NEW ZEALAND
INFRASTRUCTURE
COMMISSION
Te Waihanga

He Tūāpapa ki te Ora

Summary of submissions

TeWaihanga.govt.nz

About PublicVoice

The analysis and reporting for He Tūāpapa ki te Ora has been undertaken by PublicVoice Limited. PublicVoice is a research and engagement consultancy located in Wellington, New Zealand. We specialise in research and engagement activities related to public policy and public consultation. PublicVoice works for a range of New Zealand local and central government agencies. You can find out more about our work at www.publicvoice.co.nz.

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Author(s):	Jared Bothwell, Dianne Long, Angela Yeoman, Ryan Jaggers, Kara Braithwaite-Westoby, Sahas Annavarapu

Contents

1. Executive summary

This document summarises the submissions received during the public consultation on "He Tūāpapa ki te Ora | Infrastructure for a Better Future: Aotearoa New Zealand Infrastructure Strategy Consultation Document" [1]. Public submissions were received during the consultation period 12 May 2021 to 2 July 2021. A total of 721 submissions were received.

This report focuses on summarising submissions. It does not analyse feedback or make recommendations. Any recommendations in response to submissions will be reflected in the Draft New Zealand Infrastructure Strategy.

1.1 Background to the consultation process

The New Zealand Infrastructure Commission, Te Waihanga is developing an Infrastructure Strategy for Aotearoa New Zealand.

As part of this work, it consulted on a document that set out the infrastructure issues and opportunities it had identified as well as options for action. The consultation was promoted through advertising on radio, social media, and in major newspapers. Key stakeholders were also contacted, and a series of workshops on the consultation document were held in Whangarei, Auckland, Hamilton, Wellington, Christchurch and Dunedin.

This consultation was one of several steps for gaining feedback to help develop the infrastructure strategy. Te Waihanga also carried out a nationwide survey of infrastructure asset owners, invited feedback on a series of discussion documents about key infrastructure sectors and, from March to May 2021, sought public feedback on what people felt were New Zealand's main infrastructure issues through its Aotearoa 2050 survey.

[1] He Tūāpapa ki te Ora | Infrastructure for a Better Future: Aotearoa New Zealand Infrastructure Strategy Consultation Document. May 2021 https://infracom.govt.nz/assets/Uploads/Infrastructure-Strategy-Consultation-Document-June-2021.pdf

1.2 Summary of feedback

Table 1 contains a summary of consultation feedback.

Table 1 Summary of feedback

Consultation question	Main feedback
Vision, principles and challenges	
Proposed vision for 2050 **Te tirohanga marohi mō te tau 2050**	
Q1. What are your views on the proposed 2050 infrastructure vision for New Zealand?	275 comments from submitters were in support of the 2050 vision. 100 comments noted governance changes, along with societal changes (nsc[2]=43), are required for the vision to succeed. Submissions that opposed the vision were sceptical about its potential to be effective. **Aims:** Submitters often commented on the aims of the proposed infrastructure vision. The most favoured aims were: • Reliable, affordable, accessible travel powered by renewables (general support, nsc=61) • A productive, sustainable, and carbon-neutral economy (general support, nsc=53) Where opposition to the aims is evident, it relates to the drive for carbon-neutrality (nsc=17). Concerns have also been raised, regarding water infrastructure (nsc=13) and what will be required to achieve a globally integrated economy (nsc=4).
Outcomes and principles to guide good infrastructure decision-making **Ngā hua me ngā mātāpono e eke ai ngā whakatau mō te whakatū hanganga**	
Q2. What are your views on the decision-making principles we've chosen? Are there others that should be included?	Feedback on the decision-making principles resulted in 187 comments from submitters in support while 80 comments were in opposition. 38 comments from submissions opposed using the Treaty of Waitangi as a guiding principle. Of the five proposed decision-making principles, 'evidence-based', 'integrated', and 'future focused' received the most feedback. Potential requirements for success were also provided. Examples are:

[2] nsc=number of submitter comments

	• Integrated: accessible to all (nsc=48) • Future-focused: requires an intergenerational approach (nsc=22) • Evidence-based: more emphasis on cost-benefit analysis (nsc=20) Feedback was provided on the three proposed outcomes (efficient, equitable, affordable). Of these, 73 comments from submissions were about 'equitable' outcomes. The most common concern was the belief that there is inequality in focusing on Māori (nsc=14). Submitters also proposed other decision-making principles. Seven submitter comments suggested that 'resourceful' could be an additional decision-making principle.

New Zealand's infrastructure challenge is growing **E tupu tonu ana ngā raruraru hanganga o Aotearoa**	
Q3. Are there any other infrastructure issues, challenges or opportunities that we should consider?	200 comments related to greater consideration for transport. Submissions focused on both public and private transport. Other submitters expand on the challenges and opportunities noted by Te Waihanga including the need to improve current infrastructure (n=99), increase housing stock (nsc=65), encourage better town planning (nsc=29), increase the focus on climate change (nsc=42), and facilitate more water storage requirements (nsc=25). Additional ideas include the diversification of energy generation (nsc=43) and improving waste management infrastructure (nsc=12).
Action Area One: 'Building a Better Future'	
Q4. For the 'Building a Better Future' Action Area and Needs: • What do you agree with? • What do you disagree with? • Are there any gaps?	There was a high degree of agreement for Action Area One and its associated Needs, with 292 comments from submitters indicating some form of support. **Agreement:** Submitters expressed both general agreement with the Action Area and its Needs (nsc=101), as well as the specific needs they supported. The Need that attracted the most support was "preparing infrastructure for climate change (F1)", with 77 comments. **Disagreement:** 168 comments from submissions raised some form of disagreement. Some went into more detail regarding their disagreement. For these: • 35 comments from submissions disagreed with partnering with Māori: Mahi Ngātahi (F5) • 27 comments from submissions disagreed with the management and/or governance of infrastructure **Gaps:** 219 comments from submissions said that there were general gaps in this Action Area, with 86 comments regarding management and/or

	governance. 'Preparing infrastructure for climate change' was the need that submitters felt had the most gaps (nsc=140).
F1. Prepare infrastructure for climate change	
Q5. How could we better encourage low-carbon transport journeys, such as public transport, walking, cycling, and the use of electric vehicles including electric bikes and micro-mobility devices?	331 comments from submissions suggested ideas relating to public transport. Within public transport, 111 comments related to the efficiency/reliability of public transport. 86 comments from submitters considered the pricing of public transport to be important. Active transport/micro-mobility (nsc=261) and private transport (nsc=248) were also mentioned. 87 submitter comments related to improving the safety for users of active transport, while 143 comments were in support of sustainable private transport. 105 submitter comments related to discouraging private car use. 18 submissions expressed disagreement concerning the prioritisation of low-carbon journeys. A further 18 submissions considered the environmental sustainability of electric vehicles as a challenge.
Q6. How else can we use infrastructure to reduce waste to landfill?	235 submitter comments suggested minimising waste. Additionally, 229 comments from submissions related to the important role recycling has in reducing waste to landfill. In terms of landfill waste management, 74 comments from submissions indicated support for the incineration of waste.
Proposed options to prepare infrastructure for climate change	73% fully supported driving a culture of waste minimisation, while 22% partially supported. 57% fully supported efficient pricing of waste, while 27% partially supported. 55% fully supported enabling active modes of travel, while 26% partially supported. 55% fully supported recognising climate uncertainty in decision-making processes, while 29% partially supported. 53% fully supported requiring a bright-line (pass/fail) infrastructure resilience test, while 30% partially supported. 52% fully supported adapting business case guidelines to ensure full consideration of mitigation and adaptation, while 29% partially supported. 43% fully supported ensuring non-built transport solutions are considered first, while 33% partially supported. 40% fully supported requiring local government to consider information from insurance markets to inform climate-risk-related planning policy, while 36% partially supported.

F2. Transition energy infrastructure for a zero-carbon 2050	
Q7. What infrastructure issues could be included in the scope of a national energy strategy?	267 comments from submissions suggested that renewable energy infrastructure is worth including in a national energy strategy, with 93 submitter comments supporting solar energy in some capacity. 77 comments from submissions proposed the inclusion of maintenance and development of energy infrastructure.
Q8. Is there a role for renewable energy zones in achieving New Zealand's 2050 net-zero carbon emissions target?	183 submitter comments suggested that there is a role for renewable energy zones. 71 comments from submissions indicated that there was no role. Of those that expressed support, 18 comments from submissions asserted that wind generation zones would be effective, while 16 thought that solar power zones would be appropriate.
Q9. Of the recommendations and suggestions identified in the Ministry of Business, Innovation and Employment "accelerating electrification" document, which do you favour for inclusion in the Infrastructure Strategy and why?	The most favoured proposition (nsc=70) relates to Section 8 of Accelerating Electrification, with support for renewable electricity generation investment. Preferred types of renewable energy are solar, wind, and hydro or tidal generation. 86 comments from submissions were in opposition to the inclusion. The main reason for this was opposition to bureaucratic structures and cost implications (nsc=12).
Proposed options to transition energy infrastructure for a zero-carbon 2050	65% fully supported enabling distribution networks to minimise barriers to the connection and use of large numbers of local generation, storage and demand response facilities, while 27% partially supported. 64% fully supported reducing barriers to building spare transmission capacity where that would reduce inefficient barriers to large-scale renewable generation and the electrification of large process heating units, while 28% partially supported. 49% fully supported investigating the need for a specific regulatory framework for offshore energy generation, while 29% partially supported.

F3. Adapt to technological and digital change	
Q10. What steps could be taken to improve the collection and availability of data on existing infrastructure assets and improve data transparency in the infrastructure sector?	Key themes identified from this question were: • The standardisation of data collection and use, what to collect, and how to do so innovatively within privacy constraints (nsc=120) • Collaborative data management for improved governance and management (nsc=96) • Ease of public access to information and transparency (nsc=64) • A quality, centralised, secure, and efficient data storage (nsc=34) 24 comments from submissions also expressed opposition to steps to improve the collection and availability of infrastructure data.
Q11. What are the most important regulatory or legislative barriers to technology adoption for infrastructure providers that need to be addressed?	255 comments from submissions identified barriers. 98 submitter comments identified outdated, inefficient, and limiting primary and secondary legislation, including the Resource Management Act 1991 (nsc=33). Others noted the limitations caused by inefficient and siloed governance (nsc=44). 39 comments from submissions identified financial barriers. Some submissions provided ideas to address these barriers. These included: • Facilitating and funding technology uptake (nsc=15) • Environmental sustainability must be ensured (nsc=10) • Clear / comprehensive / standardised legislation required (nsc=9) • The central government should assist in implementing new technology (nsc=7)
Q12. How can we achieve greater adoption of building information modelling (BIM) by the building industry?	The most favoured options for achieving greater adoption of BIM related to addressing regulatory barriers (nsc=95), including the standardisation of building codes, processes, and compliance (nsc=36), and legislating for the adoption of BIM (nsc=34). Regulatory proposals were followed by the suggestion that easier access to understandable data (nsc=65) could help improve greater adoption of BIM. Improved management / governance / planning systems (nsc=27) were also suggested as potential ways to achieve this goal.
Proposed options to adapt to technological and digital change	69% fully supported moving towards open data for the infrastructure sector, while 24% partially supported. 69% fully supported accelerating common infrastructure metadata standards, while 22% partially supported. 57% fully supported delivering and retaining digital information, while 34% partially supported. 46% fully supported accelerating investigations on the use of digital twins and preparing for a nation-wide digital twin, while 32% partially supported.

	40% fully supported designing and launching artificial intelligence use-cases, while 36% partially supported.
F4. Respond to demographic change	
Q13. How should communities facing population decline change the way they provide and manage infrastructure services?	Most frequent suggestions on how communities could change the provision and management of their infrastructure to reduce adverse effects as they face population decline were: • Encourage urban to rural migration, including through economic development, job creation, and incentivisation (nsc=145) • Invest in infrastructure to, for example, make it more possible for people to live in those areas while travelling to work elsewhere (nsc=127) • Improved governance (nsc=107) A small number of comments from submissions thought that affected areas should be allowed to decline (nsc=41).
Q14. Does New Zealand need a Population Strategy that sets out a preferred population growth path, to reduce demand uncertainty and improve infrastructure planning?	409 comments from submissions agreed with the need for a Population Strategy. Many submitters' comments that supported a Population Strategy suggested that the strategy review and target immigration into New Zealand (nsc=53), be evidence-based (nsc=39) and focus on dispersing the population (nsc=35). Submitter comments not in support were concerned about the evidence that would be used (nsc=31).
Proposed options to respond to demographic change.	63% fully supported improving analysis of upside and downside risks in infrastructure provision, while 28% partially supported.
F5. Partner with Māori: Mahi Ngātahi	
Q15. What steps can be taken to improve collaboration with Māori through the process of planning, designing and delivering infrastructure?	Of the comments from submissions that mentioned steps to improve collaboration with Māori, 226 submitter comments indicated the need for more representation and/or inclusion. Ideas included: • More meaningful consultation / partnership with Māori (nsc=85) • Co-governance / planning with Māori (nsc=62) • Steer governance culture towards inclusivity / Māori worldview (nsc=30) 149 submitter comments expressed opposition to increasing collaboration with Māori. 79 of these comments were not in favour of collaboration based on ethnicity.
Q16. What steps could be taken to unlock greater infrastructure investment by Māori?	186 comments from submissions mentioned steps to unlock greater infrastructure investment by Māori. Of these, the most frequent suggestions included: • Promote Māori business / investment opportunities (nsc=51)

	• More meaningful consultation / partnership with Māori (nsc=45) • Facilitate Māori investment (nsc=21) 95 comments from submissions indicated opposition to the question, with 41 submitter comments indicating that no further steps are needed to unlock greater infrastructure investment by Māori.
Q17. What actions should be taken to increase the participation and leadership of Māori across the infrastructure system?	Suggested actions to increase the participation and leadership of Māori across the infrastructure system included: • More meaningful consultation / partnership with Māori (nsc=121) • Steer governance culture towards inclusivity / Māori worldview (nsc=59) • Increased opportunities for upskilling and inclusion (nsc=49) • Co-governance / planning with Māori (nsc=26)
F6. Ensure security and resilience of critical infrastructure	
Proposed options to ensure security and resilience of critical infrastructure	83% fully supported identifying critical national infrastructure, while 12% partially supported. 82% fully supported defining critical national infrastructure, while 14% partially supported.

Action Area Two: Enabling Competitive Cities and Regions	
Q18. For the Enabling Competitive Cities and Regions Action Area and the Needs: • What do you agree with? • What do you disagree with? • Are there any gaps?	**Agreement:** 194 submitter comments indicated agreement with the Enabling Competitive Cities and Regions Action Area and Needs. Agreement included: • Coordinate delivery of housing / infrastructure (C2) (nsc=44) • Planning for lead infrastructure (C4) (nsc=39) • Enabling a responsive planning system (C1) (nsc=31) **Disagreement:** 77 submitter comments indicated disagreement with the Enabling Competitive Cities and Regions Action Area and Needs. 14 submitter comments disagreed with tolls and congestion charging. There was also disagreement with a responsive planning system (nsc=15). Of the 16 comments from submissions that disagreed with coordinating housing infrastructure, nine comments suggested that the central government should not get involved in planning. A further nine comments from submissions suggested that cities and regions should not be competitive. **Gaps:** Gaps identified by submitters related to the main themes of coordinated housing delivery (nsc=77), planning for lead infrastructure (nsc=60), good management and governance (nsc=54), improved access to employment through better transport (nsc=46), and the enabling of responsive planning (nsc=28).
C1. Enable a responsive planning system	
Proposed options to enable a responsive planning system	68% fully supported continuing to review and reform urban planning, while 26% partially supported. 65% fully supported standardising planning rulebooks to increase capacity and reduce cost and uncertainty, while 25% partially supported. 50% fully supported setting targets for housing development capacity and triggers for release of additional development capacity, while 38% partially supported. 45% fully supported reviewing and realigning Crown landholdings, while 35% partially supported.

C2. Co-ordinate delivery of housing and infrastructure	
Proposed options to co-ordinate delivery of housing and infrastructure	73% fully supported increasing the use of water-sensitive urban design measures to reduce pressure on water networks, while 21% partially supported. 67% fully supported improving information on infrastructure capacity and costs to service growth, while 26% partially supported. 58% fully supported implementing regional and spatial planning, while 32% partially supported. 58% fully supported conducting post-implementation reviews of transit-oriented development opportunities, while 31% partially supported. 55% fully supported ensuring the provision of three waters infrastructure to enable growth, while 29% partially supported. 50% fully supported volumetric charging to fund a proportion of water infrastructure, while 28% partially supported.
C3. Improve access to employment	
Q19. What cities or other areas might be appropriate for some form of congestion pricing and/or road tolling?	217 submitter comments indicated that the proposal could be appropriate for the four North Island cities of Auckland, Wellington, Tauranga, and Hamilton, while 131 comments from submissions suggested other areas, such as Christchurch and Dunedin. 104 comments from submissions opposed congestion pricing and road tolling. 17 submitter comments indicated that tolling unfairly targets low-income earners.
Q20. What is the best way to address potential equity impacts arising from congestion pricing?	Suggestions were proposed by submitters to address the equity impacts that could potentially arise from the option of congestion pricing. Propositions of note were: • Economic: decrease or subsidise the cost of public transport (nsc=53) • Infrastructure: improve public transport as an appropriate alternative (nsc=86) 78 comments from submissions suggested that impacts could not or should not be addressed.
Proposed options to improve access to employment	41% fully supported using congestion pricing to plan for new transport infrastructure, while 24% partially supported. 40% fully supported implementing congestion pricing and/or road tolling to help improve urban accessibility, while 25% partially supported. 37% fully supported planning for congestion pricing schemes in other New Zealand cities, while 25% partially supported.

C4. Plan for lead infrastructure	
Q21. Is a 10-year lapse period for infrastructure corridor designations long enough? Is there a case for extending it to 30 years consistent with spatial planning?	95 submitter comments agreed that a 10-year lapse period for infrastructure corridor designations is appropriate, while 90 submitter comments indicated that there is a case for extending the period, potentially to 30 years. 15 comments from submissions noted the criticality of efficient planning and procurement practices when aiming for a 10-year period.
Q22. Should a multi-modal corridor protection fund be established? If so, what should the fund cover?	257 comments from submissions supported the establishment of a protection fund for a multi-modal corridor. 136 submitter comments suggested using the fund for transport infrastructure, particularly the connectivity of the rail network (nsc=34), roading networks (nsc=31), and active travel (nsc=29).
Proposed options to plan for lead infrastructure	50% fully supported developing a lead infrastructure policy, supporting implementation guidance, and a corridor protection evaluation methodology, while 35% partially supported. 47% fully supported enabling lead infrastructure corridor protection through resource management reform, while 35% partially supported. 43% fully supported establishing a corridor reservation fund to protect lead infrastructure corridors, while 36% partially supported.
C5. Improve regional and international connections	
Q23. What infrastructure actions are required to achieve universal access to digital services?	294 comments from submissions suggested that infrastructure actions are required to achieve universal access to digital services. 146 submitter comments suggested increasing network coverage and provision, while 70 comments from submissions indicated the need for increasing digital accessibility.
Proposed options to improve regional and international connections	71% supported updating the 2006 digital strategy, while 22%, partially supported. 69% supported developing a long-term national supply chain strategy, while 25% partially supported.

Action Area Three: 'Creating a Better System'	
Q24. For the 'Creating a Better System' Action Area and the Needs: • What do you agree with? • What do you disagree with? • Are there any gaps?	**Agreement:** 49 comments from submissions agreed with the Creating a Better System Action Area and Needs. 15 of these comments supported the integration of existing infrastructure institutions. A further 14 submitter comments agreed with an equitable distribution of funding and financing. **Disagreement:** 9 comments from submissions that indicated disagreement with the Creating a Better System Action Area and Needs disagreed with the Need to ensure equitable distribution of funding and financing. **Gaps:** Gaps identified in submitter comments for Creating a Better System Action Area and Needs largely related to: • Governance and management, such as the need for more comprehensive planning and improved cost-benefit analysis (nsc=124) • Equitable funding and financing (nsc=26) • Improving project procurement and delivery (nsc=18)
S1. Integrate infrastructure institutions	
Q25. Does New Zealand have the right institutional settings for the provision of infrastructure?	355 comments from submissions indicated that the current institutional settings in New Zealand were incorrect and potentially ineffective. The two main reasons provided for this were fragmented governance (nsc=54) and bureaucracy (nsc=38).
Q26. How can local and central government better coordinate themselves to manage, plan and implement infrastructure?	397 comments from submissions suggested ways in which local and central governments could better coordinate themselves to manage, plan and implement infrastructure. The most frequent themes were: • Government behaviour (nsc=145): the need for improved collaboration and sharing of vision (nsc=87), with bureaucracy addressed (nsc=28) • Government roles and responsibilities (nsc=119): the need to address planning (nsc=22) • Governance structures (nsc=90): including more central government oversight (nsc=16), funding (nsc=14), and authority (nsc=10) • Government regulation (nsc=43): including the need for community centred decision making (nsc=15), and the standardisation of rules (nsc=14)

Q27. What principles could be used to guide how infrastructure providers are structured, governed and regulated?	Submitter comments indicated principles relating to: • Improved management (nsc=39) • Increased community engagement (nsc=29) • Collaboration (nsc=27) • Equality and fairness (nsc=22) • Transparency (nsc=18) • Regulation (nsc=17) • Long-term flexible planning (nsc=17)
Proposed options to integrate infrastructure institutions	72% fully supported reviewing roles and functions of local government and other infrastructure providers, while 20% partially supported. 59% fully supported clarifying funding of spatial plans received, while 32% partially supported.
S2. Ensure equitable funding and financing	
Q28. What steps could local and central government take to make better use of existing funding and financing tools to enable the delivery of infrastructure?	Key propositions from submitter comments related to the reviewing of fiscal policies and funding allocation (nsc=72), with the need to increase efficiency and accountability of governance and management (nsc=45).
Q29. Are existing infrastructure funding and financing arrangements suitable for responding to infrastructure provision challenges? If not, what options could be considered?	279 comments from submissions indicated that existing infrastructure funding arrangements were unsuitable for addressing infrastructure provision challenges. Options suggested by submitters to improve these arrangements included reviewing fiscal policies and financial allocation (nsc=123), such as a greater use of targeted taxes (nsc=45) and increasing the funding available (nsc=37). Additionally, submitter comments suggested changing governance structures and practices (nsc=51). By comparison, 20 comments from submissions suggested that the existing arrangements were sufficient.
Q30. Should local authorities be required to fund depreciation as part of maintaining balanced budgets on a forecast basis?	138 comments from submissions indicated agreement with local authorities being required to fund depreciation. 33 submitter comments were in disagreement.

Proposed options to ensure equitable funding and financing	45% fully supported rating of Crown land, while 25% partially supported. 44% fully supported developing a transition plan for transport funding, while 33% partially supported. 37% fully supported using value-capture mechanisms to fund infrastructure growth, while 42% partially supported. 34% fully supported funding tourism infrastructure, while 43% partially supported. 26% fully supported enabling land-value change as a basis for a targeted rate, while 33% partially supported.
S3. Make better use of existing infrastructure	
Q31. What options are there to better manage and utilise existing infrastructure assets?	Two key themes emerged from submitter responses: • Better administration and management of infrastructure (nsc=138) • A focus on transport infrastructure (nsc=70), including investing for active travel (nsc=25), and improving the rail network (nsc=17)
Q32. Are there benefits in centralising central government asset management functions? If so, which areas and organisations should this apply to?	216 submitter comments agreed that there might be benefits compared with 77 submitter comments that considered there to be no benefits from centralisation. Benefits identified included transport and freight (nsc=21), the energy grid (nsc=15), and three waters (nsc=15). 17 comments from submissions that did not support centralisation, noted concerns about central government not understanding local requirements.
Proposed options to make better use of existing infrastructure	59% fully supported consideration of non-built options, while 33% partially supported. 51% fully supported investigating the establishment of a New Zealand Government Asset Management Team, while 33% partially supported. 50% fully supported improving pricing to optimise use of existing infrastructure, while 34% partially supported.
S4. Require informed and transparent decision-making	
Proposed options to require informed and transparent decision-making	77% fully supported undertaking cost benefit analyses of all projects over $150 million, while 18% partially supported. 71% fully supported undertaking a post-implementation review of all major infrastructure projects, while 23% partially supported. 65% fully supported developing a cost benefit analysis manual for new water infrastructure, while 27% partially supported. 63% fully supported reviewing the social discount rate policy, while 30% partially supported.

S5. Develop and prioritise a pipeline of work	
Proposed options to develop and prioritise a pipeline of work	73% of submitters fully supported developing a priority list of projects and initiatives, while 24% partially supported. 71% fully supported measuring sector utilisation, while 22% partially supported. 68% fully supported improving the use of the pipeline for commercial decision-making, while 28% partially supported.
S6. Improve project procurement and delivery	
Q33. What could be done to improve the procurement and delivery of infrastructure projects?	Submitters responded with these proposals: • Improved governance (nsc=163), including through clear briefs and frameworks (nsc=24), the employment of expert knowledge (nsc=20), and working to a pipeline or deadline (nsc=14) • Improved economic management (nsc=56), including through improved and holistic tendering and procurement processes (nsc=18), more accurate costings and forecasts (nsc=9), and increased competition (nsc=8) • General ideas (nsc=44) included addressing environmental sustainability (nsc=7), and encouraging community involvement (nsc=5) • Improved regulatory management (nsc=25), improving contracting (nsc=12), and the expansion of procurement guidelines (nsc=3)
Q34. Do you see merit in having a central government agency procure and deliver infrastructure projects? If so, which types of projects should it cover?	319 comments from submissions agreed that there is merit in having a central agency delivering projects including transport (nsc=34), water (nsc=25), and energy (nsc=18). 65 submitter comments indicated that there is no merit in having a central agency delivering projects. 15 of these comments expressed concerns with government management of projects.
Proposed options to improve project procurement and delivery	54% fully supported revisiting New Zealand's approach to market-led proposals, while 32% partially supported. 43% fully supported establishing a major projects leadership academy, while 37% partially supported.
S7. Reduce costs and improve consenting	
Q35. What could be done to improve the productivity of the construction sector and reduce the cost of delivering infrastructure?	The most frequent suggestions were: • Reduce and improve regulations, consent processes, and the bureaucracy that delays projects (nsc=57) • Address the cost of materials (nsc=53) • Standardise infrastructure (nsc=20).

Proposed options to reduce costs and improve consenting	62% fully supported measuring and benchmarking infrastructure cost performance, while 30% partially supported. 61% fully supported developing a planning system that is more enabling for infrastructure, while 30% partially supported. 56% fully supported developing a standardised approach to infrastructure design, while 33% partially supported.
S8. Activate infrastructure for economic stimulus	
Q36. What components of the infrastructure system could have been improved to deliver effective stimulus spending during the Covid-19 pandemic?	154 submitter comments related to infrastructure generally with 70 responses related to transport infrastructure specifically, mainly developing and improving the road network (nsc=22), the rail network (nsc=19), and infrastructure for active travel (nsc=12). Furthermore, submissions focused on the economic aspects of infrastructure (nsc=43), environmental considerations (nsc=33), governance and management (nsc=29), and community considerations (nsc=23).
Proposed options to activate infrastructure for economic stimulus	60% fully supported evaluating stimulus impacts, while 31% partially supported. 58% fully supported developing ready to build infrastructure, while 32% partially supported.
Other comments	
General comments	128 comments from submissions were about the consultation itself, 80 of these expressed concerns and 48 expressed appreciation. A further 112 comments from submissions expressed concerns and ideas for infrastructure provision, echoing points made elsewhere. Some of these points included the need for improved management and governance (nsc=107), the need to plan for and address concerns around climate change and sustainable development (nsc=33), and the need for more comprehensive and equitable planning (nsc=22).

2. The consultation process and submissions

A consultation document was made available to the public in hard copy and through Te Waihanga's website.[3] The document outlined Te Waihanga's proposed vision, outcomes and principles. It also outlined the challenges for New Zealand's infrastructure and the areas where action is needed. Submissions were received through either the PublicVoice online survey interface, by email or in hardcopy. A total of 721 submissions were received.

2.1 Where did submissions come from?

541 submissions came from individual submitters while 178 were on behalf of organisations. A list of the organisations that submitted can be found in Appendix 2 — Organisations that submitted. Of the 721 submissions received, 68 were written submissions received in hardcopy or via email.

2.2 PublicVoice online survey interface

The consultation questions were developed by Te Waihanga and were included in the consultation document. The only mandatory questions in the online survey were those related to the submitters' details. A section was included at the end of the consultation ("general comments") which allowed submitters to provide feedback on any parts of the Strategy that were not included in a specific question.

The questions asked via the PublicVoice online survey interface are listed in Appendix 1 — PublicVoice online survey interface questions.

2.3 Written submissions received via email or hardcopy

68 written submissions were received. Some of these submissions indicated which consultation questions they were directly answering. These submissions were processed and analysed according to the questions. Whenever submissions did not follow a set structure, they were analysed as per the consultation questions they seemed to answer most closely.

[3] New Zealand Infrastructure Commission, Te Waihanga. https://infracom.govt.nz/strategy/have-your-say/.

