform programme underway aimed at addressing many of the challenges outlined in the Strategy. This reform programme includes a mix of incremental and transformative policies, and many aspects of these reforms will contribute to the transformation required to achieve the Strategy's 2050 vision.

Current constraints highlight the need for us to ensure our existing reform programmes are delivered well. While there is always more that can be done, there may be constraints on our capacity to deliver more in the short-term.

² Seven percent for civil construction and 8% for non-residential construction, as compared to 14% in the residential construction sector.

See <https://www.tewaihanganga.govt.nz/assets/Uploads/Infrastructure-Quarterly-May-2022-v2.pdf>

RESPONSE TO THE STRATEGY

The Government welcomes the delivery of the Strategy. The Strategy provides us with opportunities to deliver on our economic goals more efficiently and effectively, and raise the living standards of all New Zealanders.

The Government's response to the Strategy is in two parts. This document outlines our direct response to the recommendations in the Strategy and discusses how they will be addressed. Our response indicates 52 of the recommended actions are already underway in full or in part. The Government fully supports 22, supports 21, in principle supports 15, and notes 10 recommendations. Detail on the Government's response to each recommendation is included in the Response to Recommendations section of this document.

The second part of the Government's response will be an action plan and reporting programme for the recommendations in the Strategy. This will be published in the coming months and will allow for ongoing updates on the Government's progress in implementing the agreed initiatives from the strategy. The action plan will identify lead and contributing agencies and entities, and timeframes.

Priority Actions

There is already a busy work programme underway that will address many of the challenges outlined in the Strategy. This work programme includes a mix of incremental and transformative policies, and many aspects will contribute to the transformation required to achieve the Strategy's 2050 vision. Current constraints highlight the need for us to ensure our existing reform programmes are delivered well. The following table summarises the relationship between Te Waihanga's recommendations and many of the Government's existing major programmes.

Work programme	Relevant recommendations
Construction Sector Transformation Plan	30, 34, 38, 61, 65
Digital Strategy for Aotearoa	9, 61, 63
Emergency Management Regulatory Reform	25, 26
Emissions Reduction Plan	4, 5, 6, 7, 11, 29, 32, 33, 34, 36, 37
Future for Local Government Review	14, 39, 47, 49
Future of the Transport Revenue System	48, 55
Immigration Rebalance	64, 65
Minerals and Petroleum Resource Strategy for Aotearoa New Zealand	28
National Adaptation Plan	7, 27
National Freight and Supply Chain Strategy	8
Procurement Reform	61, 65, 66, 67
Resource Management Reform	4, 6, 10, 15, 16, 18, 20, 23, 28, 49, 57, 58, 59, 60
The Congestion Question	21, 22, 48
Three Waters Reform	12, 13, 24, 52
Urban Growth Agenda	51, 53
Waste Minimisation Strategy	29, 30, 31, 32, 33, 34, 35, 36, 37, 52

The Government Response is only part of the contribution to achieving better infrastructure outcomes for New Zealand. The Strategy also expects significant growth and changes from local government, Māori and the private sector in the planning, funding, financing, design, delivery, and maintenance of New Zealand's infrastructure. Central government must partner and collaborate with local government, Māori, and the private sector to support a positive future for New Zealanders over the next 30 years.

The Government will prioritise delivering on its existing commitments well

The last three Budgets and the COVID-19 response have seen a significant increase in the Government's infrastructure investment programme to support our response to COVID-19 and address the infrastructure deficit. The Government has committed to investing \$61.9 billion in the creation, renewal, and maintenance of infrastructure over the next five years. This includes our transport, water, health, defence, and education facilities. There is significant further private investment in infrastructure on top of that – such as in telecommunications and energy. We need to deliver this investment well to ensure that it achieves the outcomes we want.

There is still more we can do to improve the way we plan, deliver, and use our infrastructure

Inevitably we must continue to invest more in infrastructure; however, we also can be smarter about the way we plan, deliver, and use our infrastructure. This means getting more from the infrastructure we do build, reducing costs, and prioritising for the greatest impact. The existing work programme will help us do this. It partially or fully addresses at least 52 of the 68 recommendations in the Strategy. This involves the development and passing of transformative legislation, regulation and policies over the next five years, and the implementation of visionary strategies and plans. The Government will also continue to make incremental improvements to the system over the next five years and beyond.

Strengthening partnerships is inherent in many parts of our work programme. However, there are clear steps we can take to enable a more coordinated and strategic approach to strengthening partnerships with, and opportunities for, Māori. In addition, there are some actions we can take in the short-term to build the capacity and capability of the Government and of the infrastructure workforce to deliver and maintain infrastructure. These will support future initiatives, and our existing commitments and work programme, to achieve our goals in the medium to longer term.

We will continue to explore other options to progress actions in the medium to long term to:

- making improvements to decision-making and governance processes
- encourage the expansion of technology use
- strengthen our planning and consenting frameworks.

RESPONSE TO RECOMMENDATIONS

How to interpret the responses

The Government's position on each recommendation is categorised into one of four groups:

- **Supported in full:** when the Government is already addressing the recommendation, has already agreed to address it, or when it can be addressed within baselines and the Government supports it.
- **Supported:** when the Government supports the recommendation and is already addressing or has agreed to address at least part of the recommendation, but may not address another part (for example, because a decision to go in a different direction has already been made).
- **Supported in principle:** when the Government supports the intent of the recommendation, but further consideration is required to identify the best way forward. Further work may reveal that the best solution differs to the Strategy's recommendation, or that other priorities should be delivered first.
- **Noted:** when the Government acknowledges the recommendation but either does not support addressing it or it is a lower priority than other work happening to achieve similar outcomes.

The Government's position is supported by a short discussion that provides reasoning for the position and some examples of the relevant work the Government is doing. This is supplemented by a status that indicates whether the Government is already doing work to address the recommendation, further consideration is required to address the recommendation, or the recommendation will not be addressed.

Strengthening partnerships with and opportunities for Māori

0 <i>Supported in full</i>	2 <i>Supported</i>	1 <i>Supported in principle</i>	0 <i>Noted</i>
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Recommendation 1 Strengthen partnerships with Māori across the infrastructure system of Aotearoa New Zealand

Recommendation description

- 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.

Government Position

Supported, subject to decisions on recommendation 1b

Discussion

The Government supports the intent of this recommendation.

Partnership with Māori across the infrastructure system is a fundamental enabler of equitable outcomes and a key part of our commitment to Te Tiriti o Waitangi. This Government is currently leading several major reform programmes that aim to reduce inequities in New Zealand, but we recognise that engagement with these programmes places a significant burden on iwi and Māori resources, time, and personnel. Continuing to strengthen and develop the infrastructure system will require efficient and effective partnership with Māori that engages with the right people at the right time in the right way.

- a A 'State of Play' of current Māori engagement activity will support both sides of the partnership to engage where it is most important. Te Waihanga plans to undertake this work across 2022 and 2023.
- b Developing a framework for strengthening partnerships in the infrastructure system could enable better partnerships going forward, and engaging a Māori advisory group to support the development of the framework would provide the opportunity to receive direct and helpful feedback on how infrastructure impacts Māori interests, and the best way to partner. The Government has already developed several frameworks for partnering with Māori, including the Partnership Principles that Cabinet approved for agencies to use in forming partnerships with Māori.

The Government will consider the establishment of a Māori advisory group following the completion of the State of Play.

Status

Underway in part

Recommendation 2 Develop capabilities and capacity across the infrastructure system for effective partnerships with Māori

Recommendation description	<p>Put in place a programme to develop capabilities and capacity for effective partnership that should:</p> <ul style="list-style-type: none"> a Build specialist Māori infrastructure capabilities at the centre of government that can support agencies and Māori. b Consolidate and enhance specific funding for the 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.
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Government Position	Supported, subject to completion of the State of Play
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Discussion	<p>The Government supports the intent of this recommendation.</p> <p>Meaningful partnership with Māori requires both sides of the partnership to have appropriate capabilities and capacity. In the public service, these capabilities include infrastructure-specific capability and cultural capability that enables us to be tika in the way we engage.</p> <ul style="list-style-type: none"> a We are implementing several Māori Crown relations capability initiatives across the public service, including Whaingā Amorangi and the Māori Crown Relations Capability Framework. b To support iwi and Māori to partner with the Crown, we have several programmes. For example, the MAIHI Partnership Programme makes it easier for hapū, iwi and Māori housing providers to find and access the funding and support that's available for Māori-led housing projects. Whai Kāinga Whai Oranga can also provide investment, including for increasing organisational capability and capacity to delivery Māori-led housing solutions. <p>c and d The Government will explore these sub-recommendations following the completion of the State of Play.</p> <p>The specific recommendations in Te Waihanga's strategy will need further consideration to determine whether they are the most effective ways to develop the right capabilities and capacity for effective partnership, and who should lead the implementation. The proposed State of Play will also inform consideration of these options going forward.</p>
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Status	Underway in part
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Recommendation 3 Strengthen the Māori infrastructure evidence base

Recommendation description	<p>A collaborative multi-decade research agenda should be designed that:</p> <ul style="list-style-type: none"> 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).
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Government Position	Supported in principle
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Discussion	<p>The Government supports the intent of this recommendation.</p> <p>Robust evidence is important in all decisions, and the Government recognises that the differing outcomes required for Māori, such as reducing inequities and enabling rangatiratanga, need a different evidence base to support us to progress towards them.</p> <p>a and b While there is not currently a formal research agenda for infrastructure, the Government continues to build this evidence base. For example, Te Matapihi the independent national body for Māori housing has several ongoing research projects and case studies projects. In addition, the Ministry of Housing and Urban Development plans to disseminate case studies of successful sustainable building programmes supported by MAIHI Ka Ora. The Government is open to exploring a more formalised research agenda, and any such agenda should be aligned with Te Ara Paerangi – Future Pathways and prioritise research according to transparent criteria.</p> <p>c The Government uses many frameworks to help guide analysis and advice, and, as Te Waihanga highlights in the recommendation, any assessment of the impacts of infrastructure needs to take localised differences into account. For example, He Ara Waiora is a framework that helps the Treasury to understand Waiora, providing a basis for understanding the impacts on Wairua, Te Taiao and Te Ira Tangata. It is getting progressively incorporated into the Budget process.</p>
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Status	Underway in part
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A thriving New Zealand: what we need to do

11 <i>Supported in full</i>	11 <i>Supported</i>	8 <i>Supported in principle</i>	4 <i>Noted</i>
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Recommendation 4 Minimise lock-in of future emissions

Recommendation description

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 assessments 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.

This should be cross-sector and reviewed regularly.