2.4 Data analysis methodology

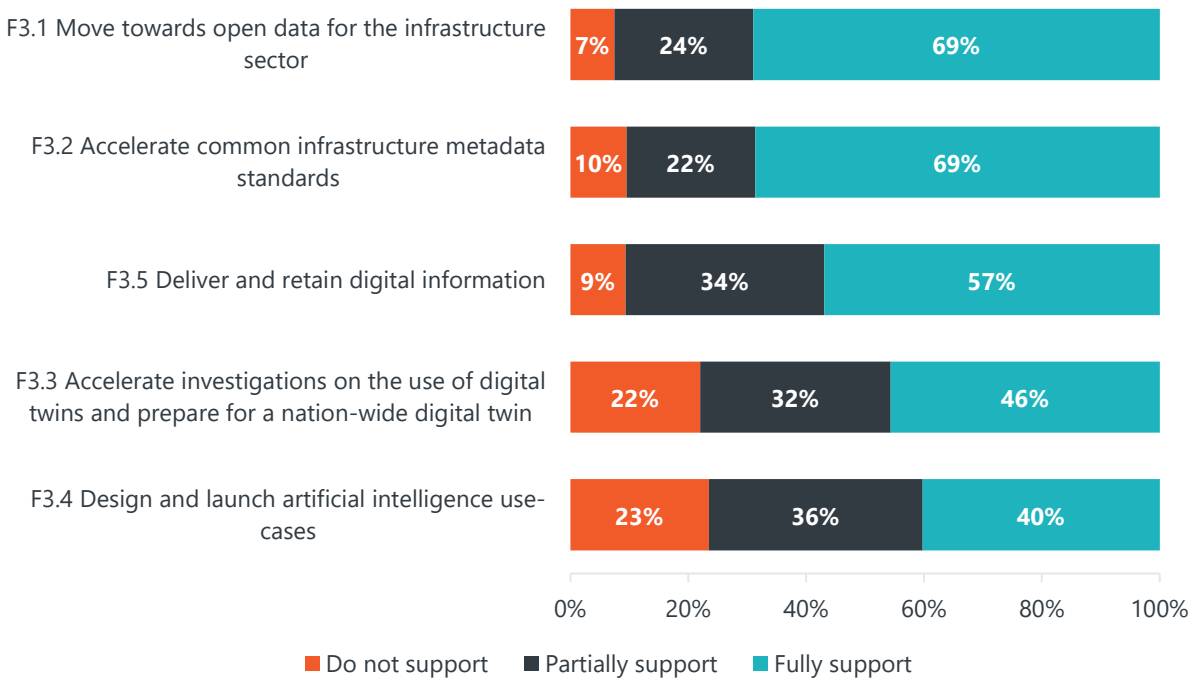
An online survey interface was built for the collection of submissions. The interface questions formed the framework of analysis for all submissions, as well as how they have been reported.

2.5 Statistical analysis

Submissions made through the interface were able to select their preferences in relation to each of the quantitative questions. Submissions received in written format did not indicate their responses to quantitative questions. As such, statistical analysis of the quantitative questions presented in the report are only representative of submissions made via the online interface. Where submitters indicated their response to a question as 'Don't know', these responses have not been included in the report.

Statistical results are presented as figures. Figure 1 provides an example of how the statistical data is reported for questions in which submitters were given a choice of answers to choose from. Within each data bar, the percentages of 'Do not support', 'Partially support' and 'Fully support' are presented. The size of the bars is proportional to the amount of support.

Figure 1: Example of a statistical analysis table.



2.6 Thematic analysis

The analysis of responses to open-ended interface questions was undertaken by PublicVoice. All submissions that were received both via the online interface and in written format underwent thematic analysis, whereby themes were extracted from the text responses. The foundation for the thematic

analysis used by PublicVoice is the methodology developed by Braun and Clarke, 2006.[4] A team of research analysts identified, analysed and interpreted patterns of meaning within the open-ended responses. Each theme was then analysed for frequency.

The same submission may have been coded multiple times under the same top-level theme or sub-theme, whenever submitters alluded to more than one theme in a single submission or answer. As a result of multiple coding of a single submission, reference is made to the number of submitter comments (nsc) rather than the number of submissions (n) for the qualitative analysis.

Classification of themes

To aid interpretation, the results from the thematic analysis were organised into top-level themes. The most common of these have been listed below and include a brief description of what has been captured under each.

Active transport / micro mobility — includes responses made about all forms of active transport, micro mobility and the infrastructure used to facilitate this.
Climate change and environmental management — includes responses that have referred to climate change in general, as well as specific environmental management themes such as environmental sustainability.
Community — responses that included suggestions or concerns for the community or society have been captured under this top-level theme.
Concerns / requirements for success — this top-level theme has been used to capture concerns expressed by submitters, along with any requirements they deemed essential for success.
Economic — responses with comments regarding financial management / costs, or economics in general, have been captured under this top-level theme.
Energy — includes responses relating to energy infrastructure and energy in general.
Housing — responses relating to housing infrastructure and housing issues have been categorised under this top-level theme.
Infrastructure — includes responses that relate to infrastructure and its provision.
Management / Governance — responses that featured comments relating to management or governance have been included in this top-level theme.
Private transport — includes responses made about private transport and the infrastructure required to facilitate this.
Public transport — includes responses made about public transport and the infrastructure necessary to facilitate this.
Transport — includes responses that relate to transport and transport infrastructure in general.
Waste management — includes responses relating to infrastructure to deal with waste or the management of waste in general.
Water — includes responses relating to water infrastructure or water in general.

Further classification

Submissions were then further categorised into sub-themes under each of these top-level categories.

In instances where comments could fit into more than one theme, they were placed into the theme to which they related more strongly. Tables have also been included to show the frequency of each response to help illustrate their significance, and levels of support. Table 2 provides such an example.

[4] Braun and V. Clarke (2006), 'Using thematic analysis in psychology'. *Qualitative Research in Psychology, 3*(2), 77-101.

Table 2: Example of thematic analysis table

Main theme	Sub themes	Frequency
General gaps		71
	Governance / Management	43
	Improved comprehensive planning	15
	More / improved usage of cost-benefit analysis	5
	Increased centralisation needed	8
	Focus on effectiveness of management	9
	Reduce bureaucracy	6
	Needs a more balanced / sustainable / long-term focus	5
	Community	5
	Give more decision-making power back to communities	5
	More mention of environmental protections	10
	Incentivise to transition to sustainable infrastructure	5
	More / other energy solutions needed	7
	Need to address the skilled labour shortage	6
Gaps in ensuring equitable funding and financing (S2)		16
Gaps in reducing costs and improving consenting (S7)		9
Gaps in better use of existing infrastructure (S3)		6
Gaps in developing and prioritising a pipeline of work (S5)		6
Gaps in improving project procurement and delivery (S6)		5

3. Who we heard from

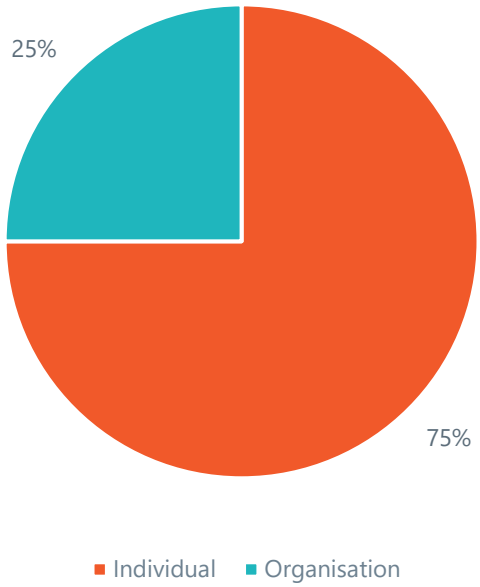
This section provides an overview of the submissions received.

3.1 Overview of submissions

Individuals/organisations

542 (75%) of submissions came from individual submitters, while 179 (25%) were made on behalf of organisations (Figure 2). A list of the organisations which made submissions can be found in Appendix 2 — Organisations that submitted.

Figure 2: Are you responding as an individual or as an organisation? n = 721



Location of submitters

Table 3 shows the location of submitters. Most submitters were based in Auckland and Wellington.

Table 3 Where are you located?

Location	Count
Auckland	198
Wellington	141
Canterbury	94
Waikato	56

Location	Count
Bay of Plenty	37
Northland	31
Otago	30
Manawatū-Whanganui	23
Taranaki	17
Marlborough	11
Hawke's Bay	10
Tasman	10
Nelson	8
Gisborne	6
West Coast	6
Southland	5
Other (please specify)	33

Summary of submissions

4. Proposed vision for infrastructure 2050 | Te tirohanga marohi mō te hanganga 2050

Infrastructure lays the foundation for the people, places and businesses of Aotearoa New Zealand to thrive for generations.

E whakatakoto ana te hanganga i te tūāpapa o te ora o te tangata, o ngā wāhi, me ngā pakihi o Aotearoa kia ora rawa atu mō ngā whakatupuranga.

Looking to 2050, Te Waihanga aims for infrastructure that supports:

- A productive, sustainable and carbon-neutral economy
- Affordable, accessible and healthy housing
- Reliable, affordable and accessible travel options powered by renewable energy
- Clean natural environments and healthy ecosystems
- Access to education, employment, knowledge and recreation
- Safe and healthy communities, iwi, hapū, and whānau
- A globally integrated economy
- Resilience to the stresses and shocks the future will inevitably bring

4.1 (Q1.) Views on the proposed 2050 infrastructure vision for New Zealand

Submissions provided feedback on the proposed infrastructure vision and the aims for New Zealand.

Table 4 and Table 5 highlight the key themes relating to the proposed vision. 275 comments from submitters were in support of the 2050 vision.

100 comments noted governance changes, along with societal changes (nsc=43), are required for the vision to succeed.

Submissions that opposed the vision were sceptical about its potential to be effective.

Aims: Submitters often commented on the aims of the proposed infrastructure vision (Table 6).

The most favoured aims were:

- Reliable, affordable, accessible travel powered by renewables (general support, nsc=61)
- A productive, sustainable, and carbon-neutral economy (general support, nsc=53)

Where opposition to the aims is evident, it relates to the drive for carbon-neutrality (nsc=17). Concerns have also been raised, regarding water infrastructure (nsc=13) and what will be required to achieve a globally integrated economy (nsc=4).

> *"Affordability is mentioned in the context of housing and travel but not energy. We believe this is a critical long term issue for NZ and the vision should include achieving energy security and affordability particularly when taking into account greater levels of electrification in a decarbonised world. Well designed infrastructure can also address inequalities such as digital inequality. We believe that access to affordable data solutions is a key enabler for economic development today and in the future."*
>
> **Organisation**

> *"I would suggest the reintroduction of the Ministry of Works (MOW), which used to deliver key infrastructure in partnership with local government. A modernised MOW could bring an integrated approach to infrastructure delivery of key infrastructure, if operated as a national agency with a 30-year plan. A similar approach is needed for the delivery of three waters infrastructure."*
>
> **Individual**

Table 4 Coded responses for 'Q1. What are your views on the proposed 2050 infrastructure vision for New Zealand?' — Comments on the proposed vision.

Main theme	Sub theme		Frequency
Concerns / requirements for success			306
	Governance		100
		Equity in infrastructure provision is needed	23
		Prefer less focus on Māori	8
		Ensure efficient implementation	13
		Work in partnership with construction sector workers	9
		More meaningful and comprehensive consultation needed	8
		Improved transparency / communication / collaboration	8
		Should be nonpartisan	6
		Independent auditors / regulators required	5
		Procurement process should be streamlined	4
		Requires agency oversight	3
		Bring back a Ministry of Works	3
	Societal		43
		Encourage lifestyle changes by the public	10
		Consider social infrastructure	6
		Need to consider demographic change and social benefits	5
		Ensure reducing excessive consumption is more explicit	5
		Address population growth	4
		Reduce inequality in society	4
		Provide for personal choice and circumstances	3
	Improvement of infrastructure		39
		Current infrastructure needs attention	28
		Develop / improve road network	15
		Improve health infrastructure	4
		Infrastructure should support the lives of those who use it	4
	Prioritisation of vision aims		18
		Need to change order of priorities	6
		More clarification on priorities needed	4
	Environmental		16
		Greater emphasis on environmental sustainability	12
		Greater inclusion of environmental pricing	3
	Aims need to reflect the four well-beings		9
	Skilled workforce needed		8
	Requires locally tailored / scaled responses		6
	Economic		5
	Resilience requires more focus		5
	Cost-effective decision making needed		4
	Redefine infrastructure		4
	Strategy is big city / urban centric		4
	Concerns about how much is being spent on Vision document		3
	The climate change impact on the longevity of Strategy		3
	More holistic perspective regarding a healthy environment needed		3
Support for vision			275
	General support for vision / aims		238
	Support, but needs to be enacted effectively		29
	Support, but difficult to achieve		6

Table 5 Coded responses for 'Q1. What are your views on the proposed 2050 infrastructure vision for New Zealand?' — Comments on the proposed vision.

Main theme	Sub theme	Frequency
Opposition to Vision		142
	Will be ineffective	115
	Strategy is unrealistic / impractical	34
	Strategy not well thought out / comprehensive or clear	34
	Requires fewer / more tailored aims and objectives	9
	Concerns with implementing the Strategy	19
	Economic growth is not sustainable	7
	Proposed solutions will not provide meaningful change	5
	Concerns with centralisation / bureaucracy	13
	Not enough action planned	5
	General opposition to Infracom / the Vision	17
	Strategy is not worth the investment	5
	Carbon neutrality is unrealistic	4
Comments on Vision statement		72
	Wording of statement	26
	Prefer more references to equitability	6
	Concern over wording used in the Vision	4
	Some inconsistencies in definitions	3
	2050 Vision and Te Tiriti o Waitangi	13
	Prefer clearer references to the Treaty in 2050 Vision	10
	Comments on timeline	11
	Reduce delivery time of Strategy	7
	Extend timeline past 2050	4
	Need clear results to aim for	5
	Document is racially biased	3
	Vision does not have community input	3
Support for proposed priorities		5
Support for use of Te Ao Māori perspective		4

Table 6 Coded responses for 'Q1. What are your views on the proposed 2050 infrastructure vision for New Zealand?' — Comments in response to the proposed aims

Main theme	Sub theme			Frequency
Reliable / affordable / accessible travel powered by renewables				117
	General support			61
		Improved public transport infrastructure		37
			Support for improving rail network / connectivity	18
			Support the electrification of public transport	7
			Provide incentives to use public transport	3
		Invest in roads		7
	Concerns / requirements for success			47
		Electric vehicles		27
			Means of production are outside NZ and therefore neglected	9
			Disposal of electric car batteries is concerning	6
			Opposed to proliferation of EVs	6
		Ensure safety		5
	General opposition			9
		Current technology cannot support an EV-based economy		4
A productive, sustainable, and carbon-neutral economy				104
	General support			53
		Aim for an energy regenerative ("circular") economy		14
		Increase target to carbon-negative		7
		Support, so long as it is cost effective		5
	General opposition			39
		Less focus on carbon mitigation/neutrality		17
		Productivity and carbon-neutrality cannot coexist		6
		Disagree with scientific conclusions about climate change		6
		Prefer carbon mitigation to offsetting		3
	Concerns / requirements for success			12
		Need to be pragmatic about this		6
Affordable, accessible, and healthy housing				60
	Concerns / requirements for success			50
		Opposition to central government involvement		8
		Support for increased density and community hubs		6
	General support			10
A globally integrated economy				46
	Concerns / requirements for success			22
		Ensure local population is fully employed first		4
		Try to improve supply chains		4
	General opposition			19
		A globally integrated economy is problematic		4
	General support			4
Resilience to possible future stresses / shocks				43
	Concerns / requirements for success			33
		Promote economic self-sufficiency		25
	General support			8
Clean natural environments and healthy ecosystems				32
	Concerns / requirements for success			22
		Water infrastructure		13
			Not enough being done to create clean waterways	4
			Better usage of rainwater / recycled water	3
			Increase infrastructure around stormwater drains and sewers	3
	General support			10
Safe and healthy communities, iwi, hapū and whānau				25
	Concerns / requirements for success			15
		More focus on rural communities		3
	General opposition			6
		Remove references to iwi, hapū, whānau		4
	General support			4
Access to education, employment, knowledge and recreation				19
	Concerns / requirements for success			15
		Improve the level of education for all		10

Outcomes and principles to guide good infrastructure decision-making | Ngā hua me ngā mātāpono e eke ai ngā whakatau mō te whakatū hanganga

Good decision-making doesn't just happen. It is a conscious and principled process.

All decision-making about infrastructure must be guided by **Te Tiriti o Waitangi** (the Treaty of Waitangi) and its principles, but specifically the obligation to partner with Māori.

As well as this, the New Zealand Infrastructure Commission/Te Waihanga Act 2019 directs Te Waihanga to consider the fundamental principle that infrastructure should support **oranga tangata** or the wellbeing of people. To achieve this, Te Waihanga proposes that infrastructure investment decisions be guided by the following outcomes.

- **Efficient:** Infrastructure decisions provide value for money, meaning that the benefits of infrastructure for economic, social, environmental and cultural wellbeing are larger than the costs to provide it
- **Equitable:** Infrastructure decisions, including those that relate to funding, are fair and inclusive of all New Zealanders and recognise the needs of those who are disadvantaged or vulnerable in our society
- **Affordable:** Infrastructure is affordable for providers and users, which means that we carefully prioritise new investment, while making the most of the infrastructure we already have

Te Waihanga proposes that the outcomes be supported by the following decision-making principles:

- **Future-focused:** We think about the future while learning from the past and ensure that our infrastructure is adaptable and responsive to changing circumstances, including climate change
- **Transparent:** We are open, honest and transparent about how infrastructure decisions are made and the trade-offs we are making between different outcomes
- **Focused on options:** We consider all relevant options to deliver outcomes, including non-built alternatives to physical infrastructure
- **Integrated:** We think across infrastructure networks and avoid siloed thinking and decision-making
- **Evidence-based:** Infrastructure decisions are based on robust and accurate information about costs, benefits, risks and wider positive and negative impacts, including the quantification of costs, benefits and risks wherever possible

> *"The outcomes are supported and [organisation name] welcomes the focus on ensuring efficiency and balancing economic, social, environmental and cultural wellbeing from investment. The principles are also supported."*
>
> **Organisation**

4.2 (Q2.) Views on the chosen decision-making outcomes and principles.

Table 7 shows feedback on the decision-making principles. This feedback resulted in 187 comments from submitters in support while 80 comments were in opposition. 38 comments from submissions opposed using the Treaty of Waitangi as a guiding principle.

Table 7 Coded responses for 'Q2. What are your views on the decision-making principles we've chosen? Are there others that should be included?' — General levels of support for the proposed decision-making principles.

Main theme	Sub theme	Frequency
Support		187
	General support	166
	Support, in principle	21
General concerns / requirements for success		145
	Need more emphasis on climate change / sustainability	54
	Management / Governance	24
	Increased nationalisation of infrastructure	4
	Taxation / funding	4
	Little to no political interference when implementing the plan	4
	Using domestic providers would be beneficial	3
	Requires effective governance	12
	Will require lifestyle changes	5
	Improve rail network / connectivity	3
	A focus on active / public transport required	3
	Simplify regulations surrounding resource consent	3
Oppose		80
	General opposition	28
	Concerns regarding decision making and governance of outcomes	17
	Proposal seems undemocratic and ideological	9
	Unrealistic	8
	Concerns with consultation document	6
	Concerns with centralisation	4
	Concerns regarding capital expenditure	3
Te Tiriti o Waitangi (ToW) as guiding decision-making		67
	General opposition to ToW guiding decision-making	38
	Unsure of ToW relevance to infrastructure	4
	Contradicts equitable outcomes	4
	General support	17
	Concerns / requirements for success	12
	Te Tiriti and the Treaty are different documents	3
	Treaty obligations are not recognised in this document	3
	Needs a principle or outcome to reflect this commitment	3

Of the five proposed decision-making principles, 'evidence-based', 'integrated', and 'future focused' received the most feedback.

Table 8 points out potential requirements for success. Examples are:

- Integrated: accessible to all (nsc=48)
- Future-focused: requires an intergenerational approach (nsc=22)
- Evidence-based: more emphasis on cost-benefit analysis (nsc=20)

Table 8 Coded responses about the decision-making principles for 'Q2. What are your views on the decision-making principles we've chosen? Are there others that should be included?' — Comments on the proposed decision-making principles.

Main theme	Sub theme	Frequency
Future-focused		114
	Concerns / requirements for success	85
	Requires an intergenerational / long-term approach	22
	Need to look beyond 2050	3
	Flexibility is required for future changes	11
	Emphasise resilience	7
	Consider practical, low-cost solutions	5
	Past lessons have not been taken into consideration	4
	More emphasis on quality of life	4
	Future-focused is a subjective term	3
	Do not indebt future generations	3
	General support	26
	General opposition	3
Integrated		107
	Concerns / requirements for success	71
	Accessible to all	48
	Meaningful public participation / decision making	27
	Infrastructure provision should be spread across NZ	7
	Needs to include networks / sectors / levels of governance	3
	General support for the integrated principle	28
	General opposition to integrated principle	8
Evidence-based		94
	Concerns / requirements for success	72
	More emphasis on cost-benefit analysis needed	20
	Concerns over the calculation of non-economic benefits	13
	More accurate demand / financial forecasting	8
	Improvement in data quality needed	7
	All principles should be scientific and not political	5
	Do not over emphasise the risks	4
	Ensure that decision-makers are well-informed	3
	Support for evidence-based principle	19
Transparency		44
	Concerns / requirements for success	29
	Government is not transparent	10
	General concerns regarding transparency	8
	Influence of lobbyists should be transparent	3
	Be transparent regarding decisions / trade-offs	3
	Support for transparency	15
Focused on options		36
	Concerns / requirements for success	26
	Should be flexible to suit different needs	16
	Must include resilience	5
	General support	10

Feedback was provided on the three proposed outcomes (efficient, equitable, affordable), and has been presented in Table 9. Of these, 73 comments from submissions were about 'equitable' outcomes.

Table 9 Coded responses about the proposed outcomes for 'Q2. What are your views on the outcomes we've chosen? Are there others that should be included?' — Comments on the proposed outcomes.

Main theme	Sub theme	Frequency
Equitable		73
	Concerns / requirements for success	56
	Inequality in focusing on Māori	14
	Equity in infrastructure provision is required	11
	Focus on equality of opportunity	5
	Intergenerational equity needs to be addressed	5
	Equity should apply to rural communities too	3
	Support for equity	15
Efficient		60
	Concerns / requirements for success	46
	Improve efficiency of current infrastructure	7
	Service delivery should be prompt	7
	Often, a higher cost option is necessary for optimum outcome	7
	How will this be measured?	5
	Shorten decision-making timelines	3
	Do not conflate this with profitability	3
	Support for efficiency	13
Affordable		45
	Concerns / requirements for success	36
	Consider lifelong solutions for cost-effectiveness	6
	Will be covered by equitability	5
	Consider non-built alternatives	4
	Funding must be sustainable	3
	Concerned about affordability of debt	3
	Infrastructure decisions need to be based on accurate costing	3
	General support	9

Submitters also proposed other decision-making principles, and these are noted in Table 10. Seven submitter comments suggested that 'resourceful' could be an additional decision-making principle.

> *"[Organisation name] recommends that the definition be inclusive of those who are financially disadvantaged under the category of 'disadvantaged or vulnerable'. This issue reflects back to the earlier point of ambiguity being a potential issue in measuring the effectiveness of incorporating these principles. [Organisation name] recommends a breakdown of the criteria around what makes a person or a group 'disadvantaged' or 'vulnerable'."*
>
> **Organisation**

"Overarching future-focussed strategy: The focus in the current vision is on current and legacy issues. There should be more of an overarching strategy based around a vision of a future state."

Organisation

Table 10 Coded responses regarding other principles and outcomes to be included for 'Q2. What are your views on the decision-making principles we've chosen? Are there others that should be included?' — Other decision-making principles to be included.

Main theme	Sub theme	Frequency
Resourceful		7
Working collaboratively		6
Transformative / adaptive		6
Resilience		6
More use of referenda		4
Financial sustainability		4
Accountability		4
Climate change / sustainability		3
Boldness		3
Holistic		3
Value		3

"With the challenges at stake, where overcoming them will require joint efforts and with the speed of change in today's world, the outcomes could be more focused, for example Adaptable: Collaborative: Resilient."

Organisation

"Good three outcomes. However critically missing sustainable. Sustainable development must be tied in with an efficient affordable system for all. "

Individual

The challenges for New Zealand's infrastructure | Ngā raruraru e pā ana ki ngā hanganga o Aotearoa

New Zealand is facing some major challenges that can be linked back to infrastructure. If we don't act, these will harm our economic future and damage our society and environment. These challenges include:

- Improving New Zealanders' access to safe drinking water
- Managing our three waters infrastructure (drinking water, stormwater and wastewater) to reduce pressure on the environment
- Ensuring that New Zealanders have access to housing that is safe, warm and affordable
- Building homes quickly enough to meet demand, without creating low-quality short-lifespan housing and putting pressure on infrastructure networks (like electricity) due to poor design
- Avoiding unnecessary congestion in urban areas
- Adapting to and mitigating the effects of climate change
- Adapting to rapid changes in technology and protecting against risks from cyber security
- Making the best use of what we already have through improved efficiency and performance of networked infrastructure

4.3 (Q3.) Other infrastructure issues, challenges and opportunities that should be considered

Submitters were asked if there are any other infrastructure issues, challenges and opportunities that should be considered, and these responses have been characterised in Table 11, Table 12 and Table 13.

200 comments related to greater consideration for transport. Submissions focused on both public and private transport.

Other submitters expand on the challenges and opportunities noted by Te Waihanga including the need to improve current infrastructure (n=99), increase housing stock (nsc=65), encourage better town planning (nsc=29), increase the focus on climate change (nsc=42), and facilitate more water storage requirements (nsc=25).

Additional ideas include the diversification of energy generation (nsc=43) and improving waste management infrastructure (nsc=12).

Table 11 Coded responses for 'Q3. Are there any other infrastructure issues, challenges or opportunities that we should consider?'

Main theme	Sub theme	Frequency
Transport		200
	Private Transport	60
	Improve road infrastructure for efficient private use	40
	Reduce reliance on private cars	9
	Improve EV charging infrastructure / networks	5
	Public Transport	40
	Improve public transport network and access	37
	General transport	36
	Address congestion / promote good traffic flow	21
	Combine high density housing with sustainable travel methods	4
	Railways	31
	Improve / extend / electrify rail lines for passengers / goods	31
	Active transport	28
	Improve access to and safety of active transport	23
Governance / Management		190
	Democracy and accountability required in governance	66
	Need to address and improve management	41
	Increased diversity in the infrastructure sector	5
	A long term view needs to be taken	4
	Accurate funding/time projections	3
	3 year political term disrupts project delivery	3
	Issue of bureaucracy / distrust of government	10
	Centralised infrastructure control will reduce efficiency	14
	Follow international innovations / best practice	9
	Possible reduction in resource consenting authorities	9
	Greater policy insight / understanding and coherence	6
	Siloed governance to be addressed for collaboration	5
	Challenge of environmental disasters and geopolitical events	4
	Focus on domestic suppliers and producers	4
	Require better prior planning	4
	Central government to subsidise local authorities	3
	Increased Māori participation needed	3
	Incorporate spatial planning in decision making	3
	Challenge of short electoral cycle	3
Infrastructure		171
	Fix / improve current infrastructure	99
	Poor maintenance / longevity of infrastructure is a challenge	31
	Require resilient / versatile infrastructure	3
	Improve health infrastructure	17
	Improve the mental health system	3
	Improve existing water infrastructure	13
	Improve digital infrastructure	10
	Improve education infrastructure	3
	Improve equity of access / distribution	11
	Four well-beings should be at centre of infrastructure system	7
	Other infrastructure requiring investment	6
	Planning for future trends	4
	Less privatisation of infrastructure	4
	Ensure a secure supply of aggregate needed	3
	Infrastructure should change alongside society	3

"People are showing a clear preference for improving public transport as a potential solution."

Organisation

Table 12 Coded responses for 'Q3. Are there any other infrastructure issues, challenges or opportunities that we should consider?'

Main theme	Sub theme	Frequency
Society		141
	Population growth	31
	Develop infrastructure at pace with growth	12
	Limit population growth to suit the infrastructure capacity	11
	Infrastructure should promote the wellbeing of society	21
	Limited skilled labour force is a challenge	15
	Improve the education system / contribute to social education	10
	Unfair risk / health / wellbeing distribution	10
	Address mental and physical wellbeing of construction workers	9
	Ensure equality across society	9
	Encourage resilience	7
	Need to make changes that benefit rural areas too	5
	Encourage stewardship / civic responsibility	4
	Build more community hubs	4
	Tough to decide on most efficient use of resources	3
	Reduce excessive consumption	3
	Skills and capacity gaps	3
Housing		130
	Increase housing stock	65
	Focus on high density housing developments	22
	Streamline / reduce housing consent process	16
	Increased use of standardisation in housing	5
	Repurpose vacant buildings	4
	Improve the capability of the building sector	4
	Housing should promote resilience	3
	Encourage better town planning	29
	Reduce urban sprawl	8
	Improve / incentivise housing quality	16
	Need to ensure other infrastructure can support more housing	11
Climate change and environmental management		103
	Climate change	42
	Should be the most important issue	5
	Will need to build resilience in response to this	5
	Mitigation should be actively worked towards	5
	Issue of mistrust of scientific evidence for climate change	4
	Focus on adaptation	4
	Modelling of climate change effects on infrastructure	3
	Natural Disasters	17
	Include resilience to natural hazards/disasters	11
	Greater focus on managed retreat	5
	Maintain natural environments	13
	Should prioritise the preservation of productive land	6
	Reverse previous environmental damage	9
	Transition to a circular model for the economy	6
	New infrastructure projects should aim to reduce carbon	3
Water		89
	Build additional dams / water storage tanks	25
	Mandate water collection systems	6
	Encourage individual-level solutions	4
	Water quality should be of the highest importance	16
	Opposed to the reform of Three Waters	8
	Stormwater	8
	Better usage of stormwater to minimise impact	8
	Treat and recycle stormwater	3
	Halt the export of water	7
	Reduce pollution levels in rivers	6
	Drinking water	3
	Water sensitivity should be a key factor for all projects	3
	Implement water metering as an efficiency measure	3
	Better utilisation of wastewater	3

Table 13 Coded responses for 'Q3. Are there any other infrastructure issues, challenges or opportunities that we should consider?'

Main theme	Sub theme	Frequency
Economics		68
	Economic development	62
	Develop and diversify NZ (local) economy	9
	Improve equity / provision and efficiency of spending	8
	Affordability and investment priority	5
	Incentivise more sustainable practices	3
	Taxation	6
Energy		60
	Diversify energy generation and grid	43
	Focus on renewables	9
	Distributed energy generation	7
	Consider localised generation	4
	Invest in fossil fuel exploration and use	3
	Invest in energy storage solutions	3
	Electric vehicles may strain electricity supply	6
	Equitable access and distribution of energy required	5
Waste management		29
	Improve waste management infrastructure	12
	Better recycling infrastructure	9
	Incinerate of waste	3
Private sector challenges		18
	Equitable payment for construction workers / danger pay	9
Agriculture		11
	Promote sustainable farming practices and crops	9
Telecommunications		8
	Resilience of current technology needs addressing	5

Table 14 Coded responses for 'Q3. Are there any other infrastructure issues, challenges or opportunities that we should consider?' — General comments

Main theme	Sub theme	Frequency
General comments		22
	Need to put plan into action	5
	Make the consultation process more accessible to all	3
	The plan is narrow in scope	3
Edits to challenges in consultation document		10
	Change to safe, warm, and affordable housing	4
	Change to avoiding congestion	4

"He Tūāpapa ki te Ora focuses on introducing metering as an efficiency measure. This should be supplemented by a focus on the benefits of deploying a broader suite of measures, for example water storage, water recycling, leak reduction, and water efficient technologies and appliances."

Organisation

"Ensuring all NZers have easy access to green spaces & healthy native forest & marine environments for recreation, health & wellbeing. Particularly those in built up urban environments. Building upwards and how we bring clean air and natural green spaces to urban environments. Providing enough land for future transportation options such as monorail, trains, cycleways and walkways. Putting aside more land by riparian strips and coast to allow ample access to the ocean and waterways."

Individual

5. Areas where action is needed to achieve the 2050 vision Ngā wāhanga hei whakatutuki i te tirohanga 2050

New Zealand's infrastructure sectors have been closely examined for common problems and opportunities. Information from that review, and any prior engagement, was used by Te Waihanga to undertake an infrastructure needs assessment, as required by the New Zealand Infrastructure Commission/Te Waihanga Act 2019. That assessment helped to identify 19 Needs (areas where change will be needed to improve New Zealand's infrastructure system). These have been categorised into three Action Areas, as summarised in Table 15.

Table 15 Action Areas with associated needs

Action Area	Needs
1. **Building a Better Future:** Delivering infrastructure that is resilient to stresses and shocks and ready for change.	1. Prepare infrastructure for climate change (F1) 2. Transition energy infrastructure for a zero-carbon 2050 (F2) 3. Adapt to technological and digital change (F3) 4. Respond to demographic change (F4) 5. Partner with Māori: Mahi Ngātahi (F5) 6. Ensure security and resilience of critical infrastructure (F6)
2. **Enabling Competitive Cities and Regions**: Ensuring that our infrastructure systems support the needs of people living in cities and regions and improve our connections both within New Zealand and with our markets overseas.	1. Enable a responsive planning system (C1) 2. Coordinate delivery of housing and infrastructure (C2) 3. Improve access to employment (C3) 4. Plan for lead infrastructure (C4) 5. Improve regional and international connections (C5)
3. **Creating a Better System:** A step change in how we plan, design, fund and deliver infrastructure.	1. Integrate infrastructure institutions (S1) 2. Ensure equitable funding and financing (S2) 3. Make better use of existing infrastructure (S3) 4. Require informed and transparent decision-making (S4) 5. Develop and prioritise a pipeline of work (S5) 6. Improve project procurement and delivery (S6) 7. Reduce costs and improve consenting (S7) 8. Activate infrastructure for economic stimulus (S8)

5.1 Action Area One: Building a Better Future | Te whakarite i tētahi anamata pai ake

Most infrastructure has a long lifespan. The hydro dams, bridges, pipes, wires and buildings around us may last for 100 years. Some will last longer. This means that today's decisions about what to build, and where, will stay with us and inevitably shape the way we live into the future. We need to be thinking carefully about the future we want when planning for new infrastructure and design with the flexibility of use in mind, adopting a 'long life, loose fit' approach.

There are some big challenges heading our way.

- The world's climate is changing, and this will have dramatic effects on how and where we live, work and play.
- Our population is growing (especially in the Auckland – Hamilton – Tauranga triangle), it is ageing, and it is becoming more ethnically diverse. Infrastructure will need to keep up with this growth and need to function in different ways to suit the needs of a changing population.
- Technology is changing rapidly. This provides real opportunities to revolutionise our infrastructure sectors, but technology may also disrupt traditional business models and have unintended negative consequences.

Taken collectively, this degree of change will require our infrastructure to be flexible, able to withstand future stresses and shocks, and be adaptable to changing needs.

The areas in which Te Waihanga believe change will be needed for Building a Better Future are as follows:

1. Prepare infrastructure for climate change.
2. Transition energy infrastructure for a zero-carbon 2050.
3. Adapt to technological and digital change.
4. Respond to demographic change.
5. Partner with Māori: Mahi Ngātahi.
6. Ensure the security and resilience of critical infrastructure.

(Q4.) Overview of responses to the 'Building a Better Future' Action Area and Needs

There was a high degree of agreement for Action Area One and its associated Needs, with 292 comments from submitters indicating some form of support.

Agreement: responses indicating agreement with the 'Building a Better Future' Action Area and Needs were categorised into themes and can be seen in Table 16. Submitters expressed both general agreement with the Action Area and its Needs (nsc=101), as well as the specific needs they supported. The Need that attracted the most support was "preparing infrastructure for climate change (F1)", with 77 comments.

Table 16 Coded responses for 'Q4. For the 'Building a Better Future' Action Area and the Needs: What do you agree with?' — Agree.

Main theme	Sub themes	Frequency
General agreement with Action Area and Needs		101
	Generally agree	72
	Agree with goals but concerned with implementation	13
	Lifelong solutions for cost-effectiveness	6
Agree with preparing infrastructure for climate change (F1)		77
	Agree with driving a culture of waste minimisation (F1.7)	10
	Agree with efficient pricing of waste (F1.8)	9
	Agree with non-built transport solutions (F1.4)	7
	Agree with adapting business case guidelines (F1.1)	6
	Agree with bright line infrastructure resilience test (F1.3)	4
	Agree with climate change uncertainty (F1.2)	4
Agree with adapt to technological and digital change (F3)		31
	Growing need in light of autonomous vehicles	9
	Agree with F3.2 & 3.3	5
Agree with ensuring security / resilience of critical infrastructure (F6)		30
	Agree with defining critical national infrastructure (F6.1)	6
	Agree with identifying critical national infrastructure (F6.2)	5
Agree with transitioning energy infrastructure for a zero-carbon 2050 (F2)		30
Agree with partnering with Māori: Mahi Ngātahi (F5)		13
Agree with responding to demographic change (F4)		10

> *"The council strongly supports a partnership approach with Māori to inform Infrastructure investment and to ensure infrastructure is resilient and meets the needs of all New Zealanders."*
>
> **Organisation**

Disagreement: Table 17 summarises the 168 comments from submissions that raised some form of disagreement. Some went into more detail regarding their disagreement. For these:

- 35 comments from submissions disagreed with partnering with Māori: Mahi Ngātahi (F5)
- 27 comments from submissions disagreed with the management and/or governance of infrastructure

> *"Agree with most of these. "Transition energy infrastructure for a zero-carbon 2050" should be strengthened to achieve goals compatible with Aotearoa's just contribution to the global effort to keep global warming below 1.5°C. This requires a massive reduction in net emissions (at least 80%) by 2030."*
>
> **Individual**

Table 17 Coded responses for 'Q4. For the 'Building a Better Future' Action Area and the Needs: What do you disagree with?' — Disagree.

Main theme	Sub themes	Frequency
General disagreements with Action Area and Needs		77
	Management / Governance	27
	Concerns regarding bureaucracy / delays in implementation	14
	Concern over centralisation of decision-making	7
	Disagree with consultation process	18
	Ideological / city-centric nature of strategy	10
	General disagreement	6
	Too much emphasis on roading	4
	Opposed to competitive cities and regions	4
Disagree with partnering with Māori: Mahi Ngātahi (F5)		35
	All citizens should be treated equally	21
	Less emphasis on partnership with Māori: Mahi Ngātahi	12
Disagree with preparing infrastructure for climate change (F1)		17
	Disagree with preparing infrastructure for climate change	11
Disagree with ensuring security and resilience of critical infrastructure (F6)		12
	Focus on critical infrastructure	8
	Disagree with walkways and cycleways classified as critical	3
Disagree with transitioning energy infrastructure for a zero-carbon 2050 (F2)		12
	Disagree with zero-carbon at any cost	5
	Zero-carbon 2050 goal is a strain on the economy	3
Disagree with responding to demographic change (F4)		10
	Managed immigration	5
Disagree with adapting to technological and digital change (F3)		5

Gaps: Submitters also provided suggestions for any 'gaps', or issues that should be included in this Action Area. These gaps have been displayed in both Table 18 and Table 19. 219 comments from submissions said that there were general gaps in this Action Area, with 86 comments regarding management and/or governance. 'Preparing infrastructure for climate change' was the Need that submitters felt had the most gaps (nsc=140).

> *"By contrast, hyperbolic discounting applies a progressively lower rate as the benefits and costs become more distant in the future. Because future time periods are discounted less, the time horizon over which policy options are considered can also be extended, allowing for the consideration of impacts much further into the future."*
>
> **Organisation**

> *"Congestion pricing can and should fund PT infrastructure."*
>
> **Individual**

Table 18 Coded responses for 'Q4. For the 'Building a Better Future' Action Area and the Needs: Are there any gaps?' — Gaps identified.

Main theme	Sub theme	Frequency
General gaps in Action Area and Needs		219
	Management / Governance	86
	Increased communication / consultation / collaboration	11
	Develop a strategy and follow it	11
	Focus on delivering results rather than bureaucracy	10
	Invest more in supporting / training / growing the workforce	7
	Integrated planning required	5
	Maintain / build international ties	3
	Transparency of projects	3
	Regulatory	3
	Decrease regulations for development	3
	Transport	51
	Transport infrastructure	36
	Develop / improve road network	11
	Improve / electrify public transport network and access	7
	Develop / improve / electrify rail network / connectivity	6
	Invest in infrastructure for active travel	5
	Low carbon transport	4
	Disincentivise frequent car usage	6
	More support for EVs	5
	Community focus	32
	Need to address poverty and unemployment	7
	Invest in education	6
	Consultation Process	3
	Greater focus on the needs of an aging population	3
	Resource management	11
	Improve the design / effectiveness of water infrastructure	6
	Focus on housing development	11
	Infrastructure development	9
	Acknowledgment that there are gaps in action area	4
	Skills shortages in NZ, hindering growth, need addressing	4
Gaps in preparing infrastructure for climate change (F1)		140
	Address environmental impacts of infrastructure	16
	Focus on sustainable development and wellbeing	11
	Develop a waste management and recycling plan	7
	Lack of direction around adaptation planning	5
	Consider the prevention of waste where possible (F1.7)	5
	Environmental taxation needed	4
	Cost benefit analysis for climate outcomes	4
	Increase efficient pricing of waste (F1.8)	4
	Raise awareness about environmental impacts of products	3
	Incentivise sustainable practices	3
	Total carbon cost	3
	Change the wording of F1.4	3
	More emphasis on oranga and kaitiaki	3
	Reduce environmental impacts / carbon emissions	3
	Pre-existing infrastructure pressures need to be addressed	3
	Focus on increasing green spaces	3
	F1.6 requires a consistent approach / more research	3

Table 19 Coded responses for 'Q4. For the 'Building a Better Future' Action Area and the Needs: Are there any gaps?' — Gaps identified.

Main theme	Sub theme	Frequency
Gaps in ensuring the security and resilience of critical infrastructure (F6)		75
	Emergency preparedness	15
	Invest in emergency preparedness	7
	Stop granting consents for areas prone to climate events	3
	Funding from central government needed for strategic projects	9
	A life-long resilience approach is better than 'loose-fit'	7
	Develop a national strategy / definition and governance framework	6
	Build more dams / invest in water infrastructure	5
	Develop/maintain aging infrastructure	5
	More clarity on what constitutes critical infrastructure	5
	Flood protection schemes	3
	F6.2 acknowledge that natural threats will be exacerbated by climate change	3
Gaps in transitioning energy infrastructure for a zero-carbon 2050 (F2)		73
	Invest in renewable energy infrastructure	7
	Regulatory framework for offshore energy generation (F2.4)	6
	Invest in fossil fuel exploration and use	6
	Need more integration with the 'circular economy'	6
	Hydrogen	4
	Develop energy storage capacity	3
	Develop / improve energy infrastructure	3
	Full life-cycle emissions to be taken into consideration	3
	All infrastructure should be transitioned	3
	Investing in research and development	3
	F2.3 requires strategic planning with electricity sector	3
Gaps in adapting to technological and digital change (F3)		39
	Promote technological innovation	7
	Open data	5
	Invest in security	5
	Digital infrastructure for monitoring	4
	Digital twins	3
Gaps in responding to demographic change (F4)		28
	Develop with growth / longevity in mind	9
	High density development needed	4
	Financial constraints require other tools to assist (F4.1)	3

> *"Having identified critical infrastructure, investment must be prioritized to areas that provide the greatest resilience benefit."*
>
> **Organisation**

F1. Prepare infrastructure for climate change | Te whakarite i ngā hanganga mō te hurihanga o te āhuarangi

Climate change is the defining challenge of this century and demands a new approach to infrastructure. Infrastructure contributes to climate change by generating greenhouse gas emissions from its direct operations, the materials used in its construction and the activities it enables.

In particular, the transport sector poses a significant challenge for emissions reduction in New Zealand. Transport makes up 36% of New Zealand's long-lived emissions, with most emissions arising from fossil fuels used to power vehicles.

Although the transport sector poses a challenge, infrastructure can help reduce carbon emissions through better waste management. There are several areas in which infrastructure offers opportunities to improve the way we deal with waste. These include:

- Reducing the amount of waste generated in construction and demolition through materials selection, procurement and prefabrication
- Incentivising reuse and recycling through waste management planning on construction sites, procurement and adoption of rating tools
- Managing demand through the waste levy to further encourage diversion of waste from landfill
- Increasing the availability of infrastructure specifically for recycling construction waste (materials recovery facilities) in regions where construction activity is predicted to remain high, to support waste diversion from landfill
- Investing in transport infrastructure that enables centralisation of specific waste streams at scale
- Using energy-dense waste products as fuel for existing processes, for example by burning tyres to generate the heat to make cement
- (Q5.) Ways in which low-carbon transport journeys can be encouraged

Table 20 provides a summary of the responses to this question. 331 comments from submissions suggested ideas relating to public transport. Within public transport, 111 comments related to the efficiency/reliability of public transport. 86 comments from submitters considered the pricing of public transport to be important.

Active transport/micro-mobility (nsc=261) and private transport (nsc=248) were also mentioned. 87 submitter comments related to improving the safety for users of active transport, while 143 comments were in support of sustainable private transport. 105 submitter comments related to discouraging private car use.

18 submissions expressed disagreement concerning the prioritisation of low-carbon journeys (Table 21). A further 18 submissions considered the environmental sustainability of electric vehicles as a challenge.

> *"My biggest impediment to commuting by bike by far is that it just isn't safe enough yet. None of the other things bother me, I can stand the time and the weather and the hills, but I will not start biking until doing so is not an unacceptably large risk to my life and health. I'm sure a lot of people are in the same boat. Please significantly improve cycling safety, then I am sure we will see uptake rise. In particular, one thing they had in the Netherlands that we don't have here is dedicated turn signals for cyclists on major intersections. These are often the most dangerous parts of a cycle journey, and I think it's worth seriously considering where these can be added to make whole journeys safer."*
>
> **Individual**

Table 20 Coded responses for 'Q5. How could we encourage low-carbon transport journeys, such as public transport, walking, cycling, and the use of electric vehicles including electric bikes and micro-mobility devices?'— Ideas

Main theme	Sub theme	Frequency
Public transport		331
	Improve efficiency / reliability of public transport	111
	More rapid transit options	8
	Pricing	86
	Cost-effective public transport	81
	Incentivise / subsidise / offer free public transport	51
	Single payment system for rail and bus	3
	Improve public transport network design and connectivity	78
	Develop / improve road network	23
	Electrification of public transport/ higher speed	24
	Free/more car parking near public transport hubs	13
	Decrease air travel	6
	Zone surrounding areas for high density development	4
	Improve ferry access	3
	Ensure public control of public transport	2
Active transport / micro-mobility		261
	Improved safety for active transport/ micro-mobility	87
	Improve cycle network design / connectivity / bike racks	79
	Subsidise / incentivise active transport	33
	Increase / improve pedestrian areas in cities / suburbs	21
	Repurpose roads for active transport	12
	Mandate the provision of active transport infrastructure	7
	Active transport is not equitable nor sustainable in long-run	5
	Don't reduce roading to accommodate bikes	3
Private transport		248
	Sustainable private transport	143
	Encourage / subsidise electric vehicles / make them affordable	102
	Improve / subsidise EV charging network	23
	Improve sustainability of EVs	7
	Free electric taxis	6
	Increase hydrogen powered alternatives	17
	Biofuel alternatives	3
	Ensure road upgrades / developments are life-long	9
	More support for ridesharing / carpooling	6
	We need more park and ride areas	4
	Discourage private car use	105
	Discourage private car / fuel usage / parking	74
	Implement tolling / congestion charges and taxation	24
	No new roads	4
Non-transport ideas		162
	Fully serviced / densified communities / hubs	35
	Town / urban planning to be conducive to low-carbon journeys	27
	Educate people about low-carbon journeys	19
	Learn from and follow international best practice	15
	Incentivise preferred behaviours	11
	Environmental management	10
	Collaboration needed between different sectors of government	10
	Promote low-carbon sustainable economic growth	5
	Encourage working / studying from home more often	5
	Reduce regulations / facilitate free market	4
	Subsidise home solar in order to charge vehicles	3
	Increased consultation and collaboration with community	3

Table 21 Coded responses for 'Q5. How could we encourage low-carbon transport journeys, such as public transport, walking, cycling, and the use of electric vehicles including electric bikes and micro-mobility devices?'— General comments and challenges.

Main theme	Sub theme	Frequency
General comments		94
	General opposition to prioritisation of low-carbon journeys	18
	General opposition	12
	Electric vehicles are not the answer	11
	Concerns / opposition with focus on climate change	10
	No more cycle lanes	8
	Opposed to new Auckland cycle bridge	7
	Exemptions for the underprivileged, such as disabled people	6
	More research is needed	5
	Opposed, because bureaucracy is framing the problem	4
	Cannot control everything	3
	Make provisions for rural areas	3
	Government will address this in response to CCC	3
Challenges		81
	EVs are not environmentally sustainable	18
	Low population density / urban sprawl is a challenge	14
	Will need increased electricity generation for electrification	8
	The weather limits active travel	5
	Low carbon journeys biased in favour of urban workers	5
	Lack of education and unwillingness to change	3
	Delays in Councils' implementation of visions	3
	Some people still need to use heavier vehicles	3
General ideas		30
	Remove road-freight	5
	Integrated planning	3
	Sustainable transport hierarchy	3

"You cannot, people always use what convenient and cheap for them, not what you push."

Individual

5.1.1.1 (Q6.) Additional ways in which infrastructure can reduce waste to landfill

235 submitter comments suggested minimising waste. Additionally, 229 comments from submissions related to the important role recycling has in reducing waste to landfill.

In terms of landfill waste management, 74 comments from submissions indicated support for the incineration of waste. The responses to this question have been summarised in Table 22.

Table 22 Coded responses for 'Q6. How else can we use infrastructure to reduce waste to landfill?'

Main theme	Sub theme	Frequency
Minimising waste		235
	Reduce plastic / non-biodegradables usage	93
	Address manufacturing / importing of non-biodegradable waste	35
	Plastic bans / taxation / fines	26
	Return to the use of glass bottles	4
	Promote / incentivise efficient green waste disposal	39
	Improve / promote composting	16
	Promote biodegradable(s) / recyclable packaging	34
	Promote waste reduction	22
	Legislate against waste by manufacturers	4
	Make waste disposal more expensive	4
	Reduce bin sizes / collection frequency	3
	Focus on minimisation rather than diversion	12
	Address consumer culture	10
	Incentivise waste reduction	8
	Improve quality/durability of products	4
	Consider waste in our waterways	3
Recycling		229
	Develop / improve recycling infrastructure	70
	Recycling bins in public areas	7
	Recycling depots	6
	Improve sorting	4
	More bins	4
	Promote waste recycling / make it easier / free / efficient	65
	Promote more tip / second hand shops	3
	Innovative recycling / repurposing	48
	Introduce/encourage product stewardship schemes for more items	28
	Transition to a circular economy	15
Landfill waste management		91
	Incineration of waste	74
	Use waste for electricity generation	54
	Build waste incinerators	11
	Employ waste hierarchy principle	7
	Local waste management solutions needed	6
Infrastructure to support better use of landfills		74
	Location of infrastructure needs addressing	18
	Decentralised options solutions reduce travel impacts	15
	Centralise waste facilities	15
	Transporting waste to landfill is not looking after the planet	6
	Infrastructure needed to promote food rescue	13
	Improve roads	7
	Improve roads with recycled material/waste	6
	Use rail services for rubbish transfer	5
	Invest in waste infrastructure	5
	Increase the number and capacity of landfills	4
Reduce construction / demolition waste		53
	Recycle / reuse building waste	26
	Use natural materials, such as (untreated) timber	5
	Use modular materials	5
	Maintain old infrastructure	4
	Standardise building components	4
	Do not require the treatment of wood in construction	3

"We think that waste minimisation is as much about behaviour change and procurement as infrastructure."

Organisation

Submitters also brought up several more general ideas relating to this question, and these have been summarised in Table 23.

Table 23 Coded responses for 'Q6. How else can we use infrastructure to reduce waste to landfill?'— General ideas

Main theme	Sub theme	Frequency
General comments		117
	Learn from and follow international best practice	20
	Address through education	18
	Collect data and monitor waste	11
	Coordination and integration of waste and infrastructure	6
	Concerns with consultation	6
	Community / cultural / behavioural changes needed	5
	Concerns regarding government management of waste	5
	Opposed to a focus on reducing waste	5
	Concerns regarding disposal of EV batteries	4
	Introduce new legislation to enforce	4
	Promote manufacturing / buying locally	3
	Improve cycle lanes and pedestrian paths	3
Costs		37
	Implement polluter pays principle	16
	Fine incorrect disposal of waste	7
	Increase costs of waste disposal	4
	Increase landfill charges / waste levy	7
	Increasing waste levy could result in illegal dumping	3
	Consider the lifetime costs of a product	5
	Affordable rubbish collection / disposal	3
Governance		12
	Central government to facilitate waste management	6

"Advertise on television to show people how to reduce waste and safely dispose of old batteries and pharmaceutical products. And stop building massive landfills! Put the money into modern technology for recycling (as in the Scandinavian countries)"

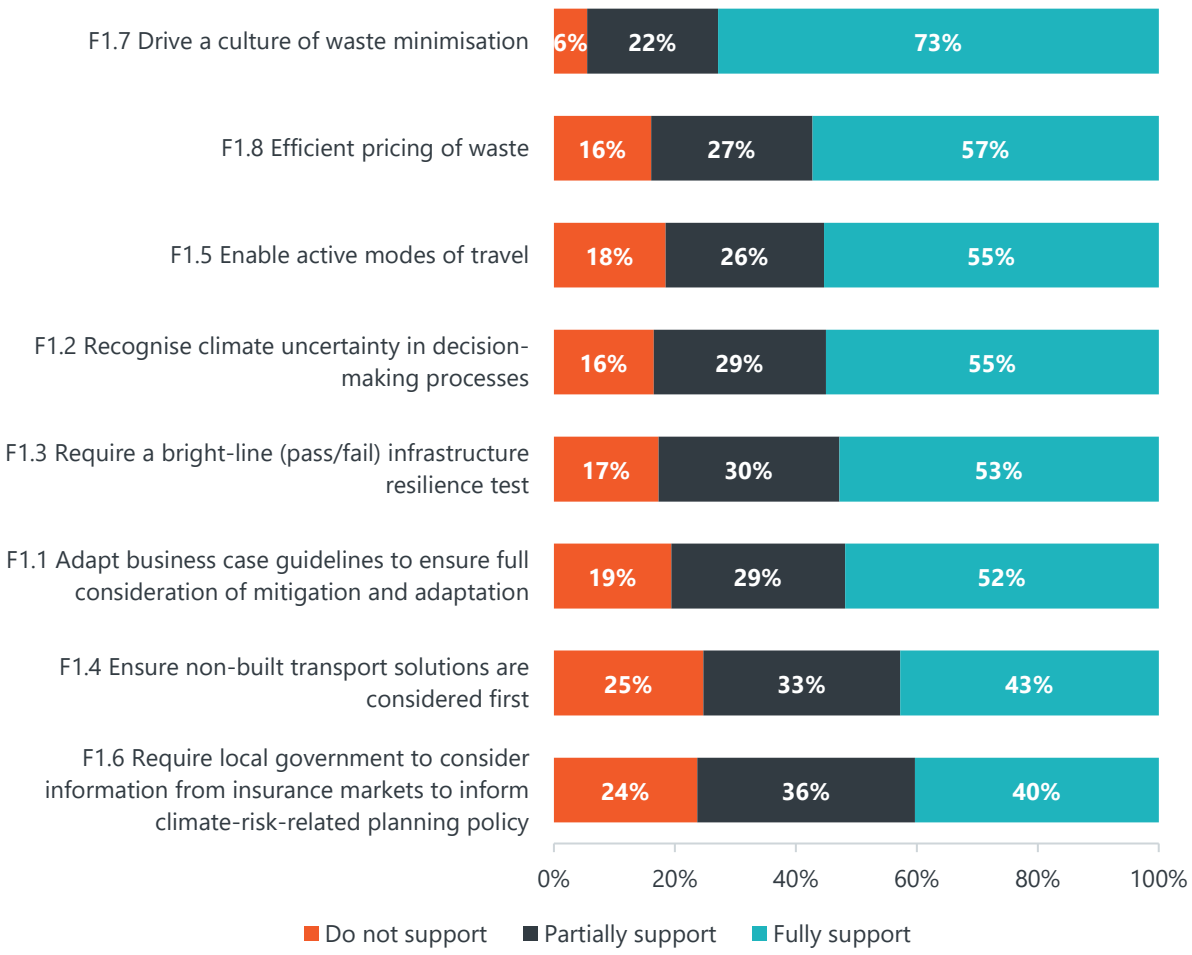
Individual

5.1.1.2 Level of support for the proposed options to prepare infrastructure for climate change

Eight proposed options to prepare infrastructure for climate change were presented. Figure 3 shows the support for each option.

- 73% fully supported driving a culture of waste minimisation, while 22% partially supported.
- 57% fully supported efficient pricing of waste, while 27% partially supported.
- 55% fully supported enabling active modes of travel, while 26% partially supported.
- 55% fully supported recognising climate uncertainty in decision-making processes, while 29% partially supported.
- 53% fully supported requiring a bright-line (pass/fail) infrastructure resilience test, while 30% partially supported.
- 52% fully supported adapting business case guidelines to ensure full consideration of mitigation and adaptation, while 29% partially supported.
- 43% fully supported ensuring non-built transport solutions are considered first, while 33% partially supported.
- 40% fully supported requiring local government to consider information from insurance markets to inform climate-risk-related planning policy, while 36% partially supported.

Figure 3. Indicate your support for these proposed options to prepare infrastructure for climate change
n = from 422 to 453



Different ways in which low-carbon transport can be encouraged were identified, as well as additional ways in which infrastructure can reduce waste to landfill. These two areas are discussed below.