Government Position Supported

Recommendation 4 Minimise lock-in of future emissions

Discussion

The Government supports the intent of this recommendation. Our Emissions Reduction Plan (ERP) makes clear that our investment programmes aim to be compatible with our international commitments on carbon emissions, and highlights the actions we can take to continue to improve and develop the systems that enable us to achieve this.

a and c The ERP highlights the need to embed emissions reduction in resource management frameworks, improving the evidence base for understanding how delivering infrastructure can reduce emissions, and integrating climate mitigation into government decisions on infrastructure respectively.

b and d The ERP includes the ongoing evolution and improvement of guidance, guidelines and tools, including the Better Business Case process, to ensure they consider climate outcomes like whole-of-life carbon emissions and the consideration of non-built solutions. It also highlights the ongoing improvements the Treasury is making to the CBAX tool, including the recent addition of shadow emissions values. For each proposed initiative, these reflect the anticipated cost of emissions, or benefit of emissions avoided or reduced, in the context of our 2050 targets and emissions budgets.

e Initiatives like the Building for Climate Change Programme run out of the Ministry of Business, Innovation and Employment are developing methodologies to assess the embodied and operational emissions in new buildings. These aim to provide valuable information to enable the measurement of the carbon impacts of construction materials.

f The Government will continue to review and develop regulations.

In addition, the Climate Change Commission will take these recommendations into consideration as it prepares its next advice to the Government on the emissions reduction plan for the second emissions budget.

StatusUnderway

Recommendation 5 **Achieve net-zero carbon emissions at minimum cost****Recommendation description**

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 should:

- 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.

Government Position

Supported in principle

Discussion

The Government supports the intent of this recommendation.

The Aotearoa New Zealand Energy Strategy will help set the direction for our pathway away from fossil fuels and towards greater levels of renewable electricity and other low emissions alternatives. The vision is that by 2050, Aotearoa has a highly renewable, sustainable, and efficient energy system that is accessible and affordable, secure and reliable, and supports New Zealanders' wellbeing.

This recommendation is well aligned with several actions in the Emissions Reduction Plan (ERP), which sets a target for 50% of total final energy consumption to come from renewable sources by 2035, building on the Government's aspirational target of 100% renewable electricity by 2030. In addition to the numerous energy-related actions in the ERP like developing a gas transition plan by the end of 2023, the Commerce Commission are undertaking several reviews, including of methodologies and requirements applying to regulating electricity distribution and gas pipeline businesses.

The Electricity Authority has work underway with the aim of ensuring the right regulatory settings are in place to promote competition and access to the distribution network and unlock the potential of distributed energy resources. This includes removing barriers to demand management, distributed generation and improving access to smart meter data. The Electricity Authority's work to achieve better transmission and distribution pricing signals will help ensure the transition to low emissions is as efficient as possible, supporting the lowest overall cost to consumers.

Status

Underway

Recommendation 6 **Speed the build of low-emissions energy infrastructure to leverage our abundant resources**

Recommendation description 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.

Government Position Supported in full

Discussion The Government supports this recommendation.

Aotearoa will need to generate more electricity from existing and new low-emissions technologies if we are to transition to a low-emissions energy system.

a and c The Emissions Reduction Plan directly addresses these sub recommendations.

b Resource Management Reform seeks to streamline planning and consenting not just through the Natural and Built Environments Act, but also through the Spatial Planning Act, the National Planning Framework, and new designations frameworks.

Status Underway

Recommendation 7 **Ensure a fair, inclusive and equitable transition to a low-emissions economy**

Recommendation description	<p>Target support to those disproportionately affected in the transition by:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported
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Discussion	<p>The Government believes that a fair, inclusive and equitable transition is important for all New Zealanders. The Emissions Reduction Plan (ERP) lays out the actions and objectives that will enable us to achieve this.</p> <p>Under the ERP, Government has committed to develop an Equitable Transitions Strategy that aims to deliver a well-signalled and inclusive transition, so it maximises opportunities and minimises disruption and inequities. A draft of this Strategy will be delivered by 30 June 2023, with the final delivered prior to June 2024.</p> <p>The Government has signed the <i>Supporting the Conditions for a Just Transition Internationally</i> declaration. This includes commitments to support vulnerable groups to transition away from carbon intensive activities, implement skills development and labour market policies that allow workers to shift into decent jobs in low-emissions sectors, and supports and promotes stakeholder engagement. A key aspect of the just transition is to uphold Te Tiriti o Waitangi and work in partnership with Māori to maximise opportunities and avoid disproportionately affecting Māori or locking in existing inequalities.</p> <p>The principle to promote equity guided the development of the National Adaptation Plan (NAP), and as the Government implements the actions in the NAP we will collaborate in partnership with iwi, hapū, Māori, and all New Zealanders.</p> <p>In the education sector it has been recognised that training and retraining will be a core component of supporting the transition. As an example Waihanga Ara Rau, the Construction and Infrastructure Workforce Development Council, has a specific duty to take into account 'the transition to a low-emissions and climate-resilient New Zealand'.</p> <p>The Ministry of Business, Innovation and Employment has established a Just Transitions Unit to help share and coordinate the work of transitioning New Zealand to a low emissions economy. A key focus of a Just Transition in New Zealand is to ensure that regions are activated and supported to plan and manage the social, economic, and environmental impacts of a transition.</p>
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Status	Underway
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Recommendation 8 Improve efficiency and security of freight and the national supply chain

Recommendation description	<p>In developing a long-term National Freight and Supply Chain Strategy, the Government should:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in full
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Discussion	<p>The Government fully supports this recommendation.</p> <p>The Ministry of Transport is developing a national freight and supply chain strategy that will address the entirety of this recommendation.</p> <p>An 'issues paper' that outlines the key strategic challenges was released for consultation in April 2022. The 30-year strategy will inform investment decisions and focus on decreasing emissions and increasing resilience, productivity and innovation, and equity and safety. A draft policy strategy is planned to be released for further consultation in 2023, followed by a phased work programme for detailed planning and delivery between 2023 and 2026.</p>
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Status	Underway
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Recommendation 9	Reduce barriers to and costs of providing infrastructure services
Recommendation description	<p>In developing a National Digital Strategy, the government should:</p> <ul style="list-style-type: none"> 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. <p>Review standard infrastructure requirements for affordability across regions and infrastructure sectors. Broaden requirements to allow for on-site solutions and other low-cost design when similar service levels are possible.</p>
Government Position	Supported
Discussion	<p>The Government supports the intent of this recommendation.</p> <ul style="list-style-type: none"> a We have a vision that Aotearoa New Zealand’s people, communities, economy, and environment are flourishing and prosperous in the digital era – good digital infrastructure is needed to get us there. That’s why we are developing a Digital Strategy for Aotearoa that is built around mahi tika (trust), mahi tahi (inclusion) and mahi ake (growth). We intend to publish the Digital Strategy for Aotearoa in 2022. The Strategy will set out specific goals and measures of success and will span issues including digital and data infrastructure and connectivity across Aotearoa; jobs and skills; innovation; online safety and confidence; and the growth of the tech sector. b The Future of Connectivity work programme includes several programmes like the Rural Broadband Initiative, the Mobile Blacks Spots Fund, Marae Digital Connectivity, Regional Fibre Links and Rural Capacity Upgrades (RCU). In Budget 2022, the Government allocated \$60 million to extend programmes like the RCU and to introduce the new Remote User Scheme to provide grants for new coverage in remote areas where end users do not currently have access to broadband services. c Further consideration is required to identify how this could be progressed. d The Government is progressing reform of the critical national infrastructure regime. This reform aims to improve the resilience of the system, including telecommunications and potentially other digital services. In addition, the Ministry for Business, Innovation and Employment is supporting the Minister for the Digital Economy and Communications to identify critical resilience risks. e The Government is progressing work on a Digital Identity Services Trust Framework to promote the provision of secure and trusted digital identity services that meet essential minimum requirements for security, privacy, identification management and interoperability.
Status	Underway in part

Recommendation 10 Reduce population uncertainties for infrastructure demand, planning and delivery

Recommendation description 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.

Regularly review and publish best-practice advice to improve population projection accuracy.

Require local governments and other public infrastructure providers to test significant infrastructure projects and investment plans against high, medium and low projections.

Government Position Noted

Discussion The Government supports the intent of this recommendation.

Population level, growth, volatility, composition, and distribution will have a huge bearing on infrastructure decisions into the future. We know that our supply of infrastructure is less responsive to population growth now than in the past and certainty, or at least consistency, in population assumptions could drive better decision-making.

Demographic data, including population forecasts, is used by the public sector and illustrates the potential value of estimating future demand for infrastructure. The Ministry of Education, for example, uses population projections in the National Education Growth Plan.

Status Further consideration required

Recommendation 11 Prepare for zero-emissions commercial electric flights and unmanned aircraft

Recommendation description	<p>Prepare existing airport infrastructure for zero-emissions commercial electric flights and leverage wider export opportunities. Measures will need to:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported
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Discussion	<p>The Government supports the intent of this recommendation.</p> <p><i>Hikina te Kohupara</i> sets out potential pathways and policies to phase out emissions across the transport system, including in support of electric aircraft, and technology development and use. Progress in this area will support our regional economies and enable us to take advantage of opportunities. There is already work underway that addresses most of this recommendation.</p> <ul style="list-style-type: none"> a Like other emerging aviation technology, changes are likely to be required to civil aviation rules, and corresponding guidance material, to support use of electric aircraft in New Zealand. The Government will continue to review and update rules, guidance and training as needed. b, c and d A national EV-charging infrastructure strategy, which includes airports, is being developed as part of the Emissions Reduction Plan. <i>Hikina te Kohupara</i> sets out potential pathways and policies to phase out emissions across the transport system, including in support of electric aircraft, and technology development and use. e There is little demand to investigate export-ready applications, but the Government will remain open to exploring these options should they develop. f The Government is updating the regulatory framework that applies to drones. The aim is to integrate drones into the civil aviation system to maintain safety and security while enabling the economic, environmental, and social benefits of this technology to be maximised. A package of initiatives will be implemented over the next five years.
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Status	Further consideration required
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Recommendation 12 Improve water infrastructure pricing and provision in cities

Recommendation description	<p>The water, wastewater and stormwater sector should be reformed, including by:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in full
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Discussion	<p>The Government supports the intent of this recommendation.</p> <p>Appropriate water infrastructure pricing and provision will enable all New Zealanders to enjoy safe, affordable, and sustainable drinking water, wastewater, and stormwater services now and into the future.</p> <p>The Three Waters Reform programme aims to address this recommendation. It proposes a major change to ownership and governance arrangements, which involves consideration of the way three waters will be funded and financed. The establishment of four new publicly owned Water Service Entities to replace the services currently managed by 67 councils will enable more consistent and higher quality planning and provision across the country.</p>
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Status	Underway
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Recommendation 13 **Reduce pressure on water infrastructure through better water management and conservation**

Recommendation description 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.