F2. Transition energy infrastructure for a zero-carbon 2050 | Te whakawhiti i te hanganga ngao kia kore ai te whakapaunga o te waro, ki te whakatutuki i te whāinga warokore 2050

Energy production from renewable sources will need to increase substantially to meet a growing demand for electricity and clean energy. A successful transition to renewable energy could deliver wide benefits. From an infrastructure perspective, some significant challenges will need to be addressed if the transition to renewable energy is to be successful.

5.1.1.3 (Q7.) Suggested infrastructure issues that could be included in the scope of the national energy strategy

Together, Table 24 and Table 25 provide a summary of the issues that submitters identified as being worthy of inclusion in a national energy strategy. 267 comments from submissions suggested that renewable energy infrastructure is worth including in a national energy strategy, with 93 submitter comments supporting solar energy in some capacity.

77 comments from submissions proposed the inclusion of maintenance and development of energy infrastructure.

Table 24 Coded responses for 'Q7. What infrastructure issues could be included in the scope of a national energy strategy?'—General ideas

Main theme	Sub theme		Frequency
Transport infrastructure			101
	Public Transport		34
		Extend / improve / electrify rail network	23
		Subsidise / incentivise the use of public transport	4
	Electric Vehicles		27
		Expand EV charging network (private and public)	12
		Concerns regarding disposal of EV batteries	6
		Phase out and replace petrol / diesel cars with electric vehicles	3
	Roading		21
		Improve road network / infrastructure	13
General comments			80
	Strategy to focus on total carbon emissions, not just energy		12
	General opposition to plan		6
	Domestic efforts could be offset by overseas polluters		4
	Use international best practice		4
	Address shortages in workforce		4
	Government management of energy supply and demand		4
	Concerns about bureaucracy		4
	Consider degrowth		3
Housing			19
	Promote more sustainable housing		8
	Reduce urban sprawl		7
Three waters			9
	Invest in maintaining the water infrastructure		7

Table 25 Coded responses for 'Q7. What infrastructure issues could be included in the scope of a national energy strategy?' — Energy infrastructure

Main them	Sub theme			Frequency
Renewables				267
	Solar			93
		Promote the uptake of solar energy		84
			Support/incentives for individual / community solar usage	35
			Require new builds / all homes to have solar panels	20
		Retrofit solar panels		5
	Hydro			52
		More investment in hydro infrastructure		33
			Improve efficiency / sustainability of existing hydro plants	4
		Do not depend solely on hydroelectricity		11
			Decreased prevalence of hydroelectric generation	4
		Use hydroelectric dams for water storage		3
	Wind			50
		Invest in wind turbines		36
		Incentivise distributed wind generation		7
		Determine where wind farms can be situated		3
		New houses fitted with wind turbines		3
	Other renewable energy sources			48
		Invest in hydrogen power		15
		Invest in geothermal energy production		14
		Explore tidal generation		13
		Invest in / support biofuel producers		5
	General support for renewables			11
General				237
	Maintain / develop energy infrastructure			77
		Improve efficiency of grid / transmission		45
			Improve infrastructure around energy storage	17
		Diversify power generation		5
		Review management of energy infrastructure		3
	Promote distributed energy generation			46
		More support for individual / community / localised generation		42
	General support for renewables			13
	Ensure affordability of electricity			11
		Improved prices for selling energy back to grid		6
	Focus on longevity / resilience			10
	Ensure planning considers how much energy is needed / used			10
	Nationalise power companies			10
		Review the regulations for power companies		5
	Encourage the use of less power			10
	Waste-to-energy plants			7
	Change energy production model from profit to service			4
	Maintain security of supply			4
	Establish embodied carbon cost of infrastructure			3
	Promote offshore generation			3
	Sound decision making needed			3
	Reduce bureaucracy around energy distribution			3
Fossil fuels				66
	Natural gas			29
		Invest in gas exploration / generation		17
		Only use gas as a transitional energy source		7
	Coal			14
		Decrease reliance on coal generation		7
		Invest in fossil fuel generation		5
	Phase out fossil fuels			11
	Biofuels			4
Nuclear				20
	Invest in nuclear / modular reactors			19

5.1.1.4 (Q8.) The role for renewable energy zones in achieving New Zealand's 2050 net-zero carbon emissions target

183 submitter comments suggested that there is a role for renewable energy zones. 71 comments from submissions indicated that there was no role. Of those that expressed support, 18 comments from submissions asserted that wind generation zones would be effective, while 16 thought that solar power zones would be appropriate. A summary of responses to this question can be found in Table 26.

Table 26 Coded responses to 'Q8. Is there a role for renewable energy zones in achieving New Zealand's 2050 net-zero carbon emissions target?'

Main theme	Sub theme	Frequency
Yes, there is a role for renewable energy zones		183
Suggestions / types of renewable energy zones		72
	Types of renewable energy zones	46
	Wind generation zones	18
	Solar power zones	16
	Hydro and/or geothermal zones	9
	Tidal energy	3
	Potential geographic locations	26
	The whole country should be renewable / micro generation	15
	Northland	4
	Southland	3
No, there is not a role for renewable energy zones		71
	Impractical / unachievable / inefficient	14
Concerns / requirements for success		69
	Improved management / governance / planning	27
	Requires research and evidence base for sound decision making	15
	Environmental sustainability needs to be considered	11
	Requires investment in the grid and infrastructure	8
	Focus on demand reduction	6
General comments		30
	Unsure about meaning	27
	Concerns regarding the consultation document	3

> *"Any wind power generator would need one of these zones, maybe off shore is the best option?"*
>
> **Individual**

5.1.1.5 (Q9.) Recommendations and suggestions in the Ministry of Business, Innovation and Employment's Accelerating Electrification document that are favoured for inclusion

Table 27 shows the recommendations and suggestions from the "Accelerating Electrification" document that were most favoured by submitters. The most favoured proposition (nsc=70) relates to Section 8 of

"Accelerating Electrification", with support for renewable electricity generation investment. Preferred types of renewable energy are solar, wind, and hydro or tidal generation.

86 comments from submissions were in opposition to the inclusion. The main reason for this was opposition to bureaucratic structures and cost implications (nsc=12).

Table 27 Coded responses to 'Q9. Of the recommendations and suggestions identified in the Ministry of Business Innovation and Employment's "Accelerating Electrification" document, which do you favour for inclusion in the Infrastructure Strategy and why?'

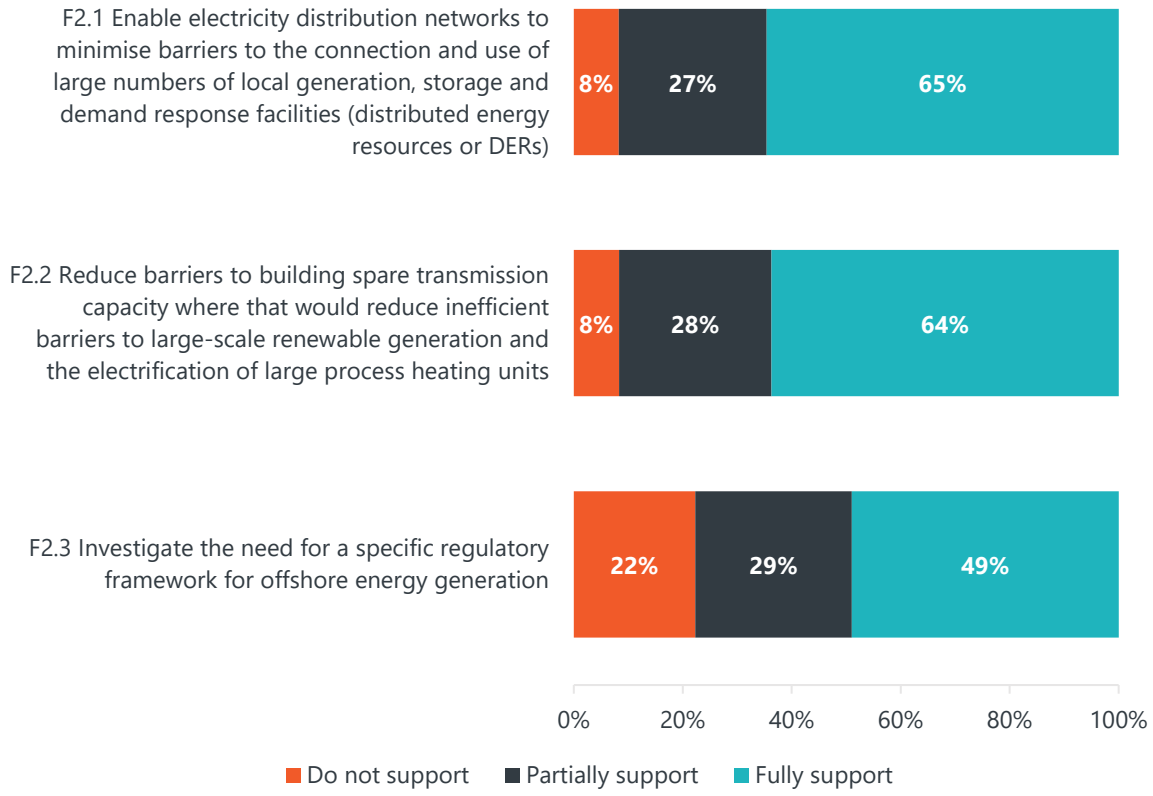
Main theme	Sub theme	Frequency
Support inclusion		261
	Specific sections supported	216
	Section 8	70
	Support renewable energy	23
	Support solar energy / incentivisation	14
	Support wind energy generation	10
	Support hydro / tidal generation	7
	Support geothermal	4
	Section 4	28
	Section 10	23
	More EV charging stations	6
	Support connecting to the national grid	4
	Section 9	19
	Section 11	17
	Support investment in distributed generation	5
	Make selling energy back to the grid more feasible	4
	Section 7	14
	Section 5	13
	Section 2	11
	Section 6	10
	Section 3	6
	Section 1	5
	General support for 'accelerating electrification' document	34
	Support nuclear	3
	Support, if prices are lowered/fixed	3
Oppose inclusion		86
	General opposition to 'accelerating electrification' document	46
	Opposed to bureaucratic structures and cost implications	12
	EV/e-bike are not sustainable	11
	Opposed to / concerned with renewables	8
	Focus on increasing capacity first	4
	Opposition based on the cost	3
Concerns / requirements for success		68
	Existing transport modes should be electrified	18
	Inclusion requires good governance and reliable evidence	15
	Do not over rely on a single energy source	8
	Electrification of process heat	6
	Address energy demand	6
	Let market forces dictate outcomes	4
	Incentivise / subsidise rather than regulate	4
General comments		23
	Document too lengthy to read / have not read it	23

5.1.1.6 Level of support for the proposed options to transition energy infrastructure for a zero-carbon 2050

Three proposed options to transition energy infrastructure for a zero-carbon 2050 were presented. Figure 4 shows the support for each option.

- 65% fully supported enabling distribution networks to minimise barriers to the connection and use of large numbers of local generation, storage and demand response facilities, while 27% partially supported.
- 64% fully supported reducing barriers to building spare transmission capacity where that would reduce inefficient barriers to large-scale renewable generation and the electrification of large process heating units, while 28% partially supported.
- 49% fully supported investigating the need for a specific regulatory framework for offshore energy generation, while 29% partially supported.

Figure 4: Indicate your support for these proposed options to transition energy infrastructure for a zero-carbon 2050. n = from 387 to 397



F3. Adapt to technological and digital change | Te urutau ki te panoni hangarau, me te panoni tahiko

A wide-ranging technological transformation is underway worldwide, affecting all infrastructure sectors. The impacts of technology on and within infrastructure sectors will vary greatly. The use of technology across New Zealand's infrastructure sector also varies.

Transparent, open data is an essential element of technological advancement for the infrastructure sector.

The list of technologies that could transform the infrastructure sector is long. However, several challenges affect the adoption and therefore the speed of technological change in the infrastructure sector.

Additionally, while we are approaching universal connectivity, technological barriers exist for some in New Zealand.

5.1.1.7 (Q10.) Proposed steps that can be taken to improve the collection and availability of data on existing infrastructure assets and to improve data transparency in the infrastructure sector

The key themes identified in this question can be found in Table 28 and were:

- The standardisation of data collection and use, what to collect, and how to do so innovatively within privacy constraints (nsc=120)
- Collaborative data management for improved governance and management (nsc=96)
- Ease of public access to information and transparency (nsc=64)
- A quality, centralised, secure and efficient data storage (nsc=34)

24 comments from submissions also expressed opposition to steps to improve the collection and availability of infrastructure data.

> *"National data standards: New Zealand needs national data standards as a foundation before joined-up collection can take place. One or more government agencies with substantial assets should take accountability and become the client for their development. Waka Kotahi takes the lead for transport, but there is a need for other agencies to take a similar role for other sectors, such as water."*
>
> **Organisation**

> *"Build sensors and IoT capability into new projects from the beginning. As part of procurement (or similar) put the supply of relevant data in the contract."*
>
> **Individual**

> *"The Government can also take a more proactive approach. In the UK, the Crown Estate play an active role in gathering pre-feasibility data for areas of seabed which they have assigned for offshore wind development."*
>
> **Organisation**

Table 28 Coded responses to 'Q10 What steps could be taken to improve the collection and availability of data on existing infrastructure assets and improve data transparency in the infrastructure sector?'

Main theme	Sub theme	Frequency
Ideas		357
	Data collection	120
	Standardised / innovative data collection nationwide	32
	Types of data to collect	26
	Collect data on existing infrastructure	14
	Health care data	5
	Household data	4
	Consultation required on data collection and use	25
	Ensure data privacy and ethical use	15
	Mandate data collection for all operations	11
	Start simply with low-cost value adds	5
	Purpose / use of the data should be explicit	3
	Increase investment in infrastructure and data collection	3
	Governance / Management	96
	Central and / or local government oversight and collaboration	28
	Improved management / governance / planning	24
	Use industry / international best practice	9
	Independent regulation / accountability	9
	Improve technology and systems used	7
	Use data to predict the implementation outcomes (digital twins)	6
	Private sector management	4
	Access to information	95
	Ensure ease of public access to information / transparency	64
	Improve access to fibre / broadband / technology	11
	Make data sharing between agencies easier/mandatory	7
	GIS system attached to infrastructure assets/management data	7
	Data storage	34
	Establish a national centralised database	18
	Ensure secure / efficient storage and usage of data	9
	Data quality	12
	Data needs to be standardised, up to date and recalibrated	8
	Standardise data interfaces/structures	4
Opposition		24
	General opposition	7
	Data should already be available	5
	Opposed based on concerns with data security	5
General agreement		6
General comments		3
	Question too technical	3

5.1.1.8 (Q11.) Important regulatory and legislative barriers to technology adoption for infrastructure providers that need to be addressed

255 comments from submissions identified barriers (Table 29).

98 submitter comments identified outdated, inefficient, and limiting primary and secondary legislation, including the Resource Management Act 1991 (nsc=33). Others noted the limitations caused by inefficient and siloed governance (nsc=44). 39 comments from submissions identified financial barriers. Some submissions provided ideas to address these barriers. These included:

- Facilitating and funding technology uptake (nsc=15)

- Environmental sustainability must be ensured (nsc=10)
- Clear / comprehensive / standardised legislation required (nsc=9)
- The central government should assist in implementing new technology (nsc=7)

Table 29 Coded responses to 'Q11. What are the most important regulatory or legislative barriers to technology adoption for infrastructure providers that need to be addressed?'

Main theme	Sub theme			Frequency
Barriers				255
	Legislative / statutory barriers			98
		Acts / regulations are outdated / inefficient / limiting		55
		Limitation as a result of The Resource Management Act		33
		Te Tiriti o Waitangi is a barrier		6
		Resource consents are too costly and slow		4
	Management/Governance			55
		Inefficient / bureaucratic / siloed governance		44
		Central government control		11
	Economic			49
		Financial barriers		39
			Excessive costs / profit driven ethos	24
			Limited / uncertain funding	12
		Privatization / monopolism		8
	Access, reliability, usability of internet / technology / infrastructure			21
	Security and privacy concerns			20
	Lack of skilled professionals			7
Ideas to address barriers				50
	Facilitate / fund technology uptake			15
	Environmental sustainability must be ensured			10
	Clear / comprehensive / standardised legislation required			9
	Central government should assist in implementing new tech			7
	Transparency of data is required			3
	Consultation is needed			3
General comments				3
	Opposed to technology adoption			3

> *"RMA reform. Although this has already been identified, technology advances rapidly and the legal and policy frameworks need to be adaptive for new technology."*
>
> **Organisation**

5.1.1.9 (Q12.) Ways in which we can achieve greater adoption of building information modelling (BIM) by the building industry

The most favoured options for achieving greater adoption of BIM related to addressing regulatory barriers (nsc=95), including the standardisation of building codes, processes and compliance (nsc=36), and legislating for the adoption of BIM (nsc=34).

Regulatory proposals were followed by the suggestion that easier access to understandable data (nsc=65) could help improve greater adoption of BIM. Improved management / governance / planning systems (nsc=27) was also suggested as a potential way to achieve this goal (Table 30).

Table 30 Coded responses to 'Q12. How can we achieve greater adoption of building information modelling (BIM) by the building industry?'

Main theme	Sub theme	Frequency
Regulation / legislation		95
	Standardise building codes / process / compliance	36
	Mandate / legislate the adoption of BIM	34
	More efficient/less regulation / fewer restrictions	16
	Repeal parts of / get rid of the RMA	4
	Do not need to mandate BIM for all projects	3
Provide easier / understandable access to information / data		65
	Education/training on the uses of BIM	40
Governance		50
	Improved management / governance / planning	27
	Improved transparency / communication / collaboration	22
General comments		22
	Opposed to the adoption of BIM	14
	General support for BIM	5
Provide incentives/subsidies and support to industry		21
Make sure models reflect desired outcomes / use		21
Subsidise / reduce cost of BIM adoption		17
Require adoption as part of procurement process		4

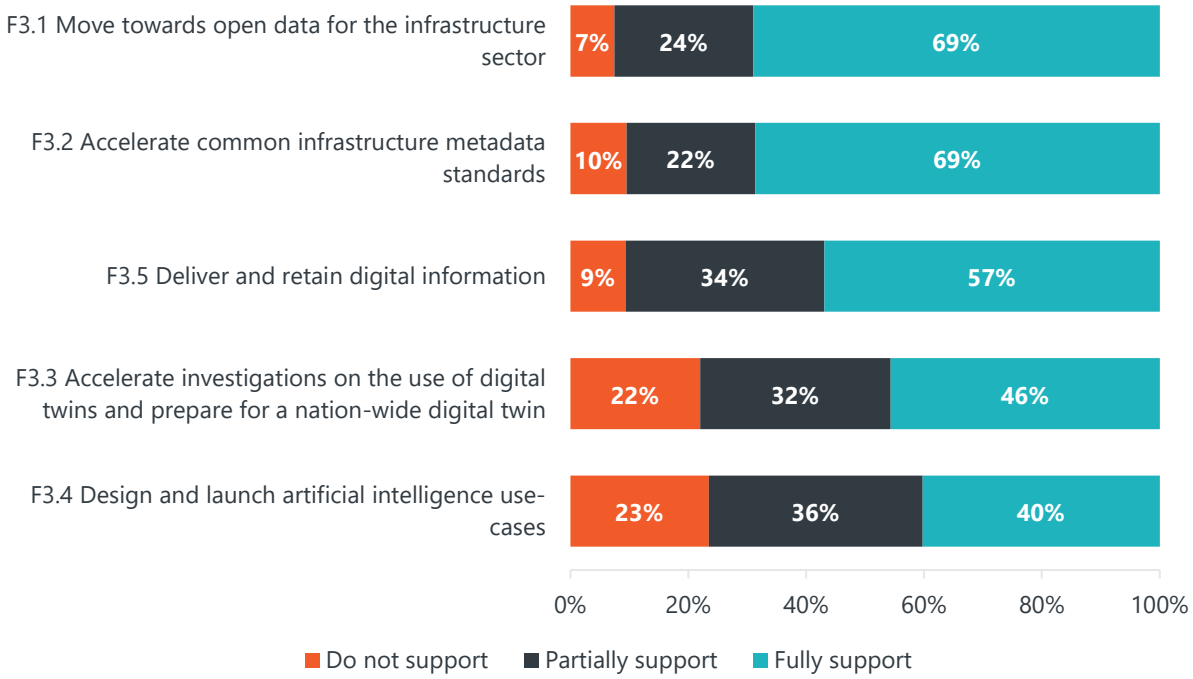
> *"Produce clear easily understood standards that are annually updated and disseminated through industry wide presentations"*
>
> **Individual**

5.1.1.10 Level of support for the proposed options to adapt to technological change

Five proposed options to adapt to technological change were presented. Figure 5 shows the support for each option.

- 69% fully supported moving towards open data for the infrastructure sector, while 24% partially supported.
- 69% fully supported accelerating common infrastructure metadata standards, while 22% partially supported.
- 57% fully supported delivering and retaining digital information, while 34% partially supported.
- 46% fully supported accelerating investigations on the use of digital twins and preparing for a nation-wide digital twin, while 32% partially supported.
- 40% fully supported designing and launching artificial intelligence use-cases, while 36% partially supported.

Figure 5: Indicate your support for these proposed options to adapt to technological and digital change
n = from 241 to 361



F4. Respond to demographic change | Te urupare ki te rerekē haere o te hangapori

New Zealand's population is growing, becoming more urbanised, and ageing. As a result, populations of cities are likely to increase. These demographic changes will affect future demand for infrastructure. However, population projections are volatile, and this does affect infrastructure decisions.

5.1.1.11 (Q13.) Suggestions on how communities facing population decline should change the way they provide and manage infrastructure

Most frequent suggestions on how communities could change the provision and management of their infrastructure to reduce adverse effects as they face population decline were:

- Encouraging urban to rural migration, including through economic development, job creation, and incentivisation (nsc=145)
- Invest in infrastructure to, for example, make it more possible for people to live in those areas while travelling to work elsewhere (nsc=127)
- Improve planning and governance (nsc=107)

> *"Think about the minimum services that will maintain a community. Combine different services where appropriate."*
>
> **Individual**

A small number of comments from submissions thought that affected areas should be allowed to decline (nsc=41). The responses to this question have been summarised in Table 31.

Table 31 Coded responses to 'Q13. How should communities facing population decline change the way they provide and manage infrastructure services?'

Main theme	Sub themes	Frequency
Encourage urban to rural migration		145
	Economic development and job creation in areas of decline	47
	Incentives, other than house prices, to move	19
	Improved / cheaper / decentralised service delivery	14
	Utilise cheaper housing prices / cost of living as incentive	13
	Offer support for vulnerable members of the community	8
	Encourage remote working	7
	More communication and collaboration between rural communities	5
	Targeted relocations into declining areas	5
Infrastructure		127
	Develop / maintain infrastructure to encourage migration	66
	Invest in transport infrastructure / public transport	18
	Improve internet / technology	12
	Maintain infrastructure for declining population	8
	Support / invest in education infrastructure in those areas	7
	Support / invest in health infrastructure in those areas	6
	Invest in renewable energy infrastructure	6
	Support small communities to innovate / adapt infrastructure use	4
Governance		107
	Improved management / governance / planning	59
	Requires research and evidence base for sound decision making	14
	Increased community consultation	9
	Review funding streams	3
	Capacitate / fund / support local governments	37
	Centralise decision making on affected areas	11
Opposed to investing in areas of decline		41
	Support the status quo of decline / adapt to decline	24
	Targeted incentives to move people out of declining areas	12
	Opposed to planning / addressing population decline	5

> *"Population decline is triggered by the lack of employment, meaningful employment, fair paying employment for people to stay. Diversifying and creating new industries in every region in NZ will need to be a priority for this government."*
>
> **Individual**

5.1.1.12 (Q14.) The need for a Population Strategy in New Zealand

409 comments from submissions agreed with the need for a Population Strategy (Table 32).

> *"Develop a Population Strategy while making sure quality data and relevant population categories are used (e.g. skilled migrants; essential skills)"*
>
> **Organisation**

Many submitters' comments that supported a Population Strategy suggested that the strategy review and target immigration into New Zealand (nsc=53) be evidence-based (nsc=39) and focus on dispersing the population (nsc=35). Submitter comments not in support were concerned about the evidence that would be used (nsc=31).

Table 32 Coded responses to 'Q14. Does New Zealand need a Population Strategy that sets out a preferred population growth path, to reduce demand uncertainty and improve infrastructure planning?'

Main theme	Sub theme	Frequency
Yes, NZ needs a Population Strategy		409
	General support for a Population Strategy	207
	Ideas proposed regarding the development of the strategy	201
	Strategy should review / targeted migration (policies)	53
	Strategy should be evidence based / linked to good governance	39
	Strategy should focus on dispersing the population	35
	Strategy should focus on infrastructure delivery / improvements	22
	Strategy should focus on population degrowth	16
	Strategy should address population growth in relation to infrastructure	12
	Strategy should focus on environmental / social sustainability	11
	Strategy should focus on development	6
	Strategy to be developed with collaboration / consultation	4
No, NZ does not need a Population Strategy		131
	General opposition to a Population Strategy	70
	Reasons for opposition	61
	Concerns regarding evidence used and governance outcomes	31
	Strategy will not be beneficial to governance	6
	Unplanned growth preferred	5
	Population decline is preferred	5
	Prefer a reactive / dynamic approach	4

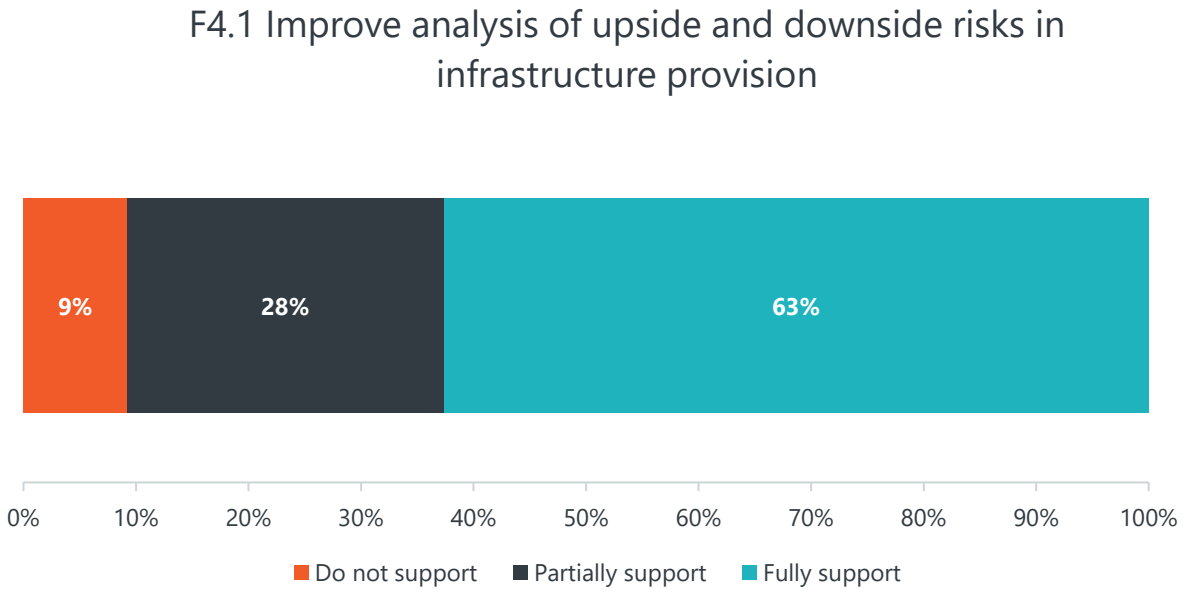
5.1.1.13 Level of support for the proposed option to respond to demographic change

One proposed option to respond to demographic change was presented, "improve analysis of upside and downside risks in infrastructure provision". Figure 6 shows the support for the option.

- 63% fully supported improving analysis of upside and downside risks in infrastructure provision, while 28% partially supported.

> *"Yes. Where to focus our services. Where we want to encourage growth. What sectors. Tax breaks for certain communities (Thinking here carbon tax or local subsidies where transport is required.) Where do we want to say - this pipe is not being replaced, or not being extended., so focus your growth here. Through infrastructure we can direct growth where and how."*
>
> **Individual**

Figure 6: Indicate your support for the proposed option to respond to demographic change; n = 380



F5. Partner with Māori: Mahi Ngātahi | Te mahi ngātahi ki te iwi Māori: Mahi Ngātahi

Mahi Ngātahi/collaboration with Māori focuses on supporting a better future for New Zealand through better relationships with Māori. This leads to better infrastructure outcomes for all. The growing strength of the Māori economy and iwi asset base means that Māori will play an increasingly significant role in the infrastructure sector.

5.1.1.14 (Q15.) Proposed steps to increase collaboration with Māori through the process of planning, designing and delivering infrastructure

Of the comments from submissions that mentioned steps to improve collaboration with Māori, 226 submitter comments indicated the need for more representation and/or inclusion. Ideas included:

- More meaningful consultation / partnership with Māori (nsc=85)
- Co-governance / planning with Māori (nsc=62)
- Steer governance culture towards inclusivity / Māori worldview (nsc=30)

149 submitter comments expressed opposition to increasing collaboration with Māori. 79 of these comments were not in favour of collaboration based on ethnicity (Table 33).

> *"Partnership rather than consultation. Partnership takes time and genuine commitment to partnership - we need to include Māori in ways that are meaningful..."*
>
> **Individual**

Table 33 Coded responses to 'Q15. What steps can be taken to improve collaboration with Māori through the process of planning, designing and delivering infrastructure?'

Main theme	Sub theme	Frequency
Steps to improve collaboration with Māori		268
	Representation / inclusion	226
	More meaningful consultation / partnership with Māori	85
	Co-governance / planning with Māori	62
	Steer governance culture towards inclusivity / Māori worldview	30
	Give more control / representation to Māori	14
	Decision making to be aligned with Te Tiriti o Waitangi	11
	Incentivise / remunerate Māori for their advice / participation	10
	Improved / accessible communication	5
	Ensure process is efficient and cost-effective	4
	Consult on Marae	4
	Upskill Māori	17
	Education on Māori concepts / history / Te Reo	13
	Ensure social improvements eventuate	4
	Ease regulation process for developing Māori land	4
Opposed to increasing collaboration		149
	Opposed to collaboration based on ethnicity	79
	Unnecessary to / do not collaborate with Māori	44
	Current collaboration with Māori is enough / too much	22
General comments		11
	General support for increased Māori collaboration	6

5.1.1.15 (Q16.) Steps to unlock greater infrastructure investment by Māori

186 comments from submissions mentioned steps to unlock greater infrastructure investment by Māori. Of these, the most frequent suggestions included:

- Promote Māori business / investment opportunities (nsc=51)
- More meaningful consultation / partnership with Māori (nsc=45)
- Facilitate Māori investment (nsc=21)

The responses to this question have been summarised in Table 34. 95 comments from submissions indicated opposition to the question, with 41 submitter comments indicating that no further steps are needed to unlock greater infrastructure investment by Māori.

Table 34 Coded responses to 'Q16. What steps could be taken to unlock greater infrastructure investment by Māori?'

Main theme	Sub theme	Frequency
Steps to unlock greater infrastructure investment by Māori		186
	Promote Māori business / investment opportunities	51
	More meaningful consultation / partnership with Māori	45
	Facilitate Māori investment	21
	Upskill Māori	8
	De-risk investment for Maori	3
	Invest money from Te Tiriti o Waitangi settlements in infrastructure	17
	Ease regulation process for developing Māori land	16
	Improve Māori access to social infrastructure / services	6
	Give more control / representation to Māori	5
	Steer governance culture towards inclusivity / Māori worldview	4
	Require Māori investment to benefit iwi	4
	Government funding and investment in infrastructure for Māori	4
	Education on Māori concepts / history / Te Reo	3
Opposed to Māori investment		95
	No steps should be taken to unlock greater investment by Māori	41
	Opposed to investment based on ethnicity	32
	Concerns regarding money management by Māori	11
	Opposed based on monetary benefits already received	4
	Unsure if Māori are willing to take these steps	3
Concerns / requirements for success		32
	General agreement with Māori investment in infrastructure	11
	Improved transparency / communication	7
	Ensure inclusion is evidence-based	4
	Ensure Māori investment benefits all	4

5.1.1.16 (Q17.) Actions that should be taken to increase the participation and leadership of Māori across the infrastructure system

Suggested actions to increase the participation and leadership of Māori across the infrastructure system included (Table 35):

- More meaningful consultation / partnership with Māori (nsc=121)
- Steer governance culture towards inclusivity / Māori worldview (nsc=59)
- Increased opportunities for upskilling and inclusion (nsc=49)
- Co-governance / planning with Māori (nsc=26)

> *"Again, I believe the starting point is education. We have seen statutory roles in elected governance structures such as [organisation name]. Could similar positions be created with adequate support in bodies that design and regulate infrastructure systems."*
>
> **Organisation**

Table 35 Coded responses to 'Q17. What actions should be taken to increase the participation and leadership of Māori across the infrastructure system?'

Main theme	Sub theme	Frequency
Actions to increase Māori participation/leadership		244
	More meaningful consultation / partnership with Māori	121
	Incentivise / remunerate Māori for their advice / participation	32
	Steer governance culture towards inclusivity / Māori worldview	59
	Co-governance / planning with Māori	26
	Increased opportunities for upskilling and inclusion	49
	General support	4
	Encourage privatisation / Māori investment	4
	Decision making to be aligned with Te Tiriti o Waitangi	4
Opposed to actions to increase Māori participation / leadership		105
	Opposed to participation / leadership based on ethnicity	60
	No actions should be taken to increase Māori participation	42
	Concerns regarding Maori leadership	3

"Always involve Iwi at the VERY beginning of any planned infrastructure project. Long before plans are drawn up and money spent on Resource Consent applications. Respect and take notice of Maori actions such as Rahui which can be placed on certain lands where planned developments don't meet Maori cultural relationship with that land, its waterways and traditional use."

Individual

F6. Ensure security and resilience of critical infrastructure | Te whakatūturu i te haumarutanga, me te kaha o ngā hanganga whaitake

Critical infrastructure generally means any physical facilities, assets, systems and networks that, if they were unavailable for an extended period, would significantly affect the functioning of society and the economy.

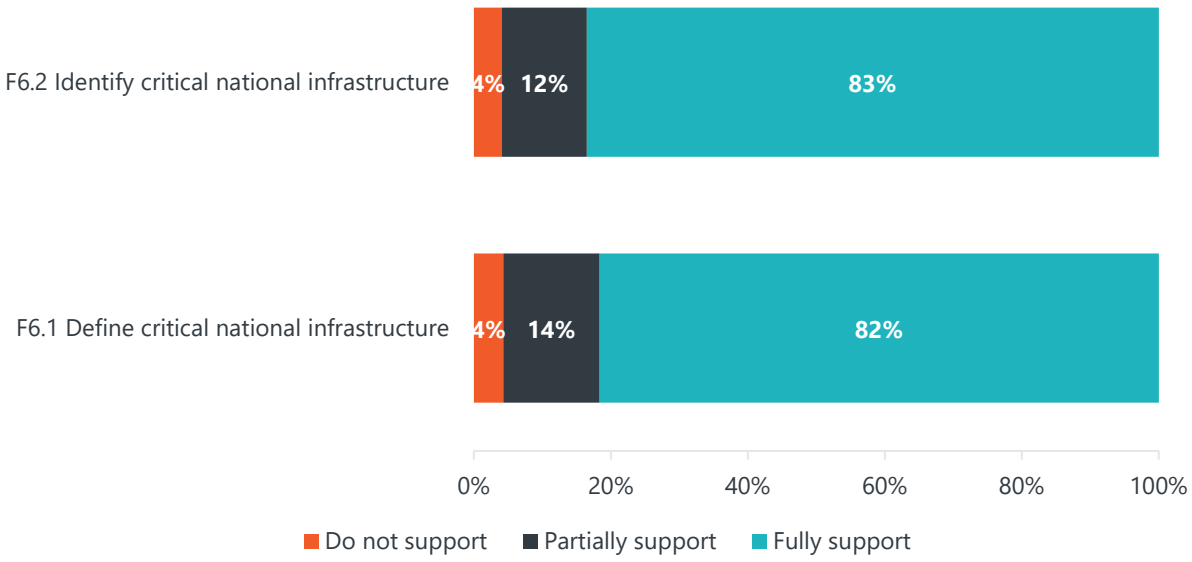
New Zealand's critical infrastructure is vulnerable to a range of threats. New Zealand also has limited resources to respond to threats and shocks that may affect critical infrastructure.

5.1.1.17 Level of support for the proposed options to ensure security and resilience of critical infrastructure

Two proposed options to ensure the security and resilience of critical infrastructure were presented. Figure 7 shows the support for each option.

- 83% fully supported identifying critical national infrastructure, while 12% partially supported.
- 82% fully supported defining critical national infrastructure, while 14% partially supported.

Figure 7: Indicate your support for these proposed options to ensure security and resilience of critical infrastructure; n = from 412 to 419



"[Organisation name] appreciates the consideration and aroha behind this vision, however we feel that it needs to further identify resilience to the worst possible predicted outcomes by scientific review instead of classifying events as "shocks" - worse weather is a predicted outcome of our abuse of the environment, as can be seen by the recent flooding and cold snaps that affect the most vulnerable of our communities. This means we cannot delay looking at our infrastructure in a way that reflects defence against the worst of what we expect so that our communities are minimally affected by these threats in future."

Organisation

"The council supports the proposed establishment of a definition of "critical national infrastructure" in F6.1 and F6.2. This definition should also specifically include water treatment plants, wastewater treatment plants, associated networks, and the sources of drinking water."

Organisation

5.2 Action Area Two: Enabling Competitive Cities and Regions | Te Whakaahei i ngā Tāone me ngā Tuawhenua Tātāwhāinga

Infrastructure, when planned, delivered, and managed well, can improve the lives of all New Zealanders by raising incomes and productivity, increasing the supply and affordability of housing, improving physical and social connection, and lifting quality of life. Infrastructure can contribute to the success of New Zealand's cities and regions.

Our cities currently face several problems that constrain their ability to deliver high living standards and compete for global talent. These include:

- Extremely unaffordable housing, especially in fast-growing cities, and broader issues with housing quality, including standards of heating, ventilation and dampness.
- Comparatively high levels of traffic congestion, poor availability of public transport and walking and cycling options, and urban design that leads to poor quality-of-life outcomes.
- Limited urban wage premiums. Higher incomes in Auckland and Wellington are largely offset by higher housing costs, pushing people to live in other places that offer lower wages. Conversely, those on nationally set incomes (such as nurses, teachers and police) face higher housing costs than their peers elsewhere.

The areas where Te Waihanga believes change will be needed to enable competitive cities and regions are as follows:

- Enable a responsive planning system.
- Coordinate the delivery of housing and infrastructure.
- Improve access to employment.
- Plan for lead infrastructure.
- Improve regional and international connections.

5.2.1 (Q18.) Overview of responses to the 'Enabling Competitive Cities and Regions' Action Area and Needs

Agreement: 194 submitter comments indicated agreement with the Enabling Competitive Cities and Regions Action Area and Needs (Table 36). Agreement included:

- Coordinate delivery of housing / infrastructure (C2) (nsc=44)
- Planning for lead infrastructure (C4) (nsc=39)
- Enabling a responsive planning system (C1) (nsc=31)

Table 36 Coded responses for 'Q18. For the 'Enabling Competitive Cities and Regions' Action Area and the Needs: What do you agree with?' — Agree

Main theme	Sub theme	Frequency
Agree to coordinate delivery of housing / infrastructure (C2)		44
	Agree with regional spatial planning (C2.5) subject to funding	10
	Agree with water-sensitive urban design measures (C2.6)	6
	Agree with post-implementation reviews (C2.4) subject to funding	5
	Agree with volumetric charging of water (C2.2)	3
Agree with planning for lead infrastructure (C4)		39
	Agree with future planning	18
	Agree with increase in pre-emptive spatial planning	4
	Support lapse for infrastructure corridor designations	3
General agreement with Action Area and Needs		38
Agree with enabling a responsive planning system (C1)		31
	Agree with standardised planning rulebooks (C1.2)	5
	Support reform of RMA	5
	Support review and realignment of Crown land (C1.4)	3
Agree to improve access to employment (C3)		22
	Agree with congestion charging / road tolling	16
	Support review and realignment of Crown land (C1.4)	3
Agree with improving regional and international connections (C5)		18

"We agree with a responsive planning system, but also one that is forward-focused (i.e., planned forward on demographics etc., not just reacting to applications). We agree with co-ordinating housing and infrastructure but are conscious that this shouldn't become a large system that results in barriers and inefficiencies. We are not sure how the access to employment outcome comes through. Is the document meaning social procurement for infrastructure projects (if not, that should be included)?"

Organisation

Disagreement: 77 submitter comments indicated disagreement with the Enabling Competitive Cities and Regions Action Area and Needs. 14 submitter comments disagreed with tolls and congestion charging. There was also disagreement with a responsive planning system (nsc=15). Of the 16 comments from submissions that disagreed with coordinating housing infrastructure, nine comments suggested that the central government should not get involved in planning. A further nine comments from submissions suggested that cities and regions should not be competitive (Table 37).

Table 37 Coded responses for 'Q18. For the 'Enabling Competitive Cities and Regions' Action Area and the Needs: What do you disagree with?' — Disagree

Main theme	Sub theme	Frequency
Disagree with improving access to employment (C3)		17
	Disagree with tolls and congestion charging	14
Disagree with coordinating housing infrastructure (C2)		16
	Central govt should not get involved in regional/local planning	9
Disagree with enabling a responsive planning system (C1)		15
	Growth should not be a priority	8
	Disagree with review and reform of urban planning (C1.1)	3
Disagree with improving regional / overseas connectivity (C5)		11
	Cities / regions should not be competitive	9
General disagreement with Action Areas and Needs		10
Concerns regarding consultation		9
	Concerns about survey	5
	Concerns about content	3
Disagree with coordinating housing / infrastructure (C2)		4
Disagree with planning for lead infrastructure (C4)		3

"We consider that cities and regions should not be based on a competitive model, but instead should be based on collaboration and, as far as possible, self-resilience."

Organisation

"The action area and needs are desirable and common-sense aspirations, and we reiterate that digital connectivity, including mobile phone coverage, remains a need in rural areas, as does fit-for-purpose roading."

Organisation

Gaps: Gaps identified by submitters related to the main themes of coordinated housing delivery (nsc=77), planning for lead infrastructure (nsc=60), good management and governance (nsc=54), improved access to employment through better transport (nsc=46), and the enabling of responsive planning (nsc=28) (Table 38 and Table 39)

Table 38 Coded responses for 'Q18. For the 'Enabling Competitive Cities and Regions' Action Area and the Needs: Are there any gaps? — Gaps

Main theme	Sub theme	Frequency
General gaps		106
	General gaps in management and governance	54
	Ensure the nation-wide consideration	12
	Increased collaboration across spheres of government / private	10
	Address bureaucracy	9
	Need to make sure that the plan is doable	4
	Less emphasis on competition between cities and regions	4
	Align with the RMA	3
	Sustainability and climate change	17
	Carbon neutral development	5
	Stronger environmental focus needed	4
	Emissions reduction and adaption	3
	Rights, equity and inclusion	6
	Funding and investment	5
	Community level should be considered	4
	Lifelong solutions for cost-effectiveness	3
	Lacks a holistic overview	3
Gaps in coordinating the delivery of housing (C1)		77
	Increase of high or medium density/cheaper/quality housing	21
	Limit urban sprawl	11
	Planning / consenting	10
	Need to have flexible planning to address housing needs	4
	Increased provision for social infrastructure	9
	More emphasis on accessible housing	5
	Develop close to transport hubs	4
Gaps in planning for lead infrastructure (C4)		60
	Integrate local and regional planning	12
	Regional planning for different growth scenarios	4
	Reform Public Works Act	10
	Add interconnectedness of spatial planning to framework	4
	Take environmental protection into consideration	4
	Increase planning time frame to beyond 30 years	3
	More details needed for lead infrastructure (C4)	3

"To build competitive cities, the Council believes we need to build up rather than out. Quality, compact, urban forms with higher population densities will make more efficient use of land allowing for increased and more affordable housing, greater access to public transport and employment, connectivity with social services and recreation opportunities. This will also allow New Zealand to move away from car dependency towards a multi-modal and public transit focused society."

Organisation

Table 39 Coded responses for 'Q18. For the 'Enabling Competitive Cities and Regions' Action Area and the Needs: Are there any gaps? — Gaps

Main theme	Sub theme	Frequency
Gaps in improving access to employment (C3)		59
	Transport	46
	Efficient public transport/alternatives should be priority	9
	Ensure transport planning is linked to spatial planning	7
	Transport funding	7
	Develop / improve rail network / connectivity	4
	Sustainable freight movement	3
	Improve connectivity via regional airports	3
	More jobs in the regions	5
	Encourage working from home	4
Gaps in coordinating housing & infrastructure (C2)		40
	Must align with regional / national planning	5
	C2.1 - 3 waters transition plan needs to be standardised	4
	More clarity needed on C2.5	3
	Small-scale water supply schemes are preferred to 3 waters	3
	Must align with regional planning	3
	More regional development	3
	More clarity needed	3
	Must align with regional / national planning	3
Gaps in improving regional and international connectivity (C5)		39
	Education	6
	Need to build resilience into infrastructure	5
	More focus needed on cyber-security	4
	Updated digital strategy to result in better co-ordination	4
	Develop / improve road network	3
Gaps in enabling responsive planning (C1)		28
	Gaps in housing development capacity and triggers (C1.3)	9
	Gaps in reviewing and reforming urban planning (C1.1)	5
	Forward thinking environmental planning	3
Water infrastructure		22
	Better usage of collected water	6
	Better management of stormwater	4
	Water must be a national concern	3
	Build resilient water infrastructure for future	3
	Water should not be privately owned	3

C1. Enable a responsive planning system | Te whakaahei i tētahi pūnaha whakamahere rata

New Zealand's urban housing and land prices are high by international standards. There is a limited supply of opportunities to build new homes, either 'upwards' or 'outwards'. This is an underlying cause of high housing prices in New Zealand cities.

Housing supply constraints are also an underlying cause of high urban housing prices.

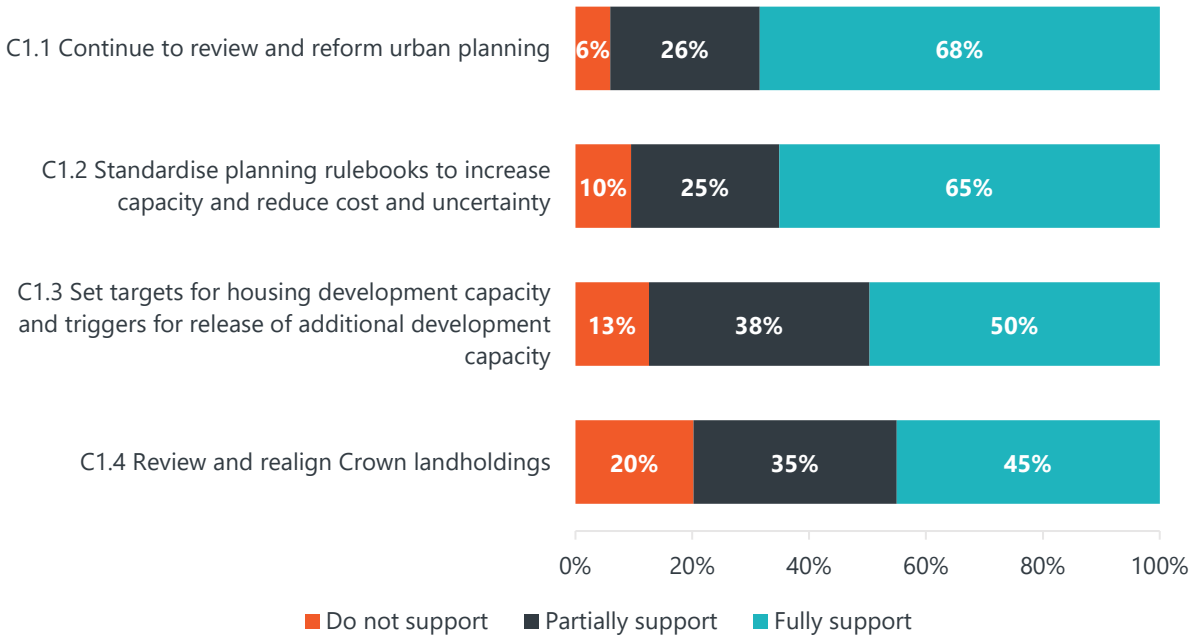
Options to improve housing supply and affordability do not always require new infrastructure.

5.2.1.1 Level of support for the proposed options to enable a responsive planning system

Four proposed options to enable a responsive planning system were presented. Figure 8 shows the support for each option.

- Continue to review and reform urban planning: 68% fully supported, and 26% partially supported.
- Standardise planning rulebooks to increase capacity and reduce cost and uncertainty:
- 65% fully supported, while 25% partially supported.
- Setting targets for housing development capacity and triggers for release of additional development capacity: 50% fully supported, while 38% partially supported.
- Review and realign Crown landholdings: 45% fully, while 35% partially supported.

Figure 8: Indicate your support for these proposed options to enable a responsive planning system
n = from 282 to 304



C2. Coordinate delivery of housing and infrastructure | Te whakahaere i ngā mahi whakatū whare, whakatū hanganga

Integrated planning and the delivery of infrastructure and development can reduce the pressure that growth places on infrastructure networks, particularly transport and water infrastructure. It can also identify cost-effective ways to develop new housing.

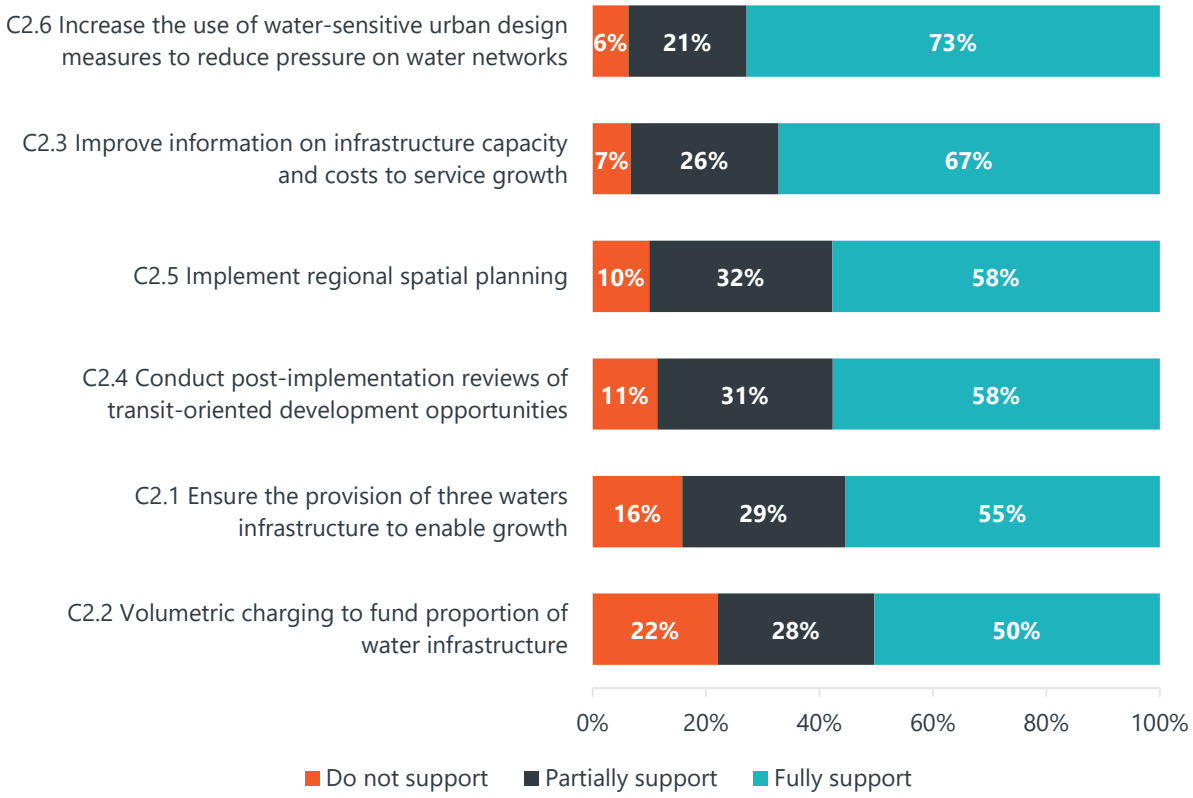
5.2.1.2 Level of support for the proposed options to co-ordinate delivery of housing and infrastructure

Six proposed options to coordinate the delivery of housing and infrastructure were presented. Figure 9 shows the support for each option.

- 73% fully supported increasing the use of water-sensitive urban design measures to reduce pressure on water networks, while 21% partially supported.

- 67% fully supported improving information on infrastructure capacity and costs to service growth, while 26% partially supported.
- 58% fully supported implementing regional and spatial planning, while 32% partially supported.
- 58% fully supported conducting post-implementation reviews of transit-oriented development opportunities, while 31% partially supported.
- 55% fully supported ensuring the provision of three waters infrastructure to enable growth, while 29% partially supported.
- 50% fully supported volumetric charging to fund proportion of water infrastructure, while 28% partially supported.

Figure 9: Indicate your support for these proposed options to co-ordinate delivery of housing and infrastructure. n = from 281 to 302



"Post-implementation reviews of transit-oriented development opportunities: These are good practice, but once again additional funding would be required in order to undertake these reviews. It would be important to ensure that the findings of any review lead to improvements."

Organisation

C3. Improve access to employment | Te whakapakari ake i ngā āheinga mahi

Traffic congestion and a lack of housing limits access to higher-wage jobs. Congestion pricing is the best way to ease traffic congestion.

5.2.1.3 (Q19.) Cities and areas identified as being appropriate for congestion pricing and/or road tolling

Submissions about the cities and areas suitable for congestion pricing and road tolling are mixed. 217 submitter comments indicated that the proposal could be appropriate for the four North Island cities of Auckland, Wellington, Tauranga, and Hamilton, while 131 comments from submissions suggested other areas, such as Christchurch and Dunedin (Table 40).

104 comments from submissions oppose congestion pricing and road tolling (Table 41). 17 submitter comments indicated that tolling unfairly targets low-income earners.

Table 40 Coded responses to 'Q19. What cities or other areas might be appropriate for some form of congestion pricing and/or road tolling?'—Cities.

Main theme	Sub theme	Frequency
North Island		217
	Auckland	101
	Wellington	66
	Tauranga	26
	Hamilton	18
Across New Zealand		74
	All major cities	39
	Where public transport is available	9
	Where congestion is an issue	6
	All urban areas	4
	All motorways	3
	Only cities where genuine infrastructure capacity issues exist	3
	New roads	3
South Island		57
	Christchurch	42
	Dunedin	8
	Queenstown	4

"A national Smart Road User Charging system would be able to be tweaked in many ways, targeting congestion and high use/emission vehicles, and would work using GPS everywhere, tracking every vehicle with its Vehicle ID, as is already used, never the driver. So, all of NZ."

Individual

Table 41 Coded responses to 'Q19. What cities or other areas might be appropriate for some form of congestion pricing and/or road tolling?'— Other comments.

Main theme	Sub theme	Frequency
Concerns / requirements for success		136
	Public transport	44
	Improve public transport network design and connectivity	40
	Road / congestion tolling	35
	Use toll funds to:	11
	Fund new road developments	4
	Improve public transport	4
	Should be equitable	9
	Should be reasonably / adaptively priced	4
	Governance / Management	20
	Government to investigate appropriate areas	4
	Encourage work from home	3
	Urban design / planning	14
	Decentralise the workforce / encourage work from home	8
	Reduced urban sprawl	4
	Roading	8
	Develop / improve road network	7
	Active travel	6
	Invest in infrastructure for active travel	4
	Private transport	5
	Discourage car-centric development	3
	Parking	4
Opposition to road / congestion tolling		104
	General opposition to tolling / congestion charging	63
	Congestion charging unfairly targets low-income earners	17
	Congestion charging requires quality public transport	8
	Congestion charging does not ease congestion / change behaviour	5
	Prefer a system of incentivising sustainable transport modes	4
	Congestion is the result of poor government planning	3

5.2.1.4 (Q20.) Ways in which potential equity impacts from congestion pricing can be best addressed

Suggestions were proposed by submitters to address the equity impacts that could potentially arise from the option of congestion pricing (Table 42). Propositions of note were:

- Decrease or subsidise the cost of public transport (nsc=53)
- Improve public transport as an appropriate alternative (nsc=86)

78 comments from submissions thought that impacts could not or should not be addressed (Table 43).

Table 42 Coded responses to 'Q20. What is the best way to address potential equity impacts arising from congestion pricing?'

Main theme	Sub theme		Frequency
Economic			170
	Subsidise		70
		Subsidise / decrease the cost of public transport	53
		Cross-subsidise between users	6
		Subsidise electric vehicles/bikes	4
		Subsidise congestion charges	4
	Targeted tolling		19
		Differentiate charges according to use and reason for travel	4
		Businesses who benefit from low congestion	3
		Only if accessible / cost-effective transport alternatives exist	3
		Use tolling only during peak hours	3
		Tolling linked to income / value of vehicle	3
	Targeted exemptions		49
		Exemptions linked to income	13
		Hardship exemptions	11
		Exemptions based on personal mobility ability / disability	9
		Pricing relief / exemption to Community Services Card holders	4
		Exempt carpools	3
	Use revenue to improve alternative transport		10
	Increase wages		4
	Base pricing on income brackets		3
Infrastructure			152
	Transport infrastructure		132
		Improve public transport as an appropriate alternative	86
		Invest in infrastructure for active travel	14
		Increase the park and ride options at transport hubs	9
		Develop / improve road network	4
		Ensure all major roads are tolled	3
		Reduce number of new roads built	3
		Invest in low carbon infrastructure (active travel)	3
	Housing infrastructure		11
		Support dense housing options close to jobs / public transport	9
	Decentralise development		4
	Tolling to fund infrastructure used		4
Governance / Management			30
	Better planning and implementation		9
	Facilitate working from home		4
	Learn from and follow international best practice		4
	Reduce the number of people on roads		3
Need to take a utilitarian approach to equity			9
	Ensure low income and minorities get a fair deal		6

"By ensuring there is a range of accessible and safe alternatives including public transport, walking, cycling and micro-transport solutions. Care needs to be taken that this caters for lower income people and work patterns e.g. shift work."