Government Position Noted

Discussion The Government supports the intent of this recommendation.

Our water infrastructure is under pressure, which is why we are currently undertaking the Three Waters Reform. This reform proposes major changes to the ownership and governance arrangements for drinking water, wastewater, and stormwater, creating four publicly owned water entities for the benefit of all New Zealanders.

- a and b The specific steps that Te Waihanga has recommended have so far been out of scope of the reform programme, which is making ambitious improvements to the water infrastructure system.
- c Performance standards for appliances that use water are already in place.

Status Not considering

Recommendation 14 **Realign local government boundaries, where appropriate, to improve coordination of infrastructure and planning outcomes**

Recommendation description	<p>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:</p> <ul style="list-style-type: none"> 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.
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Government Position	Noted
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Discussion	<p>The merits of boundary changes are an element that will be considered as part of the Review into the Future of Local Government. A draft report is due from the review panel in October 2022. Any actions relating to this will be considered through the associated government response.</p> <p>In relation to achieving some of the desired outcomes of this recommendation, the new Resource Management system will look to improve the coordination of key infrastructure and planning decisions across existing local government boundaries. Regional Spatial Strategies (RSS) developed under the Spatial Planning Act will better enable the coordination of infrastructure across district and city council boundaries within a region, as well as ensuring RSS are consistent in the way they address infrastructure that crosses regional boundaries.</p>
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Status	Further consideration required
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Recommendation 15 **Increase the supply and use of low-emissions transport modes****Recommendation description**

Transport network planning and funding entities 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.

Government Position

Supported in full

Discussion

This recommendation is well aligned with the Government's goal for a high wage low emissions economy. This recommendation covers a wide range of areas where the Government is already progressing a significant amount of work.

This work includes improving the reach, frequency, and quality of public transport, and considering what kind of public transport is suitable for different places in New Zealand. In our largest cities, mass rapid transit will be important, as this can contribute to transformational change. For other cities, high frequency bus services will be more appropriate. For smaller towns and rural areas, other forms of public transport might be more suitable, such as on-demand services. The Government Policy Statement on Land Transport is the main lever for setting the strategic direction on investment in the land transport system, and the wider strategic direction continues to evolve as the Government makes further developments through Resource Management Reform, invests through the Climate Emergency Response Fund, and implements the Emissions Reduction Plan.

Status

Underway

Recommendation 16 **Reduce costs by optimising infrastructure corridors**

Recommendation description	<p>Enable the planning and protection of infrastructure corridors in advance of growth through the following steps:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported, subject to further work on recommendation 16c
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Discussion	<p>The Government supports this recommendation and continues to take steps to optimise our infrastructure corridors.</p> <p>Optimising infrastructure corridors improves the value for money of our infrastructure not only by reducing costs but also by generating further benefits that improve the flow of goods and services between our cities, regions, and the world.</p> <ul style="list-style-type: none"> a Resource Management Reform takes us in the direction of this recommendation, stepping us towards enabling the planning and protection of infrastructure corridors. In the new system, lead infrastructure should be identified as part of Regional Spatial Strategies under the Spatial Planning Act, and a method to fund corridors will need to be considered as part of the implementation of that Act and as part of the Budget process. b Designations will expire after 10 years if not given effect to (as opposed to 30). c The Government recognises that securing future corridors and sites has the potential to improve certainty and reduce costs by insulating against future land price rises and hold outs. We will identify how this recommendation could be progressed and whether a specific fund is the best avenue to address this issue.
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Status	Underway in part
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Recommendation 17 **Optimise the use of urban land**

Recommendation description	Review central and local government land holdings to identify opportunities for land swaps, releases of land for development and relocations of major public facilities.
Government Position	Supported in full
Discussion	<p>The Government supports taking a strategic and co-ordinated approach to landholdings.</p> <p>Reviews of public landholdings have been undertaken in the past, such as a review of public land in Auckland by Land Information New Zealand (LINZ) in 2009. LINZ has also developed a Central Record of State Land prototype that should help to identify all government land in New Zealand. In addition, the Land for Housing Programme, and the Kainga Ora Land Programme both have a mandate to engage with landholding agencies to explore opportunities for urban development, though landholding agencies need to be willing to engage.</p>
Status	Underway

Recommendation 18 **Improve the efficiency and consistency of urban planning by standardising planning rulebooks**

Recommendation description	<p>Standardise the planning policies of regional and district plans. This should:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported
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Discussion	<p>Resource Management Reform proposed legislation addresses the specific steps in this recommendation.</p> <p>Improving efficiency and consistency supports the development of our urban development and takes us towards more attractive and inclusive cities that build New Zealand's wealth and New Zealanders' wellbeing.</p> <ul style="list-style-type: none"> a National uniform definitions for land use policy already exist in the National Planning Standards, and they are being reviewed for integration into the National Planning Framework (NPF) in the new resource management system. b The NPF will provide a consistent framework for the development of Regional Spatial Strategies and Natural and Built Environments Act plans while allowing for appropriate flexibility for local decision makers to ensure strategies and plans are fit for purpose in their locality. c The Government recognises the need to make provisions for papakāinga housing on Māori land and are investigating how this could be incorporated into the resource management system. d Resource Management Reform aims to shift from having more than 100 regional and district plans to around 14 combined plans across the country. A system with a smaller number of plans and a greater focus on regional strategic planning should improve consistency and efficiency.
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Status	Underway
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Recommendation 19 Improve delivery of transit-oriented development (TOD)

Recommendation description	<p>Undertake post-implementation reviews of recent transit-oriented development (TOD) opportunities. These reviews should:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in principle
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Discussion	<p>Transit-oriented development (TOD) is an important aspect of infrastructure that the Government is exploring. It continues to investigate improvements to the way TOD opportunities could be delivered. Post-implementation reviews will provide useful insights and recommendations as TOD opportunities are realised and will improve the delivery of future TOD opportunities. Waka Kotahi has commissioned several studies to identify international best practice for TOD, which are due to be completed in late 2022.</p>
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Status	Underway
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Recommendation 20 **Improve the efficiency and outcomes of infrastructure through spatial planning**

Recommendation description	<p>Resource Management Reforms should include requirements for regional spatial plans that:</p> <ul style="list-style-type: none"> 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.
Government Position	Supported, subject to the passing of the Natural and Built Environments Act and the Spatial Planning Act
Discussion	<p>Resource Management Reform proposed legislation addresses the specific steps in this recommendation.</p> <ul style="list-style-type: none"> a Regional Spatial Strategies (RSS) will provide clear direction for plans. Plans will need to be consistent with the strategic direction and formally explain any decision that departs from the RSS and local government Long Term Plans. The RSS and plans will be agreed by Spatial Planning Act (SPA) committees, for which the governance arrangements are currently being developed. b The Government recognises the need for SPA committees to include representation from Māori and central government. Central government infrastructure providers should also feed directly into the development of RSS. c and d In the RSS themselves, it is required that future infrastructure requirements are identified, and growth scenarios are tested. The Resource Management system will build on the progress made through the National Policy Statement for Urban Development and Medium Density Residential Standards, which include requirements for cities and regions to provide for growth. Further work will be undertaken by the Ministry for Housing and Urban Development and the Ministry for the Environment (with oversight from the interdepartmental board) to develop National Planning Framework content and consider options for development capacity.
Status	Underway

Recommendation 21 Reduce congestion and improve urban mobility

Recommendation description	<p>Implement congestion pricing and road tolling in urban centres by:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported
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Discussion	<p>The Government supports the need to reduce congestion and improve urban mobility.</p> <p>Congestion charging has the potential to reduce congestion of the road network, which would lead to reduced emissions and improvements in other areas of wellbeing.</p> <ul style="list-style-type: none"> a, c, and d Auckland Transport is progressing design work for a congestion charging scheme based on the recommendations of <i>The Congestion Question</i>, and some other cities are exploring the potential of congestion charging. b The Ministry of Transport is developing a policy framework for legislation to enable congestion charging, but there is currently no work underway to reassess the legislative barriers to road tolling. Equity will be considered as a core part of this work. e Further work is necessary to determine the costs and benefits of setting up an independent agency to set and adjust prices. Decisions would need to consider the protection of local accountability and whether an independent agency is the most efficient way to support better outcomes being achieved.
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Status	Underway in part
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Recommendation 22 **Target transport investment to areas of highest need using signals from congestion pricing**

Recommendation description Share and use data and pricing signals from congestion charging to identify where future multi-modal transport investment is needed.

Government Position Noted

Discussion

The Government supports targeting transport investment to areas of highest need.

A wide range of information is used to assess investments, and this is interpreted through appropriate tools and frameworks. Some examples include the Early Assessment Sifting Tool, the Appraisal Summary Tool and CBAX. The data and pricing signals from congestion charging provide one part of a suite of evidence that could be used.

In addition to the value of using data within government to inform investment decisions, sharing data collections aligns with New Zealand’s continued commitment to open data.

Status Further consideration required

Recommendation 23 Increase housing development opportunities in areas with good access to infrastructure

Recommendation description	<p>Improve development opportunities in areas already well served by infrastructure by:</p> <ul style="list-style-type: none"> a Accelerating the 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 (eg, 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. e Adopting independent hearings panels to review district plan changes.
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Government Position	Supported in principle
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Discussion	<p>The Government is committed to ensuring New Zealanders have safe, warm, dry and affordable homes.</p> <p>Improving housing development opportunities in areas already well served in infrastructure will ensure we deliver the greatest benefits to New Zealand's housing and urban land markets. The National Policy Statement on Urban Development (NPS-UD) and the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act (Amendment Act) will significantly increase housing development opportunities in areas with good access to infrastructure.</p> <ul style="list-style-type: none"> a and b The NPS-UD intensification policies explicitly require development to be enabled in areas that are in high demand with good accessibility, which will enable infrastructure to be used efficiently. The Amendment Act introduced a new streamlined planning process so tier 1 councils can implement the changes required by the NPS-UD from August 2023, at least a year earlier than expected. It also required tier 1 councils to make most residential areas medium density. The Medium Density Residential Standards are expected to work similarly to the NPS-UD by facilitating infill development and encouraging efficiencies. c The NPS-UD and the Amendment Act introduce robust evidential requirements for proposals and to restrict development through plans. This will ensure that the preservation of subjective preferences does not outweigh the need for development. d Housing and Business Capacity Assessments and housing bottom lines set binding targets for increased housing and business capacity commensurate with future growth expectations. e Independent hearings panels were required for intensification plan changes that were notified this year and will be required to hear submissions on Natural and Built Environment Act plans and plan changes in the future Resource Management system.
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Status	Underway
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Recommendation 24 **Improve spatial planning through better information on infrastructure capacity and costs to service growth**

Recommendation description	<p>Improve information on the infrastructure cost implications of different growth possibilities by:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in principle
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Discussion	<p>Improving the information base provides significant benefits to decision-making, strategy development, place-based approaches to climate change adaptation, and addressing local housing needs.</p> <ul style="list-style-type: none"> a Te Waihanga intends to begin reviewing existing information and models in 2023. b and c The Three Waters reforms plan to establish Water Service Entities that will have their own data, information, and asset management plans. This will enable them to plan for the long-run infrastructure costs associated with servicing growth in different locations. <p>Further work will be done to determine how spatial models can be used in the implementation of the Spatial Planning Act and the Natural and Built Environments Act.</p>
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Status	Underway in part
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Recommendation 25 Increase the resilience of critical infrastructure

Recommendation description	<p>To increase the resilience of critical infrastructure the government should:</p> <ol style="list-style-type: none"> 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 to identify minimum service levels 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.
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Government Position	Supported in full
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Discussion	<p>The Government supports the intent of this recommendation and is progressing two separate but related work programmes to deliver on it. This includes the reform of the Civil Defence Emergency Management (CDEM) Act, as part of the Government's 'Trifecta Programme', and a longer-term programme considering whether the government's existing regulatory approach to building critical infrastructure resilience is fit-for-purpose.</p> <p>a and b As part of the proposed reforms of the CDEM Act, the Government proposes to introduce legislation in late-2022 that will move from the concept of 'lifeline utilities' towards a definition of critical infrastructures. These are, in general terms, to be defined as the essential and enabling assets, systems, networks and services that support New Zealanders' wellbeing, now and into the future.</p> <p>d CDEM's minimum resilience requirements would then apply to all entities that satisfy this definition (which would be identified in a legislative instrument), with these entities also required to provide regular updates on their Planned Emergency Levels of Service.</p> <p>Building on the CDEM reforms and given emerging risks like climate change and a more complex geostrategic and economic environment, the Government has separately tasked agencies with considering whether more fundamental changes are required to guarantee critical infrastructure resilience. This will involve consideration of matters like:</p> <ul style="list-style-type: none"> • whether existing minimum standards for critical infrastructures are appropriate, and/or more critical infrastructures (for example, those with significant connections to other infrastructures or with high economic or security importance) should be subject to higher standards • whether information sharing between infrastructures and government on hazards and threats needs to be enhanced • where agency responsibilities for the resilience of the critical infrastructure system lie (and if they are adequately funded) • the Government expects to begin consultation on the potential limitations of our current regulatory approach to ensuring infrastructure resilience in the first half of 2023.
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Status	Underway
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Recommendation 26 **Improve infrastructure risk management by making better information available**

Recommendation description	<p>To make better information available to support risk management steps should be taken to:</p> <ul style="list-style-type: none"> a Require regular disclosures of information about critical infrastructure preparedness and minimum levels of service in an emergency. b Resource the maintenance, upkeep and availability of research, information, datasets, and tools to support decision-making that enables resilience outcomes.
Government Position	Supported in full
Discussion	<p>The Government supports enabling the use and sharing of better information to support risk management. Disclosure and reporting are essential aspects of risk management that provide transparency and accountability.</p> <ul style="list-style-type: none"> a Part of the reform of New Zealand’s Emergency Management Legislation includes proposals for reporting on emergency levels of service for critical infrastructure. In addition to this, the Climate Change Response Act allows the Minister for Climate Change to request disclosure of how organisations providing essential services are preparing for the impacts of climate change. b Resourcing research and maintaining information, datasets and tools will provide a solid base for good decision making. Land Information New Zealand (LINZ) is a key part of this, ensuring that key resilience datasets are fit for purpose and openly available. The Government also maintains models, datasets, and tools through other entities, including the National Seismic Hazard Model, GeoNet and RiskScape. We continue to maintain and improve these systems, and the support for core science services is being investigated through Te Ara Paerangi – Future Pathways. <p>In addition to the centrally managed data, agencies responsible for relevant critical infrastructure maintain their own policy tools, datasets, and guidance to enable decision makers to achieve resilience outcomes.</p>
Status	Underway

Recommendation 27 **Prepare infrastructure for the impacts of climate change**

Recommendation description	<p>To adapt to climate change, actions should be taken to:</p> <ul style="list-style-type: none"> a Finalise and adopt the infrastructure actions set out in the National Adaptation Plan (NAP). b Support the provision of accessible, consistent, and robust information on regional and local climate change impacts across the whole country.
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Government Position	Supported
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Discussion	<p>The Government supports the preparation of infrastructure for the impacts of climate change and has already made large steps towards this with the recent publication of the NAP.</p> <ul style="list-style-type: none"> a The NAP was finalised in August 2022. It sets out actions that will ensure our planning, infrastructure and decision-making frameworks guide us towards climate resilient development and accounts for changing risks such as exposure to sea-level rise and flooding. Over the coming years the Government will adopt these actions in line with the NAP. b The research strategy in the NAP prioritises making robust information accessible so that it can be used.
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Status	Underway
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Recommendation 28 **Support the security of supply of essential materials, goods, and services to build, operate and maintain infrastructure**

Recommendation description	<p>To increase the resilience of supply of essential materials, steps should be taken to:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported
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Discussion	<p>The Government supports the intent of this recommendation.</p> <p>Taking steps to ensure we have supply of essential materials for building, renewing, operating, and maintaining infrastructure will help strengthen our resilience to shocks and stresses. There are several workstreams relating to supply changes underway. For example, the Ministry of Foreign Affairs and Trade has led work to strengthen New Zealand supply chain resilience in light of the COVID-19 pandemic. Te Manatū Waka, the Ministry of Transport has also led domestic work on supply chains focused on the state of play of the system, shipping disruptions and the shortage of labour.</p> <ul style="list-style-type: none"> a Improving understanding of the demand and supply of aggregates is a key action under the <i>Responsibly Delivering Value: A Minerals and Petroleum Resource Strategy for Aotearoa New Zealand: 2019-2029</i>. The Government has also shown its ability to be agile by setting up the plasterboard taskforce to address the critical supply issues regarding plasterboard. b Resource scans could be incorporated into the Regional Spatial Strategy process, and major sites identified protected in Natural and Built Environments Act Plans. This would support the planning process to effectively consider the environmental effects of different sources. Further work is needed to determine whether this is the appropriate step and how it could be incorporated.
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Status	Underway in part
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Recommendation 29 **Establish a clear national direction for circularity in waste management**

Recommendation description	<p>In developing a National Waste Strategy, provide appropriate direction that:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in full
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Discussion	<p>The Government supports this recommendation. Moving to a circular economy with a thriving bioeconomy is essential to meeting our emissions budgets and our 2050 emissions targets, and will create new opportunities, drive innovation, and reduce the amount of waste we produce. This is a pillar of the Emissions Reductions Plan, with key actions like investing in data collection and research, and establishing a circular economy and bioeconomy strategy. This strategy will aim to align with the Waste Strategy that was consulted on in 2021 and is due for release in 2022. The Waste Minimisation Strategy will provide direction for New Zealand to push towards a low-waste Aotearoa, and has aspirational targets for waste, waste emissions and litter. It recognises that well-functioning markets are an essential part of an effective waste system.</p>
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Status	Underway
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Recommendation 30 **Prioritise options that minimise waste entering the market to avoid unnecessary infrastructure costs**

Recommendation description 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.

The prioritisation of these options should be guided by cost-benefit analyses.

Government Position Supported in full

Discussion The Government fully supports this recommendation.

Reducing waste from entering the market will be a key driver to reduce the burden on waste infrastructure and achieve our waste goals. The in-development Waste Minimisation Strategy proposals put an emphasis on rethinking and redesigning to avoid waste being created. This recommendation highlights several levers that we are already pulling.

- a The Ministry for the Environment is currently progressing bans for three tranches of products between 2022 and 2025. These bans will target hard-to-recycle plastic packaging types and six single-use items. Bans can have massive impacts: when single-use plastic shopping bags were phased out in 2019 we estimate that approximately 1 billion bags were removed from the system each year. We estimate that an additional 2 billion problematic products per year will be removed from the waste system as the upcoming bans are rolled out.
- b A ban may not always be the most appropriate lever to pull. Tyres, electrical and electronic products, agrichemicals and their containers, large batteries, refrigerants, and plastic packaging have been declared priority products, for which product stewardship schemes are being designed. Some of these have completed the co-design phase, and the Ministry for the Environment is working on implementation. These schemes will drive better regulations to minimise the waste from these products and better disposal of the products – potentially driving the ingenuity that the Infrastructure Strategy highlights.
- c The Waste Disposal Levy has been increasing and expanding in recent years and is set to expand further. The number of regulated parties is planned to potentially increase from around 36 municipal landfill sites to over 600 sites.

In addition to the waste-centric programmes, the *Construction Sector Transformation Plan 2022-2025* includes goals and initiatives to reduce waste in the construction sector. It aims to accelerate the adoption of carbon and waste minimising materials and practices, and work to ensure that research efforts are targeted.