Organisation

Table 43 Coded responses to 'Q20. What is the best way to address potential equity impacts arising from congestion pricing?'

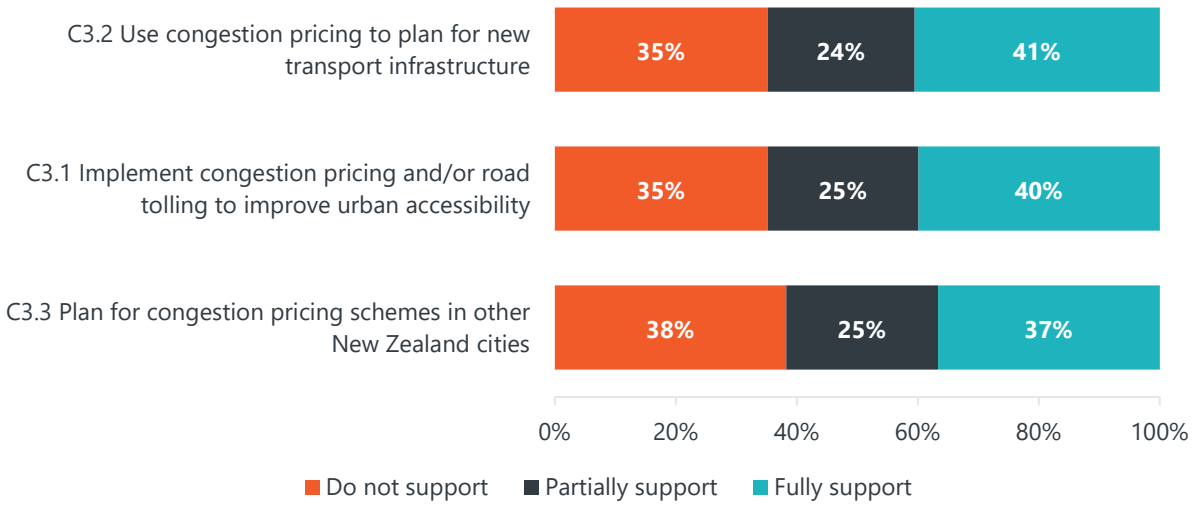
Main theme	Sub theme	Frequency
Opposition to congestion pricing / pricing for equity		78
	General opposition to congestion pricing	67
		Congestion charges are inherently inequitable	10
		Parking charges are already a form of congestion pricing	5
	Opposition to addressing equity	9
		No potential equity impacts	3

5.2.1.5 Level of support for the proposed options to improve access to employment

Three proposed options to improve access to employment were presented. Figure 10 shows the support for each option.

- 41% fully supported using congestion pricing to plan for new transport infrastructure, while 24% partially supported.
- 40% fully supported implementing congestion pricing and/or road tolling to help improve urban accessibility, while 25% partially supported.
- 37% fully supported planning for congestion pricing schemes in other New Zealand cities, while 25% partially supported.

Figure 10: Indicate your support for these proposed options to improve access to employment
n = from 301 to 303



C4. Plan for lead infrastructure | Te whakamahere i ngā hanganga tino pai o āpōpō

Planning for new infrastructure ahead of a new housing development can provide many benefits. Lead infrastructure planning provides for all transport modes and enables future choices.

There are situations where it makes sense to invest in new infrastructure ahead of housing and commercial development in growing areas. However, this can be costly and financially risky for providers.

There are several constraints to protecting land for future infrastructure, including legislative and policy reforms which are needed to enable corridor protection for lead infrastructure.

5.2.1.6 (Q21.) Support for a 10-year or 30-year lapse period for infrastructure corridor designations

Submitters were asked whether they felt a 10-year lapse period for infrastructure corridor designations was long enough or whether they felt there was a case for extending it to 30-years, consistent with spatial planning.

95 submitter comments agreed that a 10-year lapse period for infrastructure corridor designations is appropriate, while 90 submitter comments indicated that there is a case for extending the period, potentially to 30 years (Table 44).

15 comments from submissions noted the criticality of efficient planning and procurement practices when aiming for a 10-year period.

Table 44 Coded responses to 'Q21. Is a 10-year lapse period for infrastructure corridor designations long enough? Is there a case for extending it to 30 years consistent with spatial planning?'

Main theme	Sub theme	Frequency
10 years is sufficient		95
	Tentatively, 10 years is sufficient	6
Extend to 30 years		90
	Case dependent	6
	Both 10 and 30 year plans	3
Concerns / requirements for success		63
	Improve / efficient planning and procurement practices	15
	Corridor designation / spatial planning is worth while	8
	Allow flexibility	6
	Align timeframe with spatial planning timelines	5
	Infrastructure development should occur before housing	3
	Infrastructure planning should occur alongside long term plans	3
Alternative lapse periods proposed/comments on lapse periods		42
	Longer period may be beneficial (30+ years)	16
	10 years is too short	14
	Extend to 15 /20 / 25 years	6
	50 year lapse period	3
Opposed to lapse periods		12
	Any lapse period allows for stalling of project delivery	3

5.2.1.7 (Q22.) Support for establishing a protection fund for a multi-modal corridor, and suggestions for coverage

257 comments from submissions supported the establishment of a protection fund for a multi-modal corridor (Table 45).

136 submitter comments suggested using the fund for transport infrastructure, particularly the connectivity of the rail network (nsc=34), roading networks (nsc=31), and active travel (nsc=29).

Table 45 Coded responses to 'Q22. Should a multi-modal corridor protection fund be established? If so, what should the fund cover?'

Main theme	Sub theme	Frequency
Yes, the fund should be established		257
	The fund should cover:	193
	Transport infrastructure	136
	Develop / improve rail network / connectivity	34
	Develop / improve road network	31
	Conversion of existing roads to multi-modal use	8
	Limited roading upgrades	4
	Corridors for future connections	3
	Invest in infrastructure for active travel	29
	Develop / improve public transport	26
	Develop / improve bus network / connectivity	4
	Fund sustainable transport	7
	Develop / improve sea-freight infrastructure	4
	Fund government land acquisition	15
	Develop / improve water infrastructure	11
	Fund Three Waters	4
	Protection of corridors	5
	Develop / improve critical infrastructure	3
	Develop / improve telecommunications infrastructure	3
	Yes, as long as corridors are not widened considerably	3
No, the fund should not be established		55
General comments		17
	Unsure what a multi-model corridor protection fund is	10
	Concerns about funding	4

"We support the establishment of this fund. Such a fund must prioritise just outcomes, including Te Tiriti and supporting the Zero Carbon Act by prioritising active modes, public transport, and accessible options above the private motor vehicle "

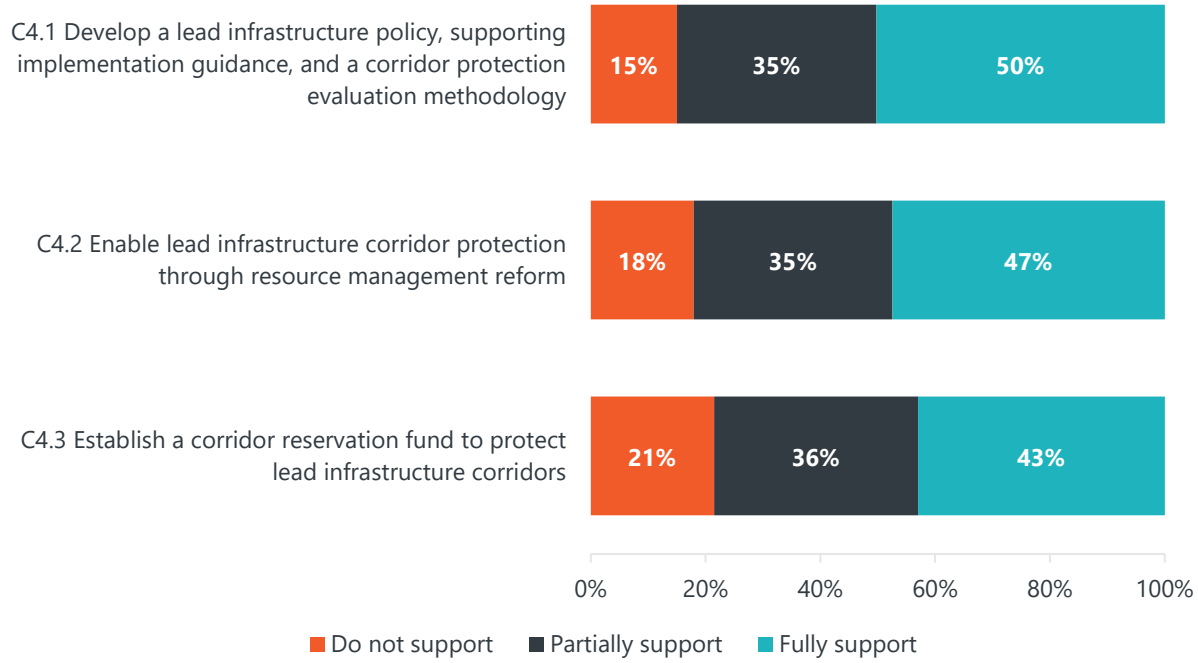
Organisation

5.2.1.8 Level of support for the proposed options to plan for lead infrastructure

Three proposed options to plan for lead infrastructure were presented. Figure 11 shows the support for each option.

- 50% fully supported developing a lead infrastructure policy, supporting implementation guidance, and a corridor protection evaluation methodology, while 35% partially supported.
- 47% fully supported enabling lead infrastructure corridor protection through resource management reform, while 35% partially supported.
- 43% fully supported establishing a corridor reservation fund to protect lead infrastructure corridors, while 36% partially supported.

Figure 11: Indicate your support for these proposed options to plan for lead infrastructure; n = from 228 to 234



C5. Improve regional and international connections | Te whakakaha i ngā hononga ā-rohe, ā-tāwāhi hoki

International trade plays a crucial role in the New Zealand economy, in terms of both exporting and importing goods. Encouragingly, New Zealand's telecommunications infrastructure is largely performing well.

A national digital strategy focusing on both the private and public sectors could help to ensure New Zealand retains its current digital connectivity advantages and keeps its regions connected.

5.2.1.9 (Q23.) Suggested infrastructure actions required to achieve universal access to digital services

294 comments from submissions suggested that infrastructure actions are required to achieve universal access to digital services (Table 46).

146 submitter comments suggested increasing network coverage and provision, while 70 comments from submissions indicated the need for increasing digital accessibility.

> *"Further roll out of fibre, to improve speeds and band width for those looking to move to their whenua, or rural area but want to continue to operate a small business or work remotely."*
>
> **Organisation**

Table 46 Coded responses to 'Q23. What infrastructure actions are required to achieve universal access to digital services?'

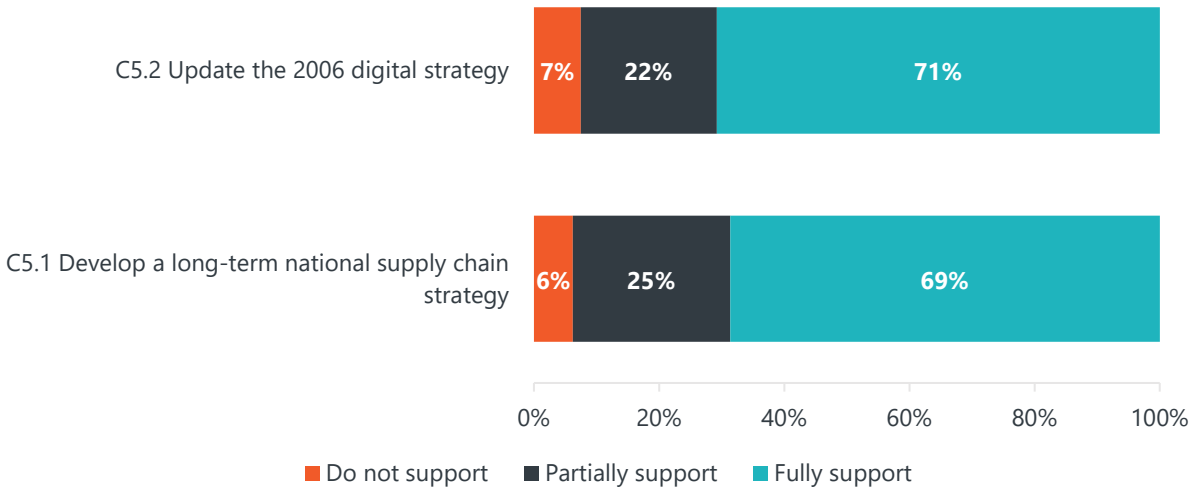
Main theme	Sub theme	Frequency
Infrastructure action required		294
	Increase network coverage / provision	146
	Increase in network coverage / provision / infrastructure	48
	Increase fibre network provision	29
	Increase rural coverage / access	29
	Increase access to satellite services	14
	Universal access country-wide	13
	Increase wireless internet access	9
	Increase accessibility	70
	Cheaper / free internet / communications	26
	Free internet access in public spaces / schools	15
	Increase the number of providers / competition / choices	9
	Ensure affordability / subsidisation	6
	Ensure a high level of security of digital services	5
	Improve access to digital devices	3
	Non-digital infrastructure	57
	Governance / Management	20
	Update the 2006 Digital Strategy	8
	Develop / improve rail network / connectivity	6
	Ensure security and privacy of digital tools	6
	Promote digital literacy	5
	Improve sea freight management	4
	Improve digital education and training	4
	Develop / improve road network	3
	Economic	17
	Increase investment in digital services	7
	Allow the free market to drive investment	3
	Governance	4
	Align with functions of central government	3
General comments		16
	Digital services are essential to work and community growth	3
General opposition		15
	No need to aim for universal access	14
	No steps required	4

5.2.1.10 Level of support for the proposed options to improve regional and international connections

Two proposed options to improve regional and international connections were presented. Figure 12 shows the support for each option.

- 71% supported updating the 2006 digital strategy, while 22%, partially supported.
- 69% supported developing a long-term national supply chain strategy, while 25% partially supported.

Figure 12: Indicate your support for these proposed options to improve regional and international connections; n = from 267 to 290



"C5.2: Update the 2006 Digital Strategy must result in better co-ordination among the various efforts across government and the private sector than the wildly ad hoc nature of most connectivity announcements in recent years. Further, regular reviews and updates to the strategy over time would have regard for changing circumstances, such as progressive phase-out of in-person services, ongoing issues around access to connectivity services, and emerging technologies."

Organisation

Action Area Three: Creating a better system | Te hanga i tētahi pūnaha pai ake

New Zealand's current systems and processes for planning, determining, delivering and operating infrastructure are being challenged.

As New Zealand ramps up its infrastructure investment, we need to ensure these systems are sufficiently flexible and adaptable to respond to current and future pressures, changes, stresses and shocks (both those we can foresee and those we cannot). Our infrastructure needs to be not only fit for purpose but also fit for the future.

There are several challenges in the current infrastructure system. They include:

- Fragmented planning and decision-making across the infrastructure system.
- Difficulties in funding infrastructure, especially in growing cities and responding to the infrastructure costs of a zero-carbon 2050.
- An inconsistent and bespoke application of investment planning and business case application.
- A lack of transparency in investment decisions and experience at some organisational levels in delivering infrastructure projects.
- The cost of building infrastructure in New Zealand, which appears to be high by international standards and is rising rapidly.

New infrastructure is expensive, and we cannot afford to build everything. Trade-offs and prioritisation are necessary. To create a better infrastructure system, we also must analyse and consider current system deficiencies, global best practice and future needs.

The areas where we believe change will be needed for creating a better system are:

- Integrating infrastructure institutions.
- Ensuring equitable funding and financing.
- Making better use of existing infrastructure.
- Requiring informed and transparent decision-making.
- Developing and prioritising a pipeline of work.
- Improving project procurement and delivery.
- Reducing costs and improving consenting processes.
- Activating infrastructure for economic stimulus.

(Q24.) Overview of responses to 'Creating a Better System' Action Area and Needs

Agreement: 49 comments from submissions agreed with the Creating a Better System Action Area and Needs (Table 47). 15 of these comments supported the integration of existing infrastructure institutions. A further 14 submitter comments agreed with an equitable distribution of funding and financing.

Table 47 Coded responses for 'Q24. For the 'Creating a Better System' Action Area and the Needs: What do you agree with?' — Agree

Main theme	Sub theme	Frequency
General agreement with Action Area and Needs		49
Agree with integrating infrastructure institutions (S1)		15
	More central government / Crown involvement	4
Agree with ensuring equitable funding and financing (S2)		14
	Agree with rating crown land (S2.2)	5
	Support for PPPs	3
Agree with informed and transparent decision-making (S4)		12
	Agree with undertaking a cost benefit analysis (S4.2)	3
Agree with making better use of infrastructure (S3)		12
	Agree with S3.1 - consideration of non-built options	5
Agree with developing and prioritising a pipeline of work (S5)		8
Agree with reducing costs and improving consenting (S7)		7
Agree with improved project procurement and delivery (S6)		5
	Agree with establishing a projects leadership academy (S6.1)	3
Partial agreement with Action Area and Needs		5
Agree with activating infrastructure for economic stimulus (S8)		4

> *"It is very positive that central government is now wanting to have involvement to ensure an effective, efficient and integrated national infrastructure system with clear priorities and streams of work. It is long overdue."*
>
> **Individual**

Disagreement: Nine comments from submissions that indicated disagreement with the Creating a Better System Action Area and Needs disagreed with the Need to ensure equitable distribution of funding and financing (Table 48).

Table 48 Coded responses for 'Q24. For the 'Creating a Better System' Action Area and the Needs: What do you disagree with?' — Disagree

Main theme	Sub theme	Frequency
General disagreement with Action Area and Needs		18
	Opposed to bureaucracy	4
	Opposed to centralisation	4
Disagree with ensuring equitable funding and financing (S2)		9
Disagree with reducing costs and improving consenting (S7)		3

Gaps: Gaps identified in submitter comments for Creating a Better System Action Area and Needs largely related to Table 49:

- Governance and management, such as the need for more comprehensive planning and improved cost-benefit analysis (nsc=124)
- Equitable funding and financing (nsc=26)
- Improving project procurement and delivery (nsc=18)

Table 49 Coded responses for 'Q24. For the 'Creating a Better System' Action Area and the Needs: Are there any gaps?' — Gaps

Main theme	Sub theme	Frequency
General gaps		194
	Governance / Management	124
	Improved comprehensive planning	20
	More/improved usage of cost-benefit analysis	5
	Adaptive, flexible planning	4
	Increased centralisation needed	13
	Integrators across the infrastructure system required	12
	Rationalised and coordinated infrastructure institutions	12
	Focus on effectiveness of management	10
	Reduce bureaucracy	6
	Needs a more balanced / sustainable / long-term focus	5
	Better collaboration between central and local government	5
	More consultation needed	4
	More mention of environmental protections	15
	Energy	7
	Need to address the skilled labour shortage	6
	Transport	4
	Waste management	3
	Community	14
	Give more decision-making power back to communities	5
	More equity for disabled people	3
	Ensure consideration of the community	3
	Less focus on growth	4
	Improved funding for mental health services	3
	Need to address education	3
Gaps in ensuring equitable funding and financing (S2)		26
	Need to consider alternative options for S2.3	4
Gaps in improving project procurement and delivery (S6)		18
	Funding arrangements need more consideration	6
	Gaps in establishing a major leadership academy (S6.1)	4
	Allow flexibility for innovative solutions	3
Gaps in reducing costs and improving consenting (S7)		11
Gaps in better use of existing infrastructure (S3)		7
Gaps in developing and prioritising a pipeline of work (S5)		6
Gaps in activating infrastructure for economic stimulus (S8)		5
Gaps in integrating infrastructure (S1)		5
More trained professionals and experts		4

S1. Integrate infrastructure institutions | Te kōmitimiti whakanōhanga

New Zealand has many infrastructure providers, regulators and policy-makers involved in infrastructure planning, funding and delivery. Industry structure, governance and regulation vary significantly between different infrastructure sectors. There is an ongoing need to ensure that infrastructure agencies work collaboratively to progress infrastructure planning and delivery. Regional spatial planning can improve this coordination.

5.2.1.11 (Q25.) New Zealand's institutional setting for the provision of infrastructure

355 comments from submissions indicated that the current institutional settings in New Zealand were incorrect and potentially ineffective (Table 50). The two main reasons provided for this were fragmented governance (nsc=54) and bureaucracy (nsc=38).

Table 50 Coded responses for 'Q25. Does New Zealand have the right institutional settings for the provision of infrastructure?'

Main theme	Sub themes	Frequency
No; incorrect institutional settings for infrastructure		355
	Ineffective institutional settings	231
		Fragmented governance 54
		Current setting is ineffective because of bureaucracy 38
		National vision is needed 4
		Poor communication between local and central government 3
		Concerns about the ability to make sound decisions 17
		Lack of (long-term) accountability / decision making 14
		Concerns regarding LG capability / capacity to provide infrastructure 11
		Lack of public consultation 10
		Promotes competition between councils (inefficiency) 9
		Spatial planning not taken into consideration 9
		Infrastructure needs government control / oversight 8
		Infrastructure provided under current setting is unsuitable 7
		Current setting results in implementation delays 6
		Electricity sector needs reforming 5
		Not enough funding for local government 5
		Lack of consultation with the private sector 3
		Shifting of responsibilities from central to local 3
		Concerns regarding institutional focus on vehicles 3
		Process is not cost-effective 3
		Funding models limit success 3
Yes; correct institutional setting for infrastructure		35
	Yes, subject to review of governance / improvement	11
No position provided/general comments		48
	More collaboration between local and central government needed	5
	Siloed approach to provision has negative knock-on effect	4
	Reinstate the Ministry of Works	3
	Long-term planning needed	3
	Central government should provide engaged leadership / guidance	3
	Improve rail / road / air / sea transport infrastructure	3

"Addressing this will require different roles, policy and funding settings than what exist today. For a country of circa five million, we have too many competing layers of institutions involved in the planning, funding and delivery of infrastructure "

Organisation

"No. There is to much talking and not enough action. E.g. a new Harbour Crossing was talked about in Auckland in 1986, and Rail to Marsden Point."

Individual

5.2.1.12 (Q26.) Coordination between local and central government to manage, plan and implement infrastructure

397 submitters suggested several ways in which local and central governments can better coordinate themselves to manage, plan and implement infrastructure, as noted in (Table 51). The most frequent themes are:

- Government behaviour (nsc=145): the need for improved collaboration and sharing of vision (nsc=87) with bureaucracy addressed (nsc=28)
- Government roles and responsibilities (nsc=119): the need address planning (nsc=22)
- Governance structures (nsc=90): including more central government oversight (nsc=16), funding (nsc=14) and authority (nsc=10)
- Regulation (nsc=43): including the need for community centred decision making (nsc=15) and the standardisation of rules (nsc=14)

"Forward planning by both central and local government would appear to be an obvious place to start to better allow for co-ordination of efforts and common understanding of challenges and barriers to plan and implement infrastructure."

Organisation

"Subsidarity. Enable local problems able to be solved locally but with a larger context of goals set centrally. Consider a team of teams hierarchical approach with an infrastructure ombudsman oversight and review process."

Individual

Table 51 Coded responses for 'Q26. How can local and central government better coordinate themselves to manage, plan and implement infrastructure?'

Main theme	Sub theme	Frequency
Local and central government		397
	Government behaviour	145
		Increased collaboration / communication / shared vision	87
			Central government to take more of a leadership role	6
		Address bureaucracy in governance	28
		Encourage better management/decision-making skills	16
		Address inefficiency in local government	4
	Government roles and responsibilities	119
		Areas to focus on	45
			Focus on core services and critical infrastructure	13
			More and better trained personnel	5
			Focus on Three Waters	4
			Focus on environmental sustainability	3
			Fresh water provision	3
		Planning	22
			Better / more adaptive long-term planning	9
			Local government to function as planner / overseer of works	5
			Larger-scale planning	4
		Economic	17
			Practice fiscal responsibility	8
			Central government to focus on funding	4
			Allow local authorities to collect GST on consents	3
		Support for regional spatial planning	13
			Spatial databases	4
		Ensure accountability	10
		Clarity on roles and responsibility	4
		Improve local government's experience / skills	3
	Governance structures	90
		Central government oversight and support needed	16
		Increased funding to local governments	14
		Decrease role of local in favour of central government	10
		Restructure government	10
			Decrease / merge authorities	5
		Empower local governments further	9
		Establish a centralised infrastructure body	7
			Reinstate the Ministry of Works	5
		Better integration between central and local government	7
		Independent regulator / auditor needed	5
		Short political term and bureaucracy hinders development	5
	Government regulation	43
		Community centred decision making	15
		Standardisation of rules / regulations / responsibilities	14
		Revision of legislation	4
		Develop responsive and flexible policies	4
General comments		7
	Increase workforce on the ground	3

"Align incentives of central government and local government by increasing funding to local government, tied to various goals - increasing housing supply and renewing three waters infrastructure top priority."

Individual

5.2.1.13 (Q27.) Suggested principles that can be used to guide how infrastructure providers are structured, governed and regulated

When asked to suggest principles that could be used to guide infrastructure providers, submitters indicated principles relating to (Table 52):

- Improved management (nsc=39)
- Increased community engagement (nsc=29)
- Collaboration (nsc=27)
- Equality and fairness (nsc=22)
- Transparency (nsc=18)
- Regulation (nsc=17)
- Long-term flexible planning (nsc=17)

"Perhaps we need an integrated Ministry of Infrastructure? Large organisations should be required to seek local input and there should be no monopolies of control allowed by business interests."

Individual

"The principles listed at the start of the Consultation Document would be a good start – future-focused, transparent, focused on options, integrated and evidence-based. To that we would add collaboration/co-operation and competitive cities and regions."

Organisation

Table 52 Coded responses for 'Q27. What principles could be used to guide how infrastructure providers are structured, governed and regulated?'

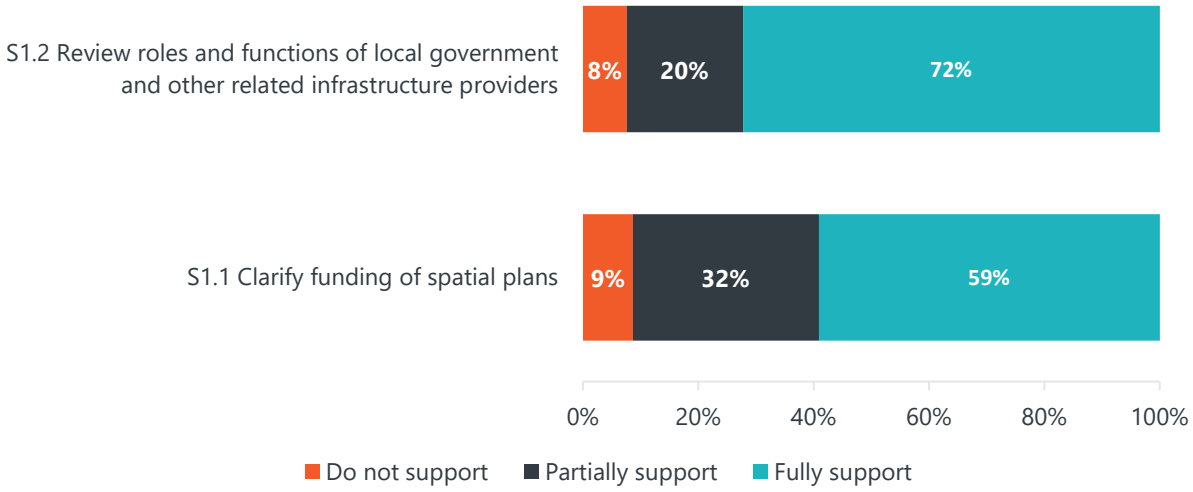
Main theme	Sub theme	Frequency
Management / Governance		283
	Improved management	39
	Better leadership by central government	7
	Technocratic leadership	6
	Do more work "in-house"	3
	Increased community engagement / participation	29
	Collaboration / communication	27
	Make use of experts	6
	Equity / fairness	22
	Te Tiriti o Waitangi	6
	Social responsibility	3
	Transparency	18
	Regulation	17
	New / improved regulations needed	12
	Minimal regulation	4
	Ensure long-term / flexible planning	17
	Centralised / monocentric governance	15
	Accountability	14
	Decentralised / polycentric governance	9
	Ethical governance: respect / integrity / honesty / trust	7
	Encourage competition	6
	Evidence based governance	5
	Privatisation of infrastructure provision	4
	Stewardship	4
	Health and safety	4
	'Fit for purpose'	3
	Fewer people involved in decision making	3
	Spatial planning	3
	Efficiency / time-management	3
Economic		41
	Sound fiscal management	18
	Cost-effectiveness	9
	General economic principles	6
	Adopt polluter / user pays principle	4
	Central government should fund critical infrastructure	3
	Central government should fund / support local infrastructure	3
	Include a holistic approach to wellbeing in models	3
Sustainability		22

5.2.1.14 Level of support for the proposed options to integrate infrastructure institutions

Two proposed options to integrate infrastructure institutions were presented. Figure 13 shows the support for each option.