Status Underway

Recommendation 31 **Improve recycling infrastructure for priority materials**

Recommendation description	<p>Options should include:</p> <ul style="list-style-type: none"> 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.
Government Position	Supported
Discussion	<p>The Government supports the intent of this recommendation.</p> <p>Effective and efficient recycling infrastructure is a key enabler of a circular economy that will support our economic, social, and environmental wellbeing. We are considering all aspects of this recommendation to make improvements to our recycling infrastructure and have already made some significant investments.</p> <ul style="list-style-type: none"> a, b, and e Waste Funds have been used to upgrade optical and mechanical sorting equipment at materials recovery facilities across New Zealand since 2019. The improvements have been prioritised towards packaging and construction and demolition materials, targeting wood wastes. Since 2019 the Government has invested over \$20 million in resource recovery projects including construction and demolition facilities and services. Further funding for waste infrastructure was committed in Budget 2022 through the Climate Emergency Response Fund to ramp up activity over the next two years. This will be supplemented by increasing waste levy revenue in the long run. c The regulated product stewardship schemes have also been making clear progress: several have finished the co-design process and are moving on to implementation. E-waste, plastic packaging, and tyres are all priority products and so have their own product stewardship schemes. These schemes will support improvements to the regulatory environment for these products and enable us to increase the obligation of producers, sellers, and users to provide for effective take-back and management of end-of-life products. d As part of the tyres scheme, we will explore opportunities for re-treading infrastructure because it is an efficient, cost-effective, and environmentally friendly process for reusing commercial and heavy vehicle tyres. Safety and quality constraints limit the ability to retread passenger vehicle tyres. <p>The Ministry for the Environment is developing a long-term infrastructure plan that will explore opportunities for coordinated facilities in a broader network that could provide improvements in material aggregation, collection, drop-off points and consistency. It will also explore opportunities for reusing, recycling, and collecting construction and demolition waste.</p>
Status	Underway in part

Recommendation 32 Use behavioural interventions to address barriers to recycling, reduce waste and avoid contamination

Recommendation description	<p>This should include:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in full
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Discussion	<p>The Government fully supports this recommendation.</p> <p>Helping New Zealanders to shift behaviour and attitude around waste has the potential to support our country to reduce the total amount of waste we produce, push us towards a more sustainable circular economy, and make New Zealand a better place to live in. The specific steps this strategy outlines are well aligned with the developing Waste Minimisation Strategy and Emissions Reduction Plan (ERP).</p> <ul style="list-style-type: none"> a In early 2022, we consulted on proposals to standardise recyclables accepted for kerbside collection across the country. Supported by a behaviourally informed campaign and other implementation, these proposals will improve the ease of recycling for consumers. b and c The Waste Minimisation Strategy includes a proposal to establish a nationally coordinated long-term behaviour change programme to support both central and local government. This programme would involve both education support and the coordination of resources between central and local government. The ERP supports this, with actions to enable households and businesses to reduce organic waste.
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Status	Underway
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Recommendation 33 **Reduce landfill emissions resulting from organic waste**

Recommendation description	<p>Steps should be taken to:</p> <ul style="list-style-type: none"> 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 the take-up of organic waste collection. c Require landfill gas capture for all landfills that accept organic waste.
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Government Position	Supported in principle
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Discussion	<p>The Government supports the intent of this recommendation.</p> <ul style="list-style-type: none"> a and b Organic waste produces most waste emissions, and biogenic methane from organic waste has a warming effect 28 times greater than carbon dioxide. Reducing emissions from organic waste will help us reach our 2050 emissions goals and create opportunities in the steps towards a circular economy. The Emissions Reduction Plan outlines the importance of reducing organic waste emissions and several actions we will take to achieve this. Improvements to food and garden waste collection and better education and resources to support effective participation in collection are central actions. c Another key action is to increase the capture of gas from municipal landfills through regulations to require gas capture at class 1 landfills and by investigating the feasibility of gas capture requirements at class 2 to 5 landfills. We are also going further than the recommendations in this strategy by exploring the banning of organic waste from landfills by 2030. In Budget 2022, we committed over \$100 million to reduce and divert organic waste from landfill. This funding will go towards a suite of proposals including resource recovery infrastructure, behaviour change programmes and landfill gas capture research.
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Status	Underway
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Recommendation 34 Develop uses for recycled materials in infrastructure

Recommendation description	<p>Responsible agencies should:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in principle
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Discussion	<p>The Government supports the intent of this recommendation. Using recycled materials in infrastructure is one way to reduce the waste and emissions produced in building and construction. We acknowledge that barriers exist for the reuse of recycled construction and infrastructure materials and are taking steps to support the reduction of these barriers.</p> <p>Through the Waste Funds we are supporting investments in onshore processing and exploring opportunities for domestic reprocessing in the long-term waste infrastructure plan. The <i>Construction Sector Transformation Plan 2022-2025</i> includes goals to reduce waste, and programmes like Building for Climate Change will encourage architects and designers to consider ways to reduce waste at all stages in the construction process. In 2021, the Waste Minimisation Fund supported 18 projects with a total value of \$8.4 million that worked on reducing construction and demolition waste, including investigating innovations for the use of recyclable materials in infrastructure. The Emissions Reduction Plan also tackles these issues, with an action to realise cross-sector opportunities to reduce whole-of-life embodied emissions that includes the investigation of barriers to reusing, repurposing, and recycling building materials.</p>
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Status	Underway
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Recommendation 35 Clarify the strategic role of waste-to-energy

Recommendation description	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.
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Government Position	Supported in principle
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Discussion	The Government supports the intent of this recommendation. The Waste Strategy is one of several related pieces of strategic work that will consider the position on waste to energy, including the Circular and bioeconomy Strategy and the Energy Strategy. The Ministry for the Environment has also published the broad matters for consideration when assessing a waste-to-energy proposal.
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Status	Underway
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Recommendation 36 Improve waste sector data and insight

Recommendation description	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.
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Government Position	Supported in full
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Discussion	The Government fully supports this recommendation. Making good decisions to improve our waste system relies on having quality waste data. We recognise that our waste data currently has high levels of uncertainty and various gaps, which is why we are working to improve waste data. The Emissions Reduction Plan includes a focus area with actions to help us improve this data. We are also developing a National Waste Data Reporting Programme, which we aim to shift to implementation over the next two years.
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Status	Underway
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Recommendation 37 **Encourage public infrastructure waste minimisation and designing for deconstruction**

Recommendation description 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.

Government Position Supported in principle

Discussion The Government supports the intent of this recommendation.

Encouraging waste minimisation in public infrastructure will support us to achieve both our waste reduction and emissions reduction goals. We are progressing many initiatives to reduce the amount of construction waste going to landfills across the waste life stages.

- a The 2019 Sustainable Construction Procurement Guidelines encourage the use of a plan for waste minimisation, and actions in the Emissions Reduction Plan propose to take this further by exploring the possibility of requirements to include waste minimisation or resource recovery plans in building consents. Some local authorities have elected to require waste minimisation plans for large construction projects as part of their Solid Waste Bylaw provisions, and we aim to make this more consistent and strengthen its connection to the building consent process.
- b While we are currently progressing higher priority options for reducing construction waste, in 2021 we introduced a specialist framework for modern methods of construction such as offsite manufacturing and prefabrication and remain open to further exploring the option of encouraging prefabrication and standardised options as part of infrastructure delivery.
- c The Government supported the establishment of CivilShare, a construction and demolition material exchange application. As part of the Emissions Reduction Plan actions, we will review the efficacy, uptake and reach across New Zealand of this app and others to analyse their ability to service today's construction and demolition waste market.

Status Underway in part

A world-class infrastructure system: how we get there

11 <i>Supported in full</i>	8 <i>Supported</i>	6 <i>Supported in principle</i>	6 <i>Noted</i>
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Recommendation 38 Strengthen government as a sophisticated client of infrastructure

Recommendation description	<p>Take the following steps to develop the client capabilities of the government to better deliver infrastructure:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in full
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Discussion	<p>The Government agrees there is more we can do to strengthen government sophistication as a client of infrastructure, and notes that it will require incremental change to achieve this.</p> <ul style="list-style-type: none"> a and b Many government agencies have taken steps to improve asset management, long-term planning, and develop standard designs for their assets. For example, the New Zealand Defence Force, Department of Corrections and Ministry of Primary Industries have all developed or are developing asset management plans and standard design frameworks and methodologies for their major asset classes. c Many agencies are also actively taking steps to strengthening capabilities. The <i>Construction Sector Transformation Plan 2022-2025</i> mid-term goals includes for example, increasing the capabilities of leaders to drive change. The Accord will continue to work across the sector to improve procurement activities and processes, seeking a greater level of standardisation and consistency, and supporting greater innovation. This will start in Year One (2022-2023) of the plan. <p>In addition, existing guidance to encourage good management practices, and high standards of investment management and asset performance includes the Cabinet Manual, various Cabinet Office circulars, the Procurement Rules, Treasury circulars, and the Treasury guidance on investment management, including business cases.</p> <p>The Government will continue to look for opportunities to improve its capabilities.</p>
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Status	Underway in part
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Recommendation 39 **Increase the clarity of long-term investment intentions for public infrastructure agencies**

Recommendation description 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.

Government Position Noted

Discussion

The Government supports transparent long-term investment planning, and the alignment of budget allocations with agency service delivery priorities and strategies.

The Public Finance Act provides a framework for parliamentary scrutiny of the Government's expenditure proposals and the management of its assets and liabilities. This framework establishes lines of responsibility for the effective and efficient management of public financial resources and specifies the principles for responsible fiscal management.

Local government meets the needs of its communities for good-quality local infrastructure, local public services, and the performance of regulatory functions. Governance, funding, and the delivery of infrastructure services is the responsibility of local authorities, and they exercise this authority through various means such as council controlled organisations. This is outlined in the Local Government Act 2002, which states the purpose of local government is to enable democratic decision-making at a local level on behalf of communities. The outcome of the Future of Local Government Review may result in changes to the local government system, including roles, functions, and partnerships.

The Government is open to opportunities to improve long-term investment planning; however, at this stage has not considered changing the current standards to reflect those required by local government.

Status Further consideration required

Recommendation 40		Strengthen independent advice for infrastructure prioritisation
Recommendation description	<p>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:</p> <ol style="list-style-type: none"> Publish guidance on criteria for project inclusion and priority investigations, consistent with best practice decision-making principles. Solicit applications for priority projects and initiatives from infrastructure providers. Assess projects and initiatives and update the priority list regularly. 	
Government Position	Supported, subject to further exploration	
Discussion	<p>The Government will explore how an infrastructure priority list will complement existing investment management frameworks, guidance, and tools.</p> <p>This will build on the existing work of investment officials and the Investment Panel led by the Treasury and could be used to support our objective to grow a high wage, low emissions economy.</p>	
Status	Underway	
Recommendation 41		Improve infrastructure performance reporting and insight
Recommendation description	<p>Assemble and analyse infrastructure performance across:</p> <ol style="list-style-type: none"> Projects: how individual assets perform in delivery and operation. Networks: how infrastructure performs as a network. Systems: how networks perform as an integrated system. 	
Government Position	Noted	
Discussion	<p>The Government supports the improvement of infrastructure performance reporting and insights.</p> <p>There are opportunities to make further improvements in this space, and there are several actions underway that make steps to improve performance reporting and insights for central government projects and networks. For example, the Department of Corrections is developing a Network Configuration Plan for all custodial and community facilities and many investment-intensive agencies are improving asset management practices, which in turn improves information used to assess performance. In addition, Te Waihanga's own infrastructure pipeline helps capture performance of projects in delivery.</p> <p>Further work is required to determine how best to approach and build an understanding of performance across all infrastructure projects, networks, and systems in New Zealand, given that ownership of these assets is spread across central and local government, Māori, and the private sector.</p>	
Status	Further consideration required	

Recommendation 42 **Optimise infrastructure investment by considering non-built solutions first**

Recommendation description 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.

Government Position Supported in full

Discussion

The Government supports the consideration of non-built options when choosing how to address infrastructure challenges and agrees that we need to get more use out of the infrastructure we have and the new infrastructure we are building. This includes managing demand for infrastructure to defer or avoid costly upgrades that we will have to maintain and renew. We also agree that there is a need for better project selection: to make better decisions about new infrastructure projects to ensure that they are the right way to solve problems.

The Treasury's Better Business Case guidance requires that a wide range of options be considered to identify the option that provides the best public value to New Zealand. Investments seeking funding through the annual Budget process are also expected to have considered the full range of options before funding is sought. The guidance continues to be improved.

The Government will continue to consider non-built solutions when choosing how to address infrastructure challenges and acknowledges there may be opportunities to do more in this space.

Status Underway

Recommendation 43 Strengthen project evaluation through cost-benefit analysis**Recommendation description**

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.

Government Position

Noted

Discussion

The Government supports consistent and transparent project evaluation, which is an expectation for all proposals seeking Crown funding. These expectations do not currently apply to local government.

- a and b Cabinet Office Circular CO (19) 6 requires all significant investments (defined as proposals with whole-of-life costs (WOLC) more than \$15 million) to apply the Treasury's Better Business Case guidance, of which completion of a cost benefit analysis is a requirement, and the expectation is that these are completed before a funding commitment is made. Many cost benefit analyses are already proactively released and are subject to release under the Official Information Act with commercially sensitive information withheld as appropriate.
- c All proposals seeking funding through the annual Budget process are required to consider the Living Standards Framework which includes intergenerational and wider economic, social, and environmental benefits. In addition, the Government Procurement Rules already require mandated agencies to target wider social, economic, environmental, and cultural outcomes as standard procurement practice.

Status

Underway in part

Recommendation 44 **Ensure an appropriate consideration of future generations in project evaluation**

Recommendation description 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.

Government Position Support in full

Discussion

The Government is committed to ensuring an intergenerational approach is undertaken when evaluating projects. This will lay the foundation for future economic growth and productivity.

The Treasury provides specific guidance on the discount rates to be used in economic analyses, in addition to the general guidance in cost benefit analysis. The current approach to the social discount rate policy is intended to provide flexibility for agencies to allow different discount rates for their sensitivity analysis.

The Government will focus on improving the adoption of cost-benefit analyses employing discount rates before an inquiry is undertaken. The proposed timeframes for this recommendation in the Strategy allow for this.

Status Further consideration required

Recommendation 45 **Improve the infrastructure project knowledge base**

Recommendation description	<p>To improve future project evaluation methods and processes, delivery agencies should:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in full
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Discussion	<p>The Government agrees it is important to ensure that valuable learning opportunities are incorporated from real world experience into subsequent projects. Major infrastructure projects should be reviewed post-implementation, and further work should be undertaken to better understand if the stated benefits have been realised, and if the investment has performed against expectations. It is acknowledged that post-completion reviews offer these learnings, and we need to consistently use reviews to identify successes and failure.</p> <p>Further work should be undertaken to better understand how this recommendation would work across central government delivery agencies, how this information and learnings could be incorporated into future decision-making, how it could fit within existing processes and programmes of work, who would hold this information, and the costs associated with these project valuations. This work should also consider the role of independent audits of the reviews, and the publication of these reviews upon completion.</p>
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Status	Further consideration required
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Recommendation 46 Improve infrastructure cost analysis

Recommendation description	<p>Undertake investigations into the cost performance of New Zealand's infrastructure sector that:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in full
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Discussion	<p>The Government supports the improvement of infrastructure cost analysis, and the use of this information in the development of future national infrastructure strategies. This information, together with the project evaluation noted in recommendation 45, could provide supporting evidence to inform investment decision-making and improve the Government's abilities as a client.</p> <p>This will be important going forward, as higher rates of both private and public investment in infrastructure are likely to be critical to achieving objectives around New Zealand's long-standing challenges such as housing, climate change and productivity.</p>
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Status	Further consideration required
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Recommendation 47 **Improve equitable funding of local infrastructure**

Recommendation description Investigate options and timing to phase in the removal of existing Crown exemptions from paying rates, recognising when a demand for infrastructure is generated. The approach should avoid creating excessive and unexpected financial liabilities.

Government Position Noted

Discussion The Government notes the recommendation to investigate options to phase in the removal of existing Crown exemptions from paying rates. We acknowledge that changes may be required to create a more equitable funding system to meet the needs of New Zealand in the future. At this point, we are not committing to the change. The Future of Local Government Review is a two-year review that will go through a three-stage review process and consider what are the key shifts in local governance that may be required to do this. The final report from the review is due in 2023.

This review will consider the functions, roles and structures of local government; the relationships between local government, central government, iwi, Māori businesses, communities and other organisations that contribute to local wellbeing; how the local governance system might authentically embody the Treaty partnership; whether current funding arrangements are sustainable, equitable and maximise wellbeing; and what might need to change so that local government and its leaders most effectively reflect and respond to the communities they serve.

A theme that emerged during the early soundings work of the review identified that new approaches to funding and financing mechanisms will be needed to ensure local authorities are viable and sustainable, and to improve equity. In the next phase of the review, the review panel has indicated it is likely to include high level consideration of the principled basis on which funding decisions are made, including an appropriate balance of the beneficiary and exacerbator pays principles alongside others such as efficiency, transparency, equity and impacts on local government autonomy.

Status Further consideration required

Recommendation 48 Reform the transport funding system

Recommendation description	<p>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:</p> <ol style="list-style-type: none"> 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.
Government Position	Supported, subject to the outcomes of the Future of the Revenue System Review
Discussion	<p>The Government is committed to maintaining a fit-for-purpose transport funding system that is sustainable into the future. Te Manatū Waka Ministry of Transport is undertaking on the Future of the Revenue System.</p> <p>The Future of the Revenue System is a long-term work programme that takes a first principles approach and initially focuses on broad questions, such as 'who should pay for what within the transport system'. This work programme includes considerations of User Pays as a principle, and notions of dynamic pricing as referenced in this recommendation but does not presuppose these are the right solutions for New Zealand.</p> <p>Revenue (funding), financing and pricing approaches need to be considered within the system, and each serve their purpose. It is anticipated that the Future of the Revenue System project will consider each of the points raised in the sub-recommendations. The programme of work will also provide options for a new, or renewed, revenue system that aligns with future purposes and desired outcomes, which we aim to have in place towards the end of this decade. This is based on forecasting of current revenue levers, and a realistic timeframe of change.</p> <p>In the short-to-medium term, a piece of work is underway between Te Manatū Waka, Waka Kotahi, and The Treasury to ensure the sustainability of the National Land Transport Fund and to plan an approach to funding 'mega-projects'.</p> <p>Robust forecasting methodologies and futures thinking scenarios are required to inform transport funding requirements. Additional funding sources may be considered as part of the Land Transport Revenue Review, and congestion charging is also being considered. However, widescale changes or alternative options may come through the Future of the Revenue System project. Other central government agencies and local government will be involved in this work programme as it progresses.</p>
Status	Underway

Recommendation 49 **Improve and streamline the application of development contributions**

Recommendation description 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.

Government Position Support in principle

Discussion The Government supports the intent of the recommendation to improve and streamline the application of development contributions. However, the consideration of the various options to improve development contributions requires further thought. We acknowledge that early findings from the Future of Local Government Review have found that new approaches to funding and financing mechanisms will be needed to ensure local authorities are viable and sustainable, and to improve equity.

Status Further consideration required

Recommendation 50 Consolidate existing separate infrastructure capital funds

Recommendation description	<p>Fragmented infrastructure capital funding pools should be consolidated and integrated in a transparent infrastructure capital fund, or funds.</p> <p>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.</p> <p>How funding is held and distributed should:</p> <ol style="list-style-type: none"> a Be set out transparently. b Include a consideration of the use of grants, loans and investments, or some combination of these.
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Government Position	Noted
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Discussion	<p>The Government agrees that how funding for infrastructure is held and distributed should be transparent, aim to provide greater long-term consistency and certainty, and that funding options for a particular project or programmes should include consideration of grants, loans, investments, guarantees and indemnities as appropriate. The Government also recognises that there may be opportunities for some consolidation that would support improvements to system efficiency and increase the ease for infrastructure providers to access funding.</p> <p>There may also be an opportunity to improve our annual Budget process through the outputs of this recommendation, particularly the Multi-Year Capital Allowance (MYCA) and the longer-term investment approach we are taking to capital spending. Further, the Government is already looking for a coordinated capital investment plan from the agencies that make up the Justice Cluster, a pilot of arrangements to encourage collaboration among agencies working across a common sector.</p> <p>However, the Government does not consider that consolidating Crown capital funding pools would be appropriate at this time. Many of the existing funds identified in the Strategy are either fully allocated (or soon will be).</p> <p>New capital investments should be considered as part of the annual Budget process and funded from the MYCA. From time to time, the Government may consider establishing funds for specific purposes, such as the Climate Emergency Response Fund. These funds have investment objectives and project selection criteria, and acknowledge the need for an intervention to meet a market failure and/or to deliver on government priorities.</p>
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Status	Not considering
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Recommendation 51 **Improve the ability to debt fund infrastructure**

Recommendation description	<p>As a way of accessing alternate financing and avoiding debt on local government balance sheets:</p> <ul style="list-style-type: none"> 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.
Government Position	Supported in full
Discussion	<p>The Government supports this recommendation. The Infrastructure Funding and Financing (IFF) Act 2020 provides a tool for local authorities to finance infrastructure projects in a way that does not impact council balance sheets.</p> <p>Local councils, developers or any other person may propose that an infrastructure project may be funded using the IFF levy model. Crown Infrastructure Partners (CIP) are working with a range of councils and other parties to actively facilitate opportunities. Levies must be authorised on a case-by-case basis via an Order in Council approved by Cabinet, following recommendation by the Minister responsible for the Act. Te Tūāpapa Kura Kāinga – Ministry of Housing and Urban Development will provide advice on any proposals to use the IFF levy system.</p> <p>In addition, the Government is progressing a cross-agency Infrastructure Funding and Financing workstream as part of the Urban Growth Agenda. This workstream will progress these issues and funding and financing tools more generally. It is guided by principles that relate to the government functions of distribution, the efficient allocation of resources to their highest value and best use, and to broader economic stability.</p>
Status	Underway

Recommendation 52 Improve funding of infrastructure services through targeted funding tools

Recommendation description	<p>Establish targeted funding tools for the following applications:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in principle
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Discussion	<p>The Government supports improving the way we fund infrastructure services through targeted funding tools. We need to ensure our tools are fit for purpose and enable us to sustainably fund our infrastructure services.</p> <ul style="list-style-type: none"> a The International Visitor Conservation and Tourism Levy (IVL) is a flat fee paid by some international visitors upon their arrival into New Zealand.³ This levy was established in 2019, with the aim to invest this levy in projects that will help to create productive, sustainable, and inclusive tourism growth that protects and supports our environment. The levy forms a hypothecated revenue stream that is invested in tourism and conservation. The tourism sector has been greatly impacted by the COVID-19 pandemic, and the Government is further considering how broad-based and targeted support can be used to assist the sector, local authorities and regions that have previously experienced high international visitor numbers. b Targeted funding tools for wastewater are being considered through the Three Waters Reform programme. The Government has worked with local government, iwi, and water industry leaders to create a detailed, affordable plan to make sure our three waters system is in good condition to meet challenges like population growth, climate change and natural disasters. The Water Services Entities Bill has now been introduced, which will establish the new Water Services Entities on the foundations of existing council infrastructure, people, and expertise. The plan is designed to give the new water organisations the financial flexibility to make the necessary upgrades more affordable for everyone.
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³ Australian and most Pacific Island visitors are exempted from the IVL.