- 72% fully supported reviewing roles and functions of local government and other infrastructure providers, while 20% partially supported.
- 59% fully supported clarifying funding of spatial plans received, while 32% partially supported.

Figure 13: Indicate your support for these proposed options to integrate infrastructure institutions
n = from 242 to 263



S2. Ensure equitable funding and financing | Te whakatūturu i te tahua pūtea, ahumoni hoki e tōkeke ana

Infrastructure can make our lives easier, but it is not free. Someone must pay for it.

The way we fund and finance infrastructure can have significant impacts on what projects are implemented, which community needs are met, who can access infrastructure, and how we use it.

New Zealand is facing some significant challenges that affect how we fund infrastructure. However, funding and financing challenges do not always require new revenue streams.

5.2.1.15 (Q28.) Steps that local and central government can take to make better use of existing funding and financing tools

Key propositions from submitter comments related to the reviewing of fiscal policies and funding allocation (nsc=72) with the need to increase efficiency and accountability of governance and management (nsc=45, Table 53).

> *"Funding streams need certainty, with a mix of user charging and government investment."*
>
> **Individual**

Table 53 Coded responses for 'Q28. What steps could local and central government take to make better use of existing funding and financing tools to enable the delivery of infrastructure?'

Main theme	Sub theme	Frequency
Economic		146
	Review fiscal policies and funding allocation	72
	More favourable budgeting	14
	Funding levels must promote efficiency	5
	Increased funding for local government	3
	Central government funding for projects	11
	Develop an infrastructure bank	5
	Issue infrastructure bonds to raise funds	3
	Expansionary fiscal policy	4
	Greater usage of private funding	3
	Divest / sell off unneeded / unwanted assets / infrastructure	3
	Ensure conservative spending / fiscal responsibility	35
	Financial transparency	7
	Utilise funding and financing tools	3
	Rates / Taxation	30
	User pays (road tolls / water / waste / electricity)	9
	Opposed to rates / taxes / tax increases	5
	Equitable taxation system	3
	Rating of Crown land, Kāinga Ora and Tertiary institutions	3
Management / Governance		120
	Increase efficiency and accountability	45
	Reduce regulations / bureaucracy	14
	Centralise infrastructure delivery ownership and management	10
	Higher degree of communication and collaboration	9
	Utilise experts and trained professionals	3
	Ensure strategic long-term decision-making / delivery	28
	Develop responsive and flexible policies	5
	Promote PPPs	3
	Investigate local solutions tailored to areas	3
	National review of all projects / increased auditing	14
	Do a cost-benefit analysis on projects	10
	Focus on core responsibilities / critical infrastructure	13
	Restructure local governments	6
	Technocratic leadership	4
Community		15
	More meaningful community consultation	9
	Less community consultation	3

5.2.1.16 (Q29.) The suitability of existing infrastructure funding and financing arrangements

279 comments from submissions indicated that existing infrastructure funding arrangements were unsuitable for addressing infrastructure provision challenges.

Options suggested by submitters to improve these arrangements included reviewing fiscal policies and financial allocation (nsc=123), such as a greater use of targeted taxes (nsc=45) and increasing the funding available (nsc=37). Additionally, submitter comments suggested changing governance structures and practices (nsc=51).

By comparison, 20 submissions felt that the existing arrangements were sufficient (Table 54).

Table 54 Coded responses for 'Q29. Are existing infrastructure funding and financing arrangements suitable for responding to infrastructure provision challenges? If not, what options could be considered?'

Main theme	Sub theme	Frequency
No; existing infrastructure funding not suitable		279
	Infrastructure funding curtailed by bureaucracy	6
	Existing arrangements too traditional / conservative	4
	Options to be considered	200
	Review fiscal policies and funding allocation	123
	Taxation	45
	Adopt user pays principle	17
	Increase taxation	7
	Taxation equity for infrastructure funding / provision needed	6
	Review taxation policies	3
	Application of accommodation levy or bed tax in tourist regions	3
	Support rating of Crown assets	3
	Requires more investment	37
	Central Government funding for local projects	19
	Support for infrastructure / climate bonds	6
	Partner with Kiwisaver schemes to increase funding	3
	Practice fiscal discipline / sound fiscal management	13
	Wholistic approach to nation-wide infrastructure delivery	4
	Allow more local control of and investment in infrastructure	3
	Holistic approach to nation-wide infrastructure delivery	3
	Governance structures and practice	51
	Increase private sector involvement	14
	Centralise government	11
	Do not privatise infrastructure	5
	Long-term, flexible planning	5
	Technocratic leadership and workforce needed	4
	Conduct reviews / assessments / audits	4
	Suggestions for investment	16
	More money for communities and iwi	3
	Fund transport infrastructure	3
	Sustainable investment	3
	Make use of existing funding and financing tools	3
Yes; existing infrastructure funding suitable		20
	Yes, if used wisely	3

5.2.1.17 (Q30.) Funding depreciation as part of maintaining balanced budgets

> *"The government should be using its strong balance sheet, high credit rating and low interest rates to just directly fund many of these projects. Where business cases show strongly positive benefit-cost ratios, it's a fine idea to take on debt to fund them. We don't need to reinvent the wheel here!"*
>
> **Individual**

138 comments from submissions indicated agreement with local authorities being required to fund depreciation. 33 submitter comments were in disagreement (Table 55).

Table 55 Coded responses for 'Q30. Should local authorities be required to fund depreciation as part of maintaining balanced budgets on a forecast basis?'

Main theme	Sub theme	Frequency
Yes; local authorities should be required to fund depreciation		138
	With flexibility	6
	Yes; required to fund maintenance and replacement	4
	Yes; ensure local authorities do a cost benefit on developments	3
	The forecasts should be accurate	3
No; local authorities shouldn't be required to fund depreciation		33
	No; central government should fund depreciation	5
General comments		26
	They do this already	5
	Councils to ring-fence budgets for development / replacement	3

5.2.1.18 Level of support for the proposed options to ensure equitable funding and financing

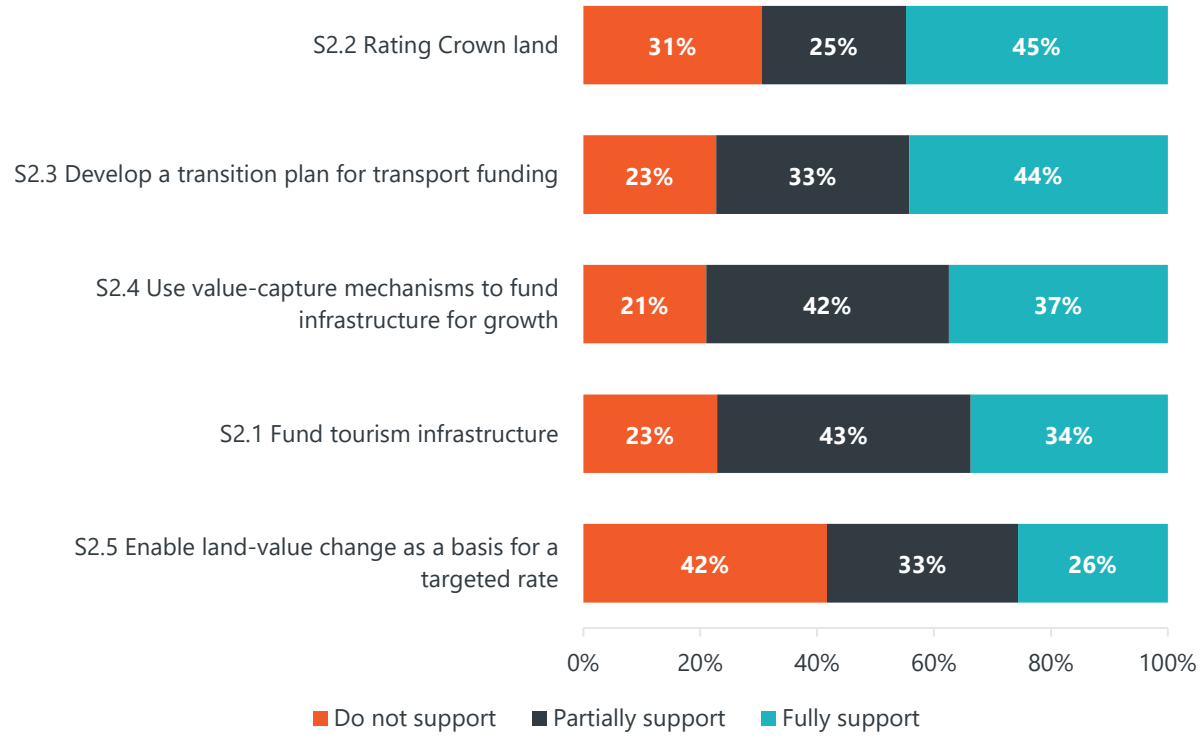
> *"Not all councils or communities are coming at these challenges from the same base. Funding depreciation is 'tidy', from a certain point of view, but may not be the most efficient use of limited funds in the scheme of the total range of demands on a specific community or council."*
>
> **Organisation**

> *"Yes, in principle, but with more flexibility to go under or over budget, as well as re-evaluation of depreciation rates in case assets live longer or less long than planned."*
>
> **Individual**

Five proposed options to ensure equitable funding and financing were presented. Figure 14 shows the support for each option.

- 45% fully supported rating of Crown land, while 25% partially supported.
- 44% fully supported developing a transition plan for transport funding, while 33% partially supported.
- 37% fully supported using value-capture mechanisms to fund infrastructure growth, while 42% partially supported.
- 34% fully supported funding tourism infrastructure, while 43% partially support.
- 26% fully supported enabling land-value change as a basis for a targeted rate, while 33% partially supported.

Figure 14: Indicate your support for these proposed options to ensure equitable funding and financing
n = from 211 to 258



S3. Make better use of existing infrastructure | Te whakapai ake i te hanganga e tū ana i tēnei wā

It's not just about building more infrastructure. Achieving good outcomes and coping with future challenges requires us to better use and manage existing infrastructure.

The first step to better manage existing infrastructure is to understand what condition it is in. Demand management can improve the performance of existing infrastructure.

5.2.1.19 (Q31.) Proposed options to better manage and utilise existing infrastructure assets

Two key themes have emerged from submitter responses (Table 56):

- Better administration and management of infrastructure (nsc=138)
- A focus on transport infrastructure (nsc=70), including investing for active travel (nsc=25), and improving the rail network (nsc=17)

> *"Congestion charging, reallocating on-street parking for walking, cycling and public transport lanes, reallocating a lane on the Auckland Harbour Bridge to walking and cycling, metering potable water supply, encouraging domestic grey water recycling."*
>
> **Individual**

Table 56 Coded responses for 'Q31. What options are there to better manage and utilise existing infrastructure assets?'

Main theme	Sub theme	Frequency
Governance / Management		153
	Better administration / management of infrastructure	138
	Improve data collection / auditing	35
	Improve demand management	19
	Centralise asset management / oversight	15
	Address delays in implementation caused by politics/bureaucracy	14
	Better communication / collaboration / consultation	12
	Ensure maintenance is funded properly and efficiently	11
	Utilise expert personnel	5
	Develop guidelines / standards	4
	Increase / change working hours	3
	Defer control to local governments	3
	Encourage sustainable options	3
Infrastructure		148
	Transport infrastructure	70
	Invest in infrastructure for active travel	25
	Repurpose roads away from vehicle use	16
	Develop / improve rail network / connectivity	17
	Provide incentives for the use of rail freight	5
	Discourage private vehicle use	9
	Improve the public transport network and its access	6
	Encourage / subsidise electric vehicles	3
	Use non-built options to improve traffic flow	3
	Ensure infrastructure is properly installed and used	26
	Water infrastructure	15
	Improve / develop water infrastructure and quality	11
	Housing and other buildings	14
	Increased density of housing / create urban hubs	8
	Improve housing supply and rental management	4
	Refit buildings to comply with low energy usage	2
	Improved waste management / recycling	5
	Improve energy generation and distribution	4
	Focus on resilient infrastructure	3
Financial management		41
	User-pays / demand / congestion pricing	22
	Practice fiscal discipline / sound management	5
	Support free market	4
	Limit private sector involvement	3
	Replacement at times is most cost-effective	3

5.2.1.20 (Q32.) Benefits in centralising central government's asset management functions and the areas and organisations to which these should apply

216 submitter comments agreed that there might be benefits compared with 77 submitter comments that considered there to be no benefits from centralisation (Table 57). Benefits identified included transport and freight (nsc=21), the energy grid (nsc=15), and three waters (nsc=15). 17 comments from submissions that did not support centralisation, noted concerns about central government not understanding local requirements.

Table 57 Coded responses for 'Q32. Are there benefits in centralising central government asset management functions? If so, which areas and organisations should this apply to?'

Main theme	Sub theme	Frequency
Yes, there are benefits		216
	Areas (categorical)	74
	Transport / freight	21
	Rail	6
	Roading	4
	Air travel	3
	Sea/ports	3
	Energy grid	15
	Energy production	6
	Water (including Three Waters)	15
	Should cover everything	5
	Health	4
	Urban design	3
	Education	3
	Governance / management	58
	Central government should be in charge of infrastructure	38
	Selective centralisation	9
	Centralised asset management body	6
	Central government should be in charge of funding / strategy	6
	Ensure technocratic leadership	4
	In an advisory capacity only	3
	Ensure collaboration co-management with local council	8
	Could improve underinvestment	4
	Organisations	8
	Standardisation / integration / maintenance of infrastructure	7
	Yes, with reduced bureaucracy	5
No, there are no benefits		77
	Concerns with management by central government	17
	Centralised entities will not understand local requirements	6
	Decentralised decision making is more cost effective/efficient	6
	Would be removing expertise if centralised	5
	Risks for smaller communities / iwi	3
General comments		12
	More information needed	7

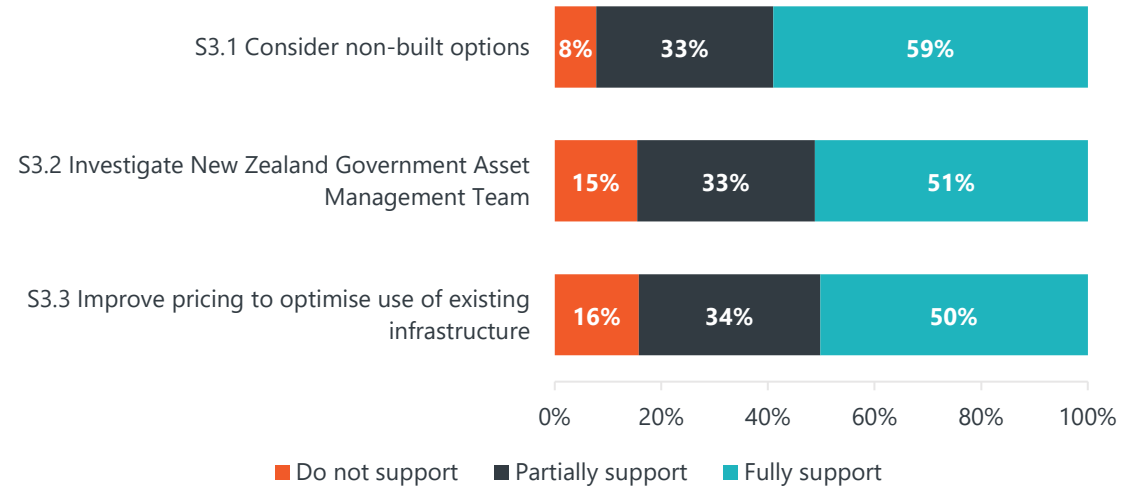
5.2.1.21 Level of support for the proposed options to make better use of existing infrastructure

> *"There is but then we go back to the same situation NZ was in before the Department of Works was disbanded. The reasons for re-organising then and centralising now did not change and still apply."*
>
> **Organisation**

Three proposed options to make better use of existing infrastructure were presented. Figure 15 shows the support for each option.

- 59% fully supported consideration of non-built options, while 33% partially supported.
- 51% fully supported investigating the establishment of a New Zealand Government Asset Management Team, while 33% partially supported.
- 50% fully supported improving pricing to optimise use of existing infrastructure, while 34% partially supported.

Figure 15: Indicate your support for these proposed options to make better use of existing infrastructure; n = from 246 to 256



S4. Require informed and transparent decision-making | Te whakahau me whakatau i runga te māramatanga me te mōhiotanga

Infrastructure investment decision-making is often complex, increasing the need for good analysis.

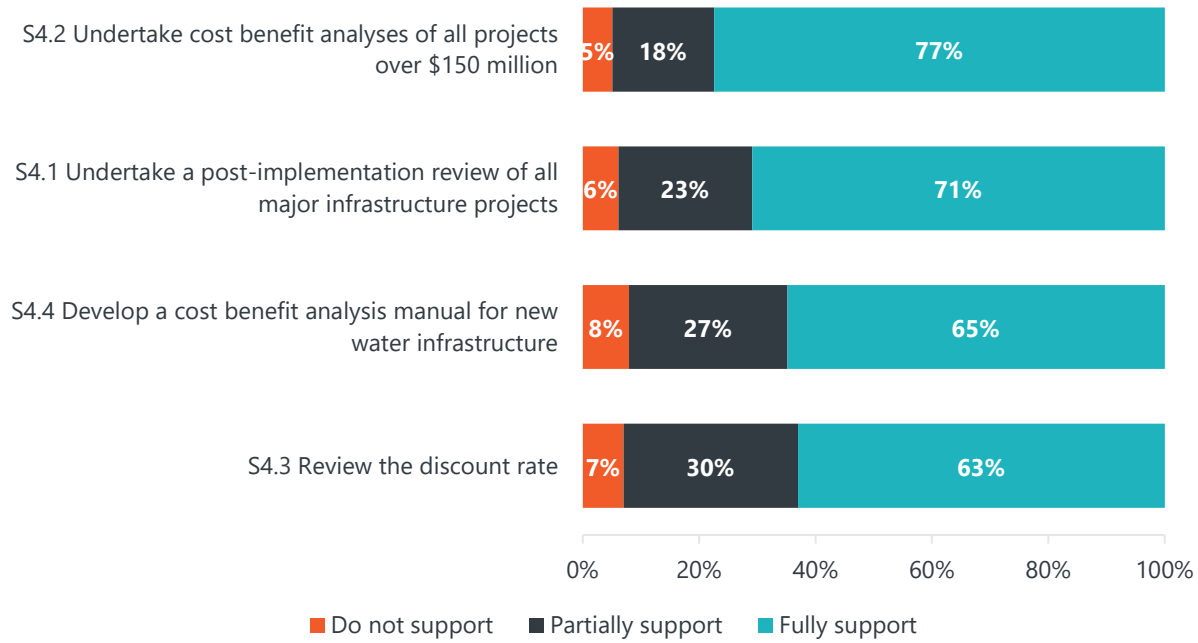
Improvements in the infrastructure decision-making culture are needed. Infrastructure decisions should be transparent and subject to post-implementation review.

5.2.1.22 Level of support for the proposed options to require informed and transparent decision-making

Four proposed options to require informed and transparent decision-making were proposed. Figure 16 shows the support for each option.

- 77% fully supported undertaking cost benefit analyses of all projects over $150 million, while 18% partially supported.
- 71% fully supported undertaking a post-implementation review of all major infrastructure projects, while 23% partially supported.
- 65% fully supported developing a cost benefit analysis manual for new water infrastructure, while 27% partially supported.
- 63% fully supported reviewing the social discount rate policy, while 30% partially supported.

Figure 16: Indicate your support for these proposed options to require informed and transparent decision-making; n = from 200 to 261



S5. Develop and prioritise a pipeline of work | Te whakawhanake me te whakamatamua i tētahi whakaraupapa mahi

An infrastructure pipeline is a managed database that provides a detailed and informed picture of upcoming infrastructure investment or major construction opportunities.

Te Waihanga publishes an up-to-date pipeline that provides information on the project planning and delivery intentions of more than 100 infrastructure providers.

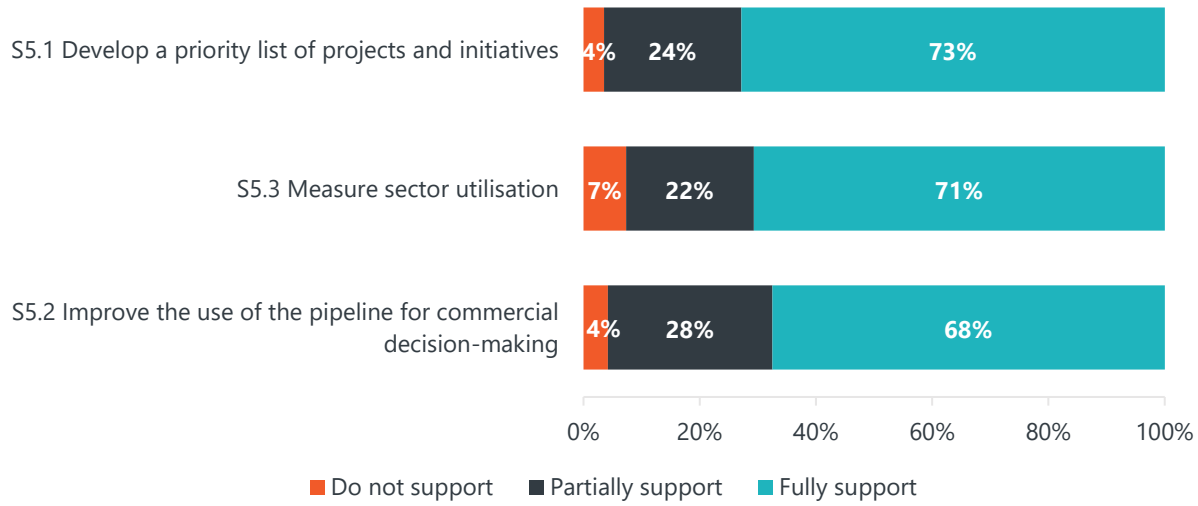
Further work is needed to improve the transparency and credibility of projects. Better ways to measure current and future construction sector capacity are also needed.

5.2.1.23 Level of support for the proposed options to develop and prioritise a pipeline of work

Three proposed options to develop and prioritise a pipeline of work were presented. Figure 17 shows the support for each option.

- 73% of submitters fully supported developing a priority list of projects and initiatives, while 24% partially supported.
- 71% fully supported measuring sector utilisation, while 22% partially supported.
- 68% fully supported improving the use of the pipeline for commercial decision-making, while 28% partially supported.

Figure 17: Indicate your support for these proposed options to develop and prioritise a pipeline of work; n = from 232 to 254



S6. Improve project procurement and delivery | Te whakapai ake i te kaitaonga me te tuku ratonga

The effective procurement and delivery of infrastructure is fundamental to the delivery of quality public services and achieving the best value for money.

In general, there appears to be a lack of knowledge of and experience in delivering infrastructure projects at the senior leadership level in the public sector, and a scarcity of highly trained and experienced staff managing procurement and contracts.

5.2.1.24 (Q33.) Improving the procurement and delivery of infrastructure projects

Submitters responded with these proposals (Table 58):

- Improved governance (nsc=163), including through clear briefs and frameworks (nsc=24), the employment of expert knowledge (nsc=20), and working to a pipeline or deadline (nsc=14)
- Improved economic management (nsc=56), including through improved and holistic tendering and procurement processes (nsc=18), more accurate costings and forecasts (nsc=9), and increased competition (nsc=8)
- General ideas (nsc=44) included addressing environmental sustainability (nsc=7), and encouraging community involvement (nsc=5)
- Improved regulatory management (nsc=25), including improving contracting (nsc=12) and the expansion of procurement guidelines (nsc=3)

Table 58 Coded responses for 'Q33. What could be done to improve the procurement and delivery of infrastructure projects?'

Main theme	Sub theme	Frequency
Improved governance		163
	Clear briefs / frameworks	24
	Better long-term planning is needed	5
	More extensive use of cost benefit analysis	3
	Employ expert knowledge	20
	Seek foreign experts	5
	Work to pipeline / deadline	14
	Establish preferred vendors	12
	Use local businesses	8
	Ensure accountability	9
	Open and transparent communication	8
	Improve delivery systems	6
	Ensure pragmatic decision making	6
	Infrastructure should be centrally owned / funded / managed	5
	Less subcontracting	5
	Allow for more / better community contributions	4
	Better continuity across different governments	4
	Establish a State-Owned Enterprise (SoE) to address this	4
	Minimise bureaucracy	4
	Improved coordination between levels of government	3
	Ensure management trained properly	3
	More central government involvement	3
Economic management		56
	Improved / holistic tendering / procurement process	18
	More accurate costings / forecasts	9
	Increased competition / free market	8
	Practice fiscal discipline	5
	Less usage of PPPs	3
General ideas		44
	Address environmental sustainability	7
	Encourage community involvement	5
	Share risks between consultants, clients, and contractors	4
	Limit Māori involvement	3
Regulatory management		25
	Contracts	12
	More penalties for breaches of contract	5
	Improve / standardise contracts	3
	Expand the government procurement guidelines	3

5.2.1.25 (Q34.) Merit to a central government agency procuring and delivering infrastructure projects

319 comments from submissions agreed that there is merit in having a central agency delivering projects including transport (nsc=34), water (nsc=25), and energy (nsc=18, Table 59).

65 submitter comments indicated that there is no merit in having a central agency delivering projects. 15 of these comments expressed concerns with government management of projects

Table 59 Coded responses for 'Q34. Do you see merit in having a central government agency procure and deliver infrastructure projects? If so, which types of projects should it cover?'

Main theme	Sub theme	Frequency
Yes; merit in having central agency delivering projects		319
	Yes; if it utilises skilled people	7
	Types of projects to cover	155
	Transport	34
	Roading	9
	Rail	8
	Active transport	3
	Water	25
	Waste	5
	All projects	22
	Only major projects	10
	Energy	18
	Electricity generation and distribution should be centralised	6
	Large scale / national projects	17
	Health	12
	Hospitals	5
	Education	8
	Procurement	4
	Environmental	3
	Housing	3
	Airport	3
	Comments regarding governance / management	67
	Support for a new Ministry of Works / similar entity	18
	Must be cost-effective	6
	Infrastructure projects should be managed at central level	5
	Efficiency is paramount	5
	Transparency important	4
	Accountability	4
	Do not allow political or financial interference	3
No; no merit in having central agency delivering projects		65
	No; concerns over governmental management	15

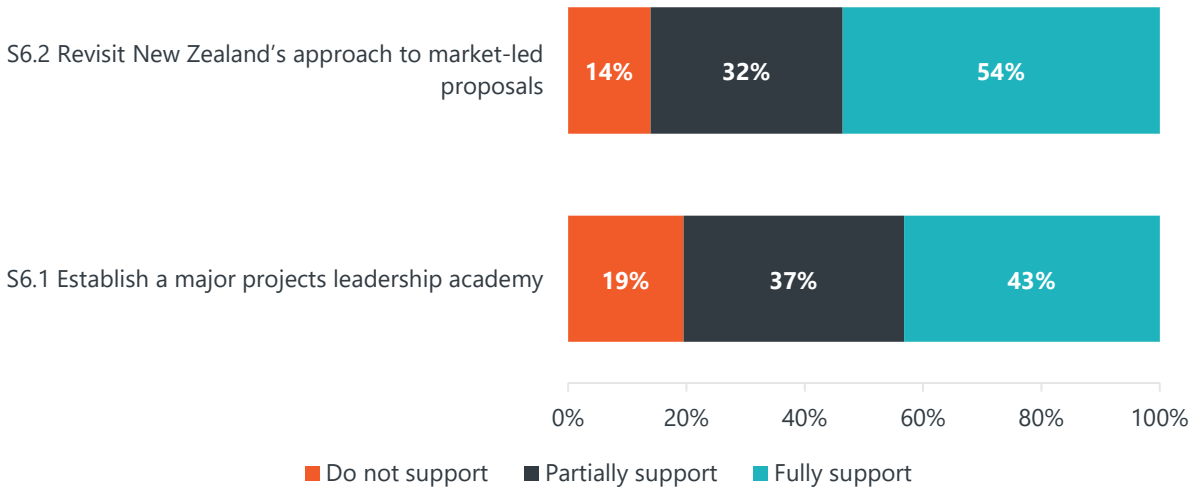
5.2.1.26 Level of support for the proposed options to improve project procurement and delivery

> *"This approach is likely to be determined by the project with some more suited to this. The experience in some aspects of Waka Kotahi have been very positive, but examples of cost overruns like Transmission Gully cannot be overlooked. However, historically where this has been done by infrastructure departments has been variable."*
>
> **Organisation**

Two options to improve project procurement and delivery were proposed. Figure 18 shows the support for each option.

- 54% fully supported revisiting New Zealand's approach to market-led proposals, while 32% partially supported.
- 43% fully supported establishing a major projects leadership academy, while 37% partially supported.

Figure 18: Indicate your support for these proposed options to improve project procurement and delivery; n = from 236 to 237



S7. Reduce costs and improve consenting | Te whakaheke i ngā utu me te whakapai ake i te hātepe tuku whakaae

The cost to build infrastructure in New Zealand is high by international standards and rising rapidly. There is an urgent need to understand New Zealand's cost performance, identify causes of underperformance, and implement changes to improve productivity and reduce costs.