Recommendation 52 **Improve funding of infrastructure services through targeted funding tools**

- c The Government has committed to partner with local government and the private sector to improve the options available to households to reduce emissions from food and garden waste through a \$103 million investment in waste infrastructure established under the Climate Emergency Response Fund (CERF). This is one of several key initiatives that have been funded from the CERF and reflect the broad scope of the actions and measures reflected in the first Emissions Reduction Plan (ERP) that will require funding across multiple fiscal years. The ERP includes sector-specific policies to reduce emissions from waste.

The initiative will include measures to improve kerbside collection of organic waste and measures to support households in reducing their methane emissions. It's all part of supporting households to participate to the extent that they can in our national climate action.

Status Underway

Recommendation 53 **Encourage the use of value capture tools to fund infrastructure for growth**

Recommendation description Enable value capture tools through legislation to ensure that more funding is available for infrastructure that generates value for users and communities.

Government Position Supported in full

Discussion

The Government supports this recommendation. We need to ensure our infrastructure systems settings and frameworks are appropriate. These systems settings include planning, procurement, and infrastructure funding and financing.

Value capture aims to 'capture' part of the incremental benefit that results from public investment. When part of a beneficiary pays framework, value capture aligns the recovery of costs associated with providing infrastructure with the benefits of the investment received by local landowners and tenants. Under the 'beneficiary-pays' principle those who benefit from a service should meet the cost of providing that benefit. Capturing a portion of this value is equitable and supports project funding and efficient resource allocation by avoiding excess benefits being accrued by landowners and tenants.

Value capture can be achieved through a wide variety of approaches, and investment objectives should determine the preferred best mix of value capture tools. It should align with the distribution, efficiency and stability principles developed under the Infrastructure Funding and Financing workstream of the Urban Growth Agenda.

The Government is currently investigating how value capture can play a part in a fair and equitable system for Auckland Light Rail, in particular in terms of commercial developments.

Status Underway

Recommendation 54 **Increase infrastructure funding to meet our infrastructure challenges and boost productivity**

Recommendation description Given that current expenditure levels are unlikely to be sufficient to provide for infrastructure needs in coming decades, a material increase in infrastructure funding from both public and private sources is required to meet our infrastructure challenges and boost productivity.

The government should increase infrastructure funding where there are opportunities to use investment to support productivity growth, resilience and improvements in environmental outcomes. Investments should be made based on rigorous assessments of which projects deliver positive value for money.

Government Position Supported in full

Discussion Good infrastructure investments can improve the wellbeing of future generations by contributing to lifting national productivity and ensuring our infrastructure networks are fit-for-purpose and resilient to changing conditions over coming decades.

In the past, there has been underinvestment in critical infrastructure. The Government's approach now is to invest in long-term, transformational projects that will support productivity and give certainty and security to businesses and households. The new debt ceiling provides fiscal space to fund high quality capital investments. The focus is on investing in high value and deliverable projects at the right time, which is why the Government is building a realistic and sustainable pipeline of investment to support the market to invest in increased capacity and capability. In making decisions to fund high-value infrastructure investments, the Government will remain conscious that increased spending can add to inflationary pressures.

Status Underway

Recommendation 55 **Ensure that infrastructure charges keep pace with inflation**

Recommendation description Infrastructure related charges, fees and levies that are set out in legislation or regulation should be adjusted for inflation.

Government Position Noted

Discussion Annualised increases in charges, fees and levies can provide confidence in future revenue, enabling debt to be used to address immediate investment ambitions. In addition, an indexation approach can also create revenue certainty and help to manage cost increases. However, this should be considered on a case-by-case basis and the ability to adjust charges for costs, which can come down, should be retained.

There is an opportunity to consider this recommendation in further detail as part of the Future of the Revenue System programme that is being undertaken by Te Manatū Waka, Waka Kotahi, and the Treasury. This could provide a better understanding of the proposed indexation approach, including the mechanisms by which the indexation could be implemented, and an appropriate level.

Status Underway in part

Recommendation 56	Improve public understanding of how infrastructure is funded
Recommendation description	<p>Improve communication about how infrastructure is priced and funded to build public understanding, including:</p> <ol style="list-style-type: none"> 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.
Government Position	Supported in full
Discussion	The Government supports this recommendation. We recognise the importance of building public understanding and acceptance of different ways of pricing for infrastructure services and note this was one of the key objectives in the establishment of Te Waihanga.
Status	Underway
Recommendation 57	Strengthen the government's mandate to deliver infrastructure
Recommendation description	Ensure that the Natural and Built Environments legislation 'gives effect' to existing requirements for the government to deliver infrastructure.
Government Position	Supported in principle
Discussion	<p>The Natural and Built Environments Act (NBA) and the Spatial Planning Act (SPA) will:</p> <ul style="list-style-type: none"> • have outcomes requiring development and infrastructure to be enabled • have provisions in the National Planning Framework (NPF) that enable infrastructure and development • resolve conflict between outcomes at the NPF or NBA plan level, avoiding the need to litigate these issues for every consent • require regional spatial strategies to consider infrastructure corridors and areas for development • provide an improved process for designations and consenting • provide exceptions to limits and targets for specific infrastructure, and • provide a suite of standards for activities that occur for most infrastructure projects, such as sediment control.
Status	Underway in part

Recommendation 58 Improve the evidence-base for environmental consent applications

Recommendation description 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.

Government Position Supported

Discussion The Government supports this recommendation in part.

- a Robust and consistent evidence provides a strong base for informed decision making. A key element of Resource Management Reform is to strengthen the plan development process, with a focus on early engagement and a robust hearing process. This will help improve the evidence base and knowledge reflected in Natural and Built Environment plans. This includes the management of the effects of urban development and infrastructure on the natural environment.
- b The Government notes that there may be efficiencies gained through the centralisation of knowledge for infrastructure consenting applications. This may also assist in setting national direction through the National Planning Framework (NPF). Under the Natural and Built Environments Act, the proposed new NPF will provide a set of mandatory national policies and standards as noted above. No work is currently underway that would specifically address this.

Status Underway in part

Recommendation 59 **Deliver reasonable environment limits and targets in the Natural and Built Environments legislation**

Recommendation description 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.

Government Position Supported in full

Discussion Under the Natural and Built Environments Act (NBA), the National Planning Framework (NPF) will provide a set of mandatory national policies and standards on specified aspects of the new system. Environmental limits and targets in the NPF will be set across six matters, including air, soil, indigenous biodiversity, freshwater, coastal waters, and estuaries, to protect human health and/or ecological integrity of the natural environment. The Ministry for the Environment is being supported in setting these limits and targets by the Department of Conservation, who is leading the work on environmental limits and targets within the coastal marine area.

The Government agrees that limits and targets should be measurable, targeted, and quantifiable.

Status Underway

Recommendation 60 **Develop greater certainty for infrastructure providers in the Natural and Built Environments legislation**

Recommendation description	<p>Steps that should be implemented to deliver greater certainty include:</p> <ul style="list-style-type: none"> 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.
Government Position	Supported
Discussion	<p>The Government supports the intent of this recommendation. Certainty for infrastructure providers enables better planning and better outcomes.</p> <ul style="list-style-type: none"> a The proposed National Planning Framework (NPF) aims to provide a set of mandatory national policies and standards on specified aspects of the new system. This includes a consistent framework for the management of noise and dust. b A key element of Resource Management Reform is the strengthening of plan development processes, with a focus on early engagement and a robust hearing process. The Natural and Built Environments Act (NBA) should provide for the conflict resolution mechanism of implementation principles that will guide decision making in the NPF and associated NBA plans. The general approach to minimising and resolving conflicts between outcomes will be consistent with the wider shift towards developing stronger and more proactive plans. This includes the management of the effects of urban development and infrastructure on the natural environment. c The Government agrees that limits and targets should be measurable, targeted, and quantifiable, and that the NBA should endeavour to avoid confusion of terms like ‘effects’. Environmental limits and targets will be set across six matters, including air, soil, indigenous biodiversity, freshwater, coastal waters, and estuaries to protect human health and/or ecological integrity of the natural environment. The Ministry for the Environment is being supported in setting these limits and targets by the Department of Conservation, who is leading the work on environmental limits and targets within the coastal marine area. d As part of Resource Management Reform, the Government is considering the place of different types of externalities in legislation.
Status	Underway

Recommendation 61 Increase the diffusion of existing technologies to increase productivity in the infrastructure sector

Recommendation description	<p>Increase diffusion of existing technologies through the following steps:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported
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Discussion	<p>The Government supports the intent of this recommendation.</p> <p>Diffusion of digital technologies across the wider business population holds significant potential for productivity improvements. Yet many New Zealand businesses still lag in the uptake of digital technologies. Technology diffusion can be held back by many factors including a lack of investment in complementary assets such as managerial capability, workers' skills, and intangibles such as R&D. New Zealand has a markedly low use of digital inputs in production, only moderate digital innovation, low investment in R&D and other intangible capital that complements digital technology, and a lag in managerial practices.</p> <ul style="list-style-type: none"> a In November 2021, Cabinet agreed to a major reform of the procurement system including, among other things, identifying and removing barriers to better procurement performance. The in-development work programme will examine barriers to technology diffusion, in addition to other barriers. <p>In addition, the Construction Sector Transformation Plan 2022-2025 mid-term goals include increased productivity through innovation, technology, and an enabling regulatory environment. The client leadership focus area for procurement and contracting aims to drive better outcomes through improved planning, procurement and delivery practices achieved through increased collaborative behaviours. The Plan will support procurers in using digital technologies, including providing access to demonstration pilots they can learn from.</p>
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Recommendation 61 Increase the diffusion of existing technologies to increase productivity in the infrastructure sector

Discussion

- b A technology plan for the diffusion of digital technology in the infrastructure and construction sectors could provide benefit, but there may be more value for MBIE to explore this within a wider, non-sector specific approach.
- Some programmes support wider diffusion of digital technologies, such as Digital Boost which provides small businesses with skills training. Actions in the Digital Technologies Industry Transformation Plan (ITP) may also spill over to wider industries. For example, work to address gaps in the digital skills pipeline under the ITP's Digital Skills and Talent Plan.
- In addition, the Construction Sector Accord initiative 7.4 Innovation investment strategy will develop a strategy to coordinate innovation investment and ensure that it is directed at solving the industry's biggest challenges. This will start in Year Two (2023-2024) of the plan.
- c A review of the appliance energy efficiency regulatory system is underway. The review includes a proposal to delegate regulation-making for minimum energy performance standards and labelling requirements to the Minister of Energy and Resources on advice from EECA. This would provide a more efficient avenue for regulating vehicles and products, removing redundant product classes, and make it significantly quicker and easier to maintain alignment with Australia under the Trans-Tasman Mutual Recognition Arrangement.

Status

Underway

Recommendation 62 Accelerate the adoption of open data and common standards for the infrastructure sector

Recommendation description 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.

Government Position Supported

Discussion The Government supports the intent of this recommendation.

The Government holds a vast amount of data on behalf of New Zealanders. Open data drives innovation. It helps build new business and encourages more strategic investment using more information. It can also lead to positive social and cultural outcomes and can increase transparency and democratic participation. Robust data standards can improve data collection and reporting, particularly when data is collected in different formats, for a variety of operational, management and administrative purposes, and none of these resources are linked and the data is inconsistent. Consistent standards are important for maximising the value of data and for effective management of the New Zealand data system.

The Government will continue to look for opportunities to support the adoption of open data and common standards across the infrastructure system and acknowledges the role that the Construction Sector Transformation Plan will play in achieving this.

Status Further consideration required

Recommendation 63 Accelerate the digitalisation of infrastructure

Recommendation description	<p>Accelerate digitalisation across the infrastructure lifecycle by implementing the following steps:</p> <ul style="list-style-type: none"> a Facilitate the 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.
Government Position	Supported
Discussion	<p>The Government supports the intent of this recommendation. Digitalisation of infrastructure has the potential to improve efficiency, enable innovation and boost service quality.</p> <ul style="list-style-type: none"> a The Construction Sector Transformation Plan 2022-2025 will support the use of digital technologies, including Building Information Management systems. b The Digital Strategy for Aotearoa (DSA) Action Plan has proposed work to map the current landscape of digital twins in Aotearoa New Zealand and develop an inclusive process for engagement. This would help support a future national-level conversation on the potential of digital twins and inform reflection on the role of government policies in enabling uptake. The interdepartmental Digital Executive Board, tasked with steering implementation of the DSA and coordinating policy activities, could consider how to take this work forward. c Artificial intelligence (AI) is a powerful technology with high potential to support increased innovation, productivity, and sustainable activity across multiple sectors. As infrastructure becomes ‘smarter’ with increased use of connected devices and other digital technologies, AI becomes a useful tool for making sense of the streams of data and for enhancing decision-making. More countries are now using AI for predictive maintenance and infrastructure management. However, AI also comes with challenges, including access to and use of data, privacy and security, and safety/robustness of AI systems. <p>Recognising the economic potential and challenges of AI, MBIE has worked with New Zealand’s AI Forum to develop a set of “cornerstones” that could underpin a future AI Strategy for Aotearoa New Zealand. These cornerstones include the aim that all AI innovation and adoption across New Zealand is done safely and ethically, with the full support and trust of all New Zealanders. The intention, as noted in the DSA, is to advance an AI Strategy for Aotearoa with the AI Forum, once resources are available. In addition, as noted in the DSA Action Plan, we will strive to build data ethics capability within the public sector and will continue to explore the merits of a Centre for Data Ethics and AI. The Government’s role in funding and launching a series of AI-powered use cases needs to be further developed.</p>
Status	Underway

Recommendation 64 **Provide certainty to industry to invest in skills and training development**

Recommendation description 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.

Use the aggregated data to provide insight into the capacity of the economy to deliver the pipeline, inform forecasts of labour requirements and inform the direction of government infrastructure spending during times of economic downturn.

Government Position Supported in full

Discussion The Government fully supports this recommendation.

One of the roles of Te Waihanga is to provide and co-ordinate information about current and proposed infrastructure projects. Te Waihanga must also have regard to long-term trends that impact on, or are impacted by, infrastructure.

If the pipeline is to act as a shop front and enable industry to plan it needs to evolve to remain fit for purpose and to meet industry needs. It must also add value to existing and new work programmes, and information and data sources, this includes various work programmes such as the Construction Sector Accord and MBIE delivering a Construction Skills Strategy to support a vision for construction skill needs in New Zealand; the Workforce Development Councils giving industry greater leadership and influence across vocational education; and the Immigration Rebalance providing the industry with prioritised and streamlined residence pathways for workers.

The Government will explore opportunities to improve the Infrastructure Pipeline produced by Te Waihanga, including how labour market information may be included.

Status Underway

Recommendation 65 **Develop the talent required to deliver New Zealand's future infrastructure**

Recommendation description	<p>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:</p> <ol style="list-style-type: none"> a Provides information on the likely professional and workforce requirements to deliver the 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.
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Government Position	Supported in principle
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Discussion	<p>The Government supports the intent of this recommendation. Delivering high quality infrastructure in good time and to budget requires the right people with the right skills. A national infrastructure skills plan has the potential to support us to build those skills across New Zealand. We will continue to explore options for improving the capacity and capability of the infrastructure system workforce.</p> <p>The Government has already progressed various work programmes with similar goals that partially address each of the aspects of the national infrastructure skills plan that this recommendation outlines.</p> <ol style="list-style-type: none"> a The <i>Construction Sector Transformation Plan 2022-2025</i> includes a People Development workstream that aims to address the skills gap, help shape the reforms in vocational education, and create a long-term workforce plan. Te Waihanga intends to develop an evidence-base for future decision-making regarding workforce matters. b Work is ongoing to implement the reform of vocational education and better support future workforce needs. As part of this, six Workforce Development Councils (WDCs) were established in October 2021 to ensure the vocational education system meets industry needs and gives a stronger voice to Māori business and iwi development. They advise the Tertiary Education Commission on the mix of vocational education and training it should purchase. The WDCs will set standards, develop qualifications, and help shape the curriculum of vocational education. Waihanga Ara Rau is the WDC for construction and infrastructure and includes the construction, concrete, plumbing, infrastructure, water, gas, electricity, telecommunication and roading sectors. <p>Work is also underway to review how vocational training is expected to support the sector and many infrastructure projects are covered by Broader Outcomes sought in government procurement guidelines, which includes quality employment outcomes as part of Procurement Rule 18(A).</p>
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Recommendation 65 Develop the talent required to deliver New Zealand's future infrastructure

Discussion

- c From July 2022, the sector can recruit from overseas through the Accredited Employer Work Visas (AEWV). Prioritised and streamlined residence pathways will also be provided as a set of Green List roles. These cover roles previously included on the Long-Term Skill Shortage List, with the inclusion of some new occupations. The Green List includes roles on the fast-tracked residence pathway, such as quantity surveyor, and on the work to residence pathway, such as plumber.
- d The *Construction Sector Transformation Plan 2022-2025* has the mid-term goals of having a more skilled and diverse workforce that is future ready. The Construction Sector Accord Construction Skills Strategy has an action plan that will ensure the workforce is developing the skills the industry needs now and into the future.
- e The Government can leverage existing settings, including the procurement system, to continue to advise on opportunities to improve coordination across projects and sectors, and how employers can work more effectively in partnership with training providers.

Status

Underway

Recommendation 66 **Build New Zealand's competitiveness for international firms and products**

Recommendation description 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.

Government Position Supported

Discussion Our vision for New Zealand's government procurement is to be fair, transparent, inclusive, and efficient, so that it delivers more value to New Zealanders and can respond to changing government priorities.

The Australia New Zealand Leadership Forum Infrastructure Sector Group promotes trans-Tasman collaboration between the respective infrastructure sectors. The Group has explored options for further integration of the Australian and New Zealand infrastructure markets. Further work is required to identify how this might be achieved in practice.

The Government supports systems improvements and will continue to look for opportunities to understand potential regulatory barriers, and the specific issues and possible solutions that might be considered. We also continue to undertake studies that build our understand of whether the infrastructure systems and industry structures are appropriate, the nature of competition, and barriers to entry or the expansion of new or innovation supplies or standards.

Status Further consideration required

Recommendation 67 **Strengthen government client-side capability to plan, design, and deliver projects**

Recommendation description	<p>Improve project outcomes by increasing public sector capabilities and excellence in infrastructure delivery by:</p> <ul style="list-style-type: none"> 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.
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Government Position	Supported in principle
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Discussion	<p>The Government supports the intent of this recommendation.</p> <p>The Government is committed to delivering high quality education, training, and skills development, and notes the importance of formal training, on-the-job learning opportunities, and supportive professional development programmes to ensure we deliver on the highest value infrastructure projects.</p> <p>The public sector has a variety of roles, and the Public Service Commission supports public servants with a range of experiences across sectors, professions, and agencies. These include employee-led networks, internships and graduate programmes, and leadership development programmes.</p> <p>The Government will continue to look for opportunities to improve its capability to deliver infrastructure and notes the specific steps this recommendation outlines that should be considered within the broader context of skills development interventions happening across the public sector.</p>
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Status	Underway in part
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Recommendation 68 **Recognise major project leadership as a role with comparable complexity to organisational leadership**

Recommendation description 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.

Government Position Supported in principle

Discussion The Government supports the intent of this recommendation.

Projects are getting more complex, and the Government understands that getting the right project leaders in the right roles is critical for project success. Investing in project leadership is essential not only to address today’s problems but the challenges that will become increasingly acute over the coming decades.

The specific steps outlined in this recommendation will need to be considered within the broader context of skills development interventions that are happening across the public sector. The Government will explore these and other options for maximising the development of leaders across the public sector, including how we could leverage existing capability, tools, and mechanisms, and exploring a single academy for the Public Sector.

Status Further consideration required