5.2.1.27 (Q35.) Improving the productivity of the construction sector and reducing the cost of delivering infrastructure

Submitters were asked what could be done to improve the productivity of the construction sector and reduce the cost of delivering infrastructure, and the responses have been summarised in Table 60. The most frequent suggestions were:

- Reduce and improve regulations, consent processes, and the bureaucracy that delays projects (nsc=57)
- Address the cost of materials (nsc=53)
- Standardise infrastructure (nsc=20)

> *"There are benefits from a centralised design office so that as a country we do not continue investing in bespoke designs for many investments. There are also long-term gains from excellence in design standards."*
>
> **Organisation**

Table 60 Coded responses for 'Q35. What could be done to improve the productivity of the construction sector and reduce the cost of delivering infrastructure?'

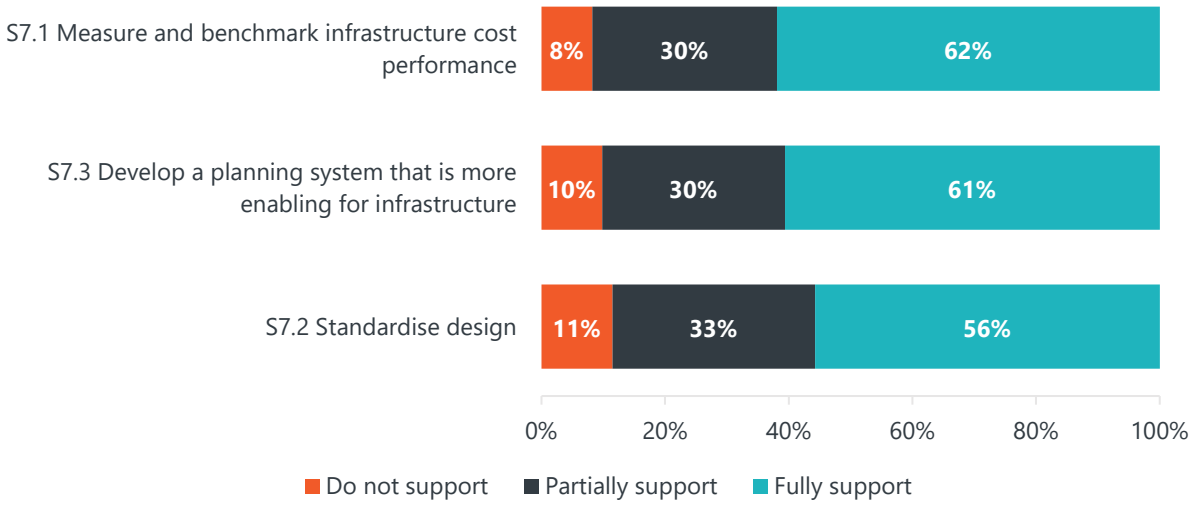
Main theme	Sub theme	Frequency
Governance / Management		162
	Reduce and improve regulation / bureaucracy that delay projects	57
	Amend the RMA	11
	Hire experts	30
	Address skills shortage	16
	Better training and upskilling of upper and middle management	8
	Get skilled workers from overseas	3
	Better planning	30
	Better pipeline	7
	Transparent planning	5
	Need plans to be flexible	4
	Reduce time / capital spent consulting	11
	Central government should manage projects	9
	Reinstate the MoW	4
	Better management	7
	Ensure effective implementation	3
	Accountability	3
Economic		125
	Cost of materials	53
	Increased competition in construction sector	23
	Lower taxation / tariffs on building materials	4
	Explore local alternatives to imported building materials	12
	Reduce costs	12
	Labour force	20
	More options to improve capacity	8
	Extend working hours	4
	Encourage people to develop skills in areas of need	4
	Decrease labour costs / wages	3
	Improved apprenticeship schemes	3
	Contractors	18
	International / competitive tendering / contracting	9
	Improve contractor selection and management	4
	Ensure contractors work to deadline	3
	Increase investment in skills and trades	17
	Government to set pricing	3
General ideas		86
	Standardisation of infrastructure	20
	Use more prefabrication	6
	Use innovative materials / technology	10
	Adopt international best practice	6
	Prioritise / increase safety standards	6
	Ensure environmental considerations where possible	4
	Government owned construction entity	3
	Maintain current infrastructure	3
Consenting process / regulation		40
	Streamline consents process	20
	Try to reduce compliance costs	9
	Reduce costs of consent	6

5.2.1.28 Level of support for the proposed options to reduce costs and improve consenting

Three proposed options to reduce costs and improve consenting were presented. Figure 19 shows the support for each option.

- 62% fully supported measuring and benchmarking infrastructure cost performance, while 30% partially supported.
- 61% fully supported developing a planning system that is more enabling for infrastructure, while 30% partially supported.
- 56% fully supported developing a standardised approach to infrastructure design, while 33% partially supported.

Figure 19: Indicate your support for these proposed options to reduce costs and improve consenting; n = from 244 to 254



S8. Activate infrastructure for economic stimulus | Te whakahohe i te hanganga me te whakaara ake i te ōhanga

In response to the 2008 global financial crisis and the COVID-19 pandemic, countries around the world have looked to use investment in infrastructure to stimulate economies and preserve jobs. Using infrastructure investment effectively in times of economic crisis requires improved investment decision-making and a robust pipeline and list of priority initiatives and projects.

5.2.1.29 (Q36.) Improving the components of the infrastructure system to deliver stimulus spending during the COVID-19 pandemic.

154 submitter comments related to infrastructure generally with 70 responses related to transport infrastructure specifically, mainly developing and improving the road network (nsc=22), the rail network (nsc=19), and infrastructure for active travel (nsc=12, Table 61).

Furthermore, submissions focused on the economic aspects of infrastructure (nsc=43), environmental considerations (nsc=33), governance and management (nsc=29), and community considerations (nsc=23).

Table 61 Coded responses for 'Q36. What components of the infrastructure system could have been improved to deliver effective stimulus spending during the Covid-19 pandemic?'

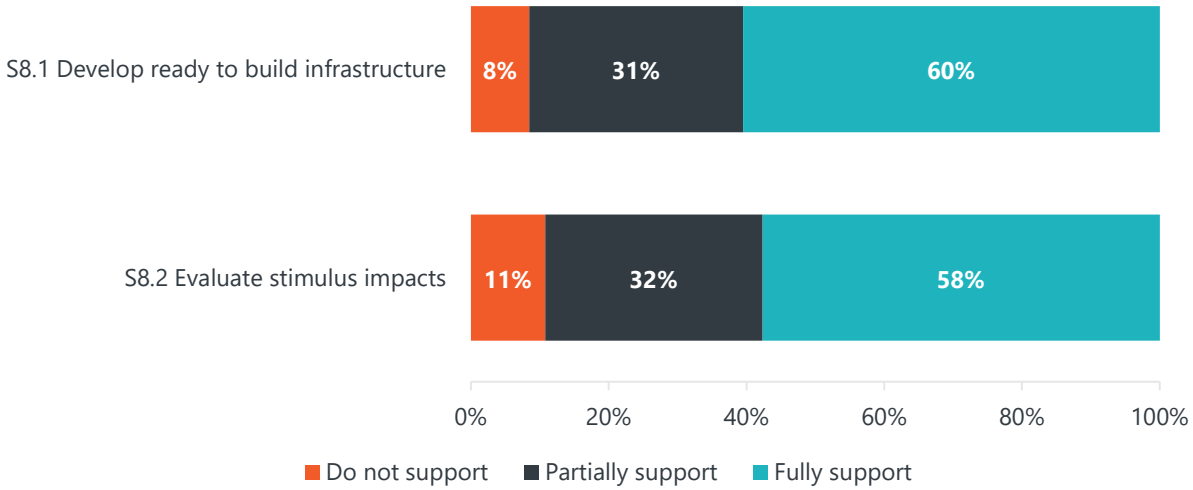
Main theme	Sub theme	Frequency
Infrastructure		154
	Transport infrastructure	70
	Develop / improve road network / safety	22
	Develop / improve rail network / connectivity	19
	Develop / improve infrastructure for active transport	12
	Greater commitment to public transport	9
	Improve port system	4
	Opposed to more roads / motorways	3
	Invest in social infrastructure	22
	Invest in / improve housing	9
	More and improved hospitals and public health support	5
	Pedestrian friendly city centres	3
	Improved infrastructure maintenance	9
	Focus on resilience	9
	Infrastructure development should've continued during lockdown	8
	Invest in digital infrastructure	8
	Approve more small local projects	8
	All infrastructure could have been improved	6
	Investment in water management	5
	Focus on design	3
	Start / focus on critical infrastructure projects	3
Economic		43
	Economy boosting projects	8
	Ensure targeted funding / subsidisation	7
	Conservative spending needed	7
	Strengthen local supply chains	5
	Long term stimulus plans to support infrastructure boom	4
	Allow more businesses to function during lockdowns	4
	Support local government's housing / infrastructure projects	3
Environmental		33
	Prioritise sustainable policies	11
	More research / investment into renewable energy	7
	Environmental protection / restoration	7
	Low-carbon emitting developments	5
General ideas / comments		29
	Be 'shovel ready'	12
	Complete projects that have already been planned	6
	Nothing better could have been done during lockdown	3
Governance / Management		29
	Streamline process from approval to commencement	16
	Improved management / governance / planning	10
Community		23
	Ensure projects can be facilitated by a skilled workforce	7
	Increased investment in education / upskilling workforce	3
	Invest in job creation / security	6
	Incentivise working from home	4

5.2.1.30 Level of support for the proposed options to activate infrastrcuture for economic stimulus

Two proposed options to activate infrastructure for economic stimulus were presented. Figure 20 shows the support for each option.

- 60% fully supported evaluating stimulus impacts, while 31% partially supported.
- 58% fully supported developing ready to build infrastructure, while 32% partially supported.

Figure 20: Indicate your support for these proposed options to activate infrastructure for economic stimulus; n = from 241 to 248



(Other) General comments

128 comments from submissions were about the consultation itself, 80 of these expressed concerns, and 48 expressed appreciation (Table 62). A further 112 comments from submissions expressed concerns and ideas for infrastructure provisions, echoing points made elsewhere. Some of these points included the need for improved management and governance (nsc=107), the need to plan for and address concerns around climate change and sustainable development (nsc=33), and the need for more comprehensive and equitable planning (nsc=22).

> *"We urge Te Waihanga to consider how it might work with other partners to enable integration of arts and infrastructure. Arts and culture have an essential role to play in the wellbeing of New Zealand's diverse communities, and we would welcome a conversation around how we might support the Strategy's implementation."*
>
> **Organisation**

Table 62 Coded responses for 'other comments'

Main theme	Sub theme	Frequency
Comments regarding consultation		128
	Comments about the survey / document / consultation	80
	General concerns with consultation document and survey	43
	Concerns regarding language use and explanations in document	24
	Action preferred over lengthy planning	6
	Desire less emphasis on ethnicity	5
	Appreciation for consultation	48
Concerns with infrastructure provision		112
	Concerns around current infrastructure planning / provision	43
	More comprehensive / equitable plan needed	22
	People centred planning required	4
	Accountability and action required	4
	Develop infrastructure / land at pace with growth	10
	Concerns with current level of service delivery	6
Governance / Management		107
	Parties involved in infrastructure planning and delivery	51
	Good decision making and leadership is necessary	13
	Central government guidance and oversight needed	4
	More meaningful and comprehensive consultation required	13
	Non-partisan approach needed	8
	Promote local solutions	4
	Promote free-market principles / involvement	4
	Collaboration between infrastructure sectors needed	3
	Ideas for infrastructure provision	69
	Transport infrastructure	48
	Improve rail network / connectivity	15
	Public transport needs to be improved	12
	Improve safety / accessibility for active travellers	8
	Decrease emphasis on private car / EV use	7
	Develop / improve road network	3
	Develop energy infrastructure	9
	Infrastructure for disaster mitigation / management / resilience	4
	Focus on digital infrastructure	4
	Aesthetic / functional infrastructure desired	3
	Improved management / governance / planning	56
	Long-term planning needed	10
	Address bureaucracy	9
	Transparency and accountability required	9
	Existing frameworks / policies are not sufficient	6
	Follow international best practice	5
	Better data collection around infrastructure	3
Ideas around climate change and sustainable development		33
	Need to plan for sustainable development	13
	Address water sustainability	7
	Carbon neutral infrastructure / sustainable building materials	6
	City structure / housing / services are not sustainable	3
Ideas around funding infrastructure		12

"Very interesting, thank you for the opportunity to learn and comment."

Individual

6. Appendices

Appendix 1 — PublicVoice online survey interface questions

Below is the list of questions that appeared in the online survey interface. These questions were taken from the consultation document.

Respondent information

First Name:

Last Name:

Email address:

Where are you located?

( ) Northland
( ) Auckland
( ) Waikato
( ) Bay of Plenty
( ) Gisborne
( ) Hawke's Bay
( ) Taranaki
( ) Manawatū-Whanganui
( ) Wellington
( ) Tasman
( ) Nelson
( ) Marlborough
( ) West Coast
( ) Canterbury
( ) Otago
( ) Southland
( ) Other (please specify)

Please specify where you are located:
_____
_____

Are you responding as an individual or as an organisation?

( ) Individual

( ) Organisation

Please state the name of the organisation: _____

Proposed vision for 2050

Q1. What are your views on the proposed 2050 infrastructure vision for New Zealand?

Q2. What are your views on the decision-making principles we've chosen? Are there others that should be included?

Q3. Are there any other infrastructure issues, challenges or opportunities that we should consider?

Action Area One: Building a Better Future

Q4. For the 'Building a Better Future' Action Area and the Needs:

- What do you agree with?
- What do you disagree with?
- Are there any gaps?

Prepare Infrastructure for climate change

Q5. How could we encourage low-carbon transport journeys, such as public transport, walking, cycling, and the use of electric vehicles including electric bikes and micro-mobility devices?

Q6. How else can we use infrastructure to reduce waste to landfill?

Indicate your support for these proposed options to prepare infrastructure for climate change

F1.1 Adapt business case guidelines to ensure full consideration of mitigation and adaptation.

Require all infrastructure projects to directly assess climate change impacts (mitigation and adaptation).

Ensure all infrastructure projects evidence they are compatible with a net-zero carbon emission future to prevent infrastructure with a long asset life locking-in a high-emissions future.

Require all infrastructure projects to apply a consistent cost of carbon that is commensurate with New Zealand's international commitments in cost-benefit analysis and sensitivity analysis.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F1.2 Recognise climate uncertainty in decision-making processes.

Ensure that, whenever possible, decisions open up a wide range of future options and, when it is optimal to do so, keep options open for as long as possible.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F1.3 Require a bright-line (pass/fail) infrastructure resilience test.

Require that, where appropriate, proposals for new major capital works are subject to modelling that indicates, through siting, design, specifications and construction, that the infrastructure will be able to withstand a range of major stresses and shocks, including the future impacts of climate change.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F1.4 Ensure non-built transport solutions are considered first.

To decarbonise existing transport networks, require non-built solutions to be considered first. In the case of existing roading networks, alongside transitioning to electric vehicles, non-built solutions could take the form of:

- Charging to reduce demand.
- Lowering the cost of public transport at non-peak times.
- Real-time parking pricing.
- Making better use of existing space to speed up public transport.
- Density targets and supply requirements through zoning policy.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F1.5 Enable active modes of travel.

Improve the uptake of low-carbon transport options by increasing the density of housing (up-zone) areas within a cycling catchment of all major employment areas.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F1.6 Require local government to consider information from insurance markets to inform climate-risk-related planning policy.

Insurance markets are constantly assessing spatial risks associated with climate change. This pricing information should be an input to planning processes to inform adaptation policies in district plans.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F1.7 Drive a culture of waste minimisation.

Update procurement guidance to require the avoidance of waste creation as a design/procurement objective:

- Require the design of public sector projects to evaluate the use of recycled products where feasible.
- Require that all projects of a certain size develop waste minimisations plan as tender deliverables that are considered as part of the procurement evaluations.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F1.8 Efficient pricing of waste.

Review waste-disposal charges to landfill and investigate different pricing mechanisms with a view to better reflect the true cost of waste disposal to landfill. Include research and community engagement on the roles of different pricing mechanisms, including household and construction waste-disposal fees.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Transition energy infrastructure for a zero-carbon 2050

Q7. What infrastructure issues could be included in the scope of a national energy strategy?

Q8. Is there a role for renewable energy zones in achieving New Zealand's 2050 net-zero carbon emissions target?

Q9. Of the recommendations and suggestions identified in Ministry of Business Innovation and Employment's "accelerating electrification" document, which do you favour for inclusion in the Infrastructure Strategy and why?

Indicate your support for these proposed options to transition energy infrastructure for a zero-carbon 2050

F2.1 Enable electricity distribution networks to minimise barriers to the connection and use of large numbers of local generation, storage and demand response facilities (distributed energy resources or DERs).

Require (and possibly fund) electricity distributors to work with DER providers to develop and implement [by 1 July 2023] standard arrangements for procuring support services from DERs and any other associated requirements.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F2.2 Reduce barriers to building spare transmission capacity where that would reduce inefficient barriers to large-scale renewable generation and the electrification of large process heating units.

Subject to appropriate regulatory oversight, enable and encourage Transpower to temporarily defer charging customers for the costs of spare transmission capacity built specifically to cater for future renewable generation connections (the deferral would end when sufficient new connections have occurred). By making it easier for Transpower to build spare capacity ahead of provable need, generators would find it easier and faster to commit to renewable investments if electricity demand increased at a higher rate than they anticipated. Similar issues arise with respect to building spare grid capacity to cater for future connections (or augmentations of existing connections) for industrial consumers.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F2.3 Investigate the need for a specific regulatory framework for offshore energy generation.

Investigate the future need for an offshore renewable-energy regulatory framework to facilitate an environmentally responsible exploration, construction, operation and decommissioning of offshore wind and other clean-energy technologies and associated infrastructure in our territorial waters.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Adapt to technological and digital change

Q10. What steps could be taken to improve the collection and availability of data on existing infrastructure assets and improve data transparency in the infrastructure sector?

Q11. What are the most important regulatory or legislative barriers to technology adoption for infrastructure providers that need to be addressed?

Q12. How can we achieve greater adoption of building information modelling (BIM) by the building industry?

Indicate your support for these proposed options to adapt to technological and digital change

F3.1 Move towards open data for the infrastructure sector.

Identify clear legislative steps required to move toward full open data for public infrastructure across central and local government.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F3.2 Accelerate common infrastructure metadata standards.

Develop and mandate national infrastructure metadata standards.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F3.3 Accelerate investigations on the use of digital twins and prepare for a nation-wide digital twin.

Develop early use cases of digital twins in public-sector infrastructure.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F3.4 Design and launch artificial intelligence use-cases.

Investigate the opportunities to use artificial intelligence and machine learning across infrastructure sectors. Examples could include:

- In planning, digitising elements of the consenting process.
- In transport, reducing deaths and serious injuries through active collision-avoidance technologies.
- In health, identifying patterns that lead to harm incidents.
- Across sectors, managing real-time infrastructure pricing strategies (such as congestion charging and parking).

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F3.5 Deliver and retain digital information.

Facilitate the consistent use of building information modelling (BIM) by public-sector procurers and central government by developing a common set of standards and protocols in close consultation with industry, including private-sector bodies that undertake similar types of procurement. Support the uptake of these standards by developing detailed implementation advice for agencies on the efficient use of BIM.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Respond to demographic change

Q13. How should communities facing population decline change the way they provide and manage infrastructure services?

Q14. Does New Zealand need a Population Strategy that sets out a preferred population growth path, to reduce demand uncertainty and improve infrastructure planning?

Indicate your support for these proposed options to respond to demographic change

F4.1 Improve analysis of upside and downside risks in infrastructure provision.

Require territorial authorities to test district plans and long-term plans against a 'high' and 'low' growth scenario, in addition to the 'most likely' growth scenario to address uncertainty in demand projections. Document and communicate identified risks to decision-makers and the public.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Partner with Māori: Mahi Ngatāhi

Q15. What steps can be taken to increase collaboration with Māori through the process of planning, designing and delivering infrastructure?

Q16. What steps could be taken to unlock greater infrastructure investment by Māori?

Q17. What actions should be taken to increase the participation and leadership of Māori across the infrastructure system?

Ensure security and resilience of critical infrastructure

Indicate your support for these proposed options to ensure security and resilience of critical infrastructure.

F6.1 Define critical national infrastructure.

Develop a common definition of critical national infrastructure. This needs to be well understood across the sector and enable parties to identify clearly their roles and responsibilities in relation to critical national infrastructure.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

F6.2 Identify critical national infrastructure.

Identify infrastructure assets that meet the definition of critical national infrastructure. The identification process would cover the resilience of infrastructure networks to shocks, as well as individual assets.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Action Area Two: Enabling Competitive Cities and Regions

Q18. For the 'Enabling Competitive Cities and Regions' Action Area and the Needs:

- What do you agree with?
- What do you disagree with?
- Are there any gaps?

Enable a responsive planning system

Indicate your support for these proposed options to enable a responsive planning system

C1.1 Continue to review and reform urban planning.

Accelerate reforms of urban planning policies and practices that are not delivering, including those that have adverse impacts on housing affordability. Suggested actions include:

- Accelerating the implementation of the National Policy Statement on Urban Development (NPS-UD) requirements to upzone around rapid-transit and centre zones.
- Monitoring and enforcing council compliance with NPS-UD requirements.
- Adopting independent hearings panels to review impending district plan changes.
- Requiring that current resource management reforms be appropriately enabling of urban development.
- Clarifying definitions of 'environment' and 'amenity' to ensure that environmental protections are not applied to subjective amenity issues.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C1.2 Standardise planning rulebooks to increase capacity and reduce cost and uncertainty.

Merge regional and district plans into a combined plan, resulting in 14 combined plans rather than roughly 100 council plans.

Prior to developing combined plans, develop the National Planning Standards into a nationally standardised planning rulebook that local authorities are required to adopt with limited variations.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C1.3 Set targets for housing development capacity and triggers for release of additional development capacity.

If the National and Built Environments Act is signed into law, develop a national direction, in the form of the new National Planning Framework, that:

- Sets targets that local authorities must achieve for housing and business development capacity to accommodate future growth, and that take precedence over subjective amenity barriers.
- Directs local authorities to use information on land prices to guide the planning and release of development capacity in high-demand areas.
- Carries over existing NPS-UD direction on enabling intensification and disallowing the use of minimum parking requirements in district plans.
- Incorporates additional direction on enabling intensification and private plan changes in addition to what is already in the NPS-UD.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C1.4 Review and realign Crown landholdings.

Review major public landholdings to identify opportunities for land swaps, releases of land for development and relocations of major public facilities to more optimal locations. This includes reviewing the locations of major legacy facilities, particularly when they occupy large sites in growing urban areas with high land prices.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Co-ordinate delivery of housing and infrastructure

Indicate your support for these proposed options to co-ordinate delivery of housing and infrastructure

C2.1 Ensure the provision of three waters infrastructure to enable growth.

Ensure the current three waters reform programme proactively enables urban development by:

- Establishing an economic regulator for the sector with a mandate to ensure the availability of infrastructure for growth, funded by appropriate infrastructure growth charges or other 'user pays' funding tools.
- Enabling regulators to allow new water entities to use their balance sheet capacity to finance infrastructure for growth, as well as funding asset renewals and improvements to water quality.
- Clarifying the interface between new water entities and developer-financed water infrastructure provided under the Infrastructure Funding and Financing Act 2020.
- Ensuring that developers can benefit appropriately from the provision of infrastructure that has spare capacity.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C2.2 Volumetric charging to fund proportion of water infrastructure.

Enable publicly-owned water providers to charge water users directly for their services and enable volumetric wastewater charges for large wastewater sources.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C2.3 Improve information on infrastructure capacity and costs to service growth.

Improve information for land-use planners, infrastructure planners, and the development sector so that they can understand the locations and timing of growth opportunities and the cost of growth in different places. Includes two key pieces of information:

- Water entities to publish geo-spatial information on water asset condition, capacity for growth in existing water networks, and increases in capacity for growth due to planned network upgrades. As part of this, a common approach to measuring the condition and capacity of water infrastructure assets should be developed.
- Develop, validate and publish a spatial model of long-run average infrastructure costs to service growth in different locations, to inform issues like regional spatial planning, local-government development contributions policy, and the alignment of development capacity increases with infrastructure capacity and low-cost opportunities for development.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C2.4 Conduct post-implementation reviews of transit-oriented development opportunities.

Many existing urban strategies highlight the importance of transit-oriented development (TOD). To understand whether strategies are translating into on-the-ground implementation, undertake a post-implementation review of recent TOD opportunities in New Zealand cities. This review would cover the performance of developments against international best practice, the scale and pace of housing and commercial developments, relative to planning projections, transport outcomes for people living or working in the areas, broader wellbeing outcomes and barriers to achieving better outcomes, and provide recommendations for policy and delivery changes to improve outcomes for future TODs.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C2.5 Implement regional spatial planning.

Develop a new Strategic Planning Act that provides a framework for regional spatial plans and directs local authorities and infrastructure providers to develop them.

Require that combined plans and regional and local funding plans should not be inconsistent with regional spatial plans.

Consider central government funding and resourcing to support regional spatial plan development.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C2.6 Increase the use of water-sensitive urban design measures to reduce pressure on water networks.

Develop combined district and regional plans to enable and incentivise water sensitive urban design to reduce the pressure that growth places on stormwater and other networks.

Review other barriers to water-sensitive urban design practices, such as poor coordination between water infrastructure providers, land-use planners, and developers.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Improve access to employment

Q19. What cities or other areas might be appropriate for some form of congestion pricing and/or road tolling?

Q20. What is the best way to address potential equity impacts arising from congestion pricing?

Indicate your support for these proposed options to improve access to employment

C3.1 Implement congestion pricing and/or road tolling to improve urban accessibility.

Use congestion pricing and road tolling to improve urban transport outcomes and the performance of the transport network. Specific measures include:

- Progressing the implementation of The Congestion Question's recommended congestion pricing scheme for Auckland. If the availability of transport alternatives is a concern, stage the implementation to focus initially on areas with the best supply of public transport and walking and cycling options (e.g. Auckland city centre), and confirm a timeframe for full implementation following the delivery of further public transport and cycling improvements.
- Immediately remove legislative barriers to implementing congestion pricing and/or highway tolling.
- Progress the implementation of a congestion pricing scheme for Wellington following the Let's Get Wellington Moving programme business case.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C3.2 Use congestion pricing to plan for new transport infrastructure.

To make it easier for people to respond to signals from congestion pricing:

- Improve the quality, speed, and reliability of public transport to major employment centres.
- Improve active transport infrastructure, starting with low-cost solutions such as improving pedestrian crossings and reallocating existing roadspace to provide safe cycling facilities.

Use signals from congestion pricing to help optimise the timing and delivery of new multi-modal transport infrastructure.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C3.3 Plan for congestion pricing schemes in other New Zealand cities.

Identify and prioritise other urban areas where congestion pricing may be beneficial at some point on a 30-year horizon, and develop a work programme for developing appropriate schemes for those areas.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Plan for lead infrastructure

Q21. Is a 10-year lapse period for infrastructure corridor designations long enough? Is there a case for extending it to 30 years consistent with spatial planning?

Q22. Should a multi-modal corridor protection fund be established? If so, what should the fund cover?

Indicate your support for these proposed options to plan for lead infrastructure

C4.1 Develop a lead infrastructure policy, supporting implementation guidance, and a corridor protection evaluation methodology.

Develop a lead infrastructure policy that provides a clear definition of lead infrastructure and uses the definition to identify what is and is not lead infrastructure. Support this policy by implementing guidance for infrastructure providers.

To support corridor protection decisions, develop evaluation guidance on the use of real option valuation techniques to make decisions about corridor protection in light of the uncertainty of future demands. Use this guidance as a key input to an economic analysis of concept plans for corridor designations and investment through a new Corridor Reservation Fund.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C4.2 Enable lead infrastructure corridor protection through resource management reform.

Extend the duration of designations to 10 years and allow designations to be granted based on concept plans.

Base statutory tests for infrastructure corridor designation on a corridor protection evaluation methodology.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C4.3 Establish a corridor reservation fund to protect lead infrastructure corridors.

Establish a corridor reservation fund with a secure funding source that can be used for early corridor-protection activities, such as purchasing key sites for future projects.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Improve regional and international connections

Q23. What infrastructure actions are required to achieve universal access to digital services?

Indicate your support for these proposed options to improve regional and international connections

C5.1 Develop a long-term national supply chain strategy.

Develop an evidence-based, long-term national freight supply chain strategy covering airports, ports, road, rail and coastal shipping to support the creation of a fully integrated, multi-modal freight supply chain system. The strategy could look at competition between modes, ownership structures, regulatory regimes and the infrastructure investment required to improve the efficiency and sustainability of New Zealand's supply chains.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

C5.2 Update the 2006 digital strategy.

The 2006 digital strategy should be updated to prepare New Zealand for realising the full benefits of a connected digital society.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

_____

Action Area Three: Creating a Better System

Q24. For the 'Creating a Better System' Action Area and the Needs:

- What do you agree with?
- What do you disagree with?
- Are there any gaps?

_____

Integrate infrastructure institutions

Q25. Does New Zealand have the right institutional settings for the provision of infrastructure?

Q26. How can local and central government better coordinate themselves to manage, plan and implement infrastructure?

Q27. What principles could be used to guide how infrastructure providers are structured, governed and regulated?

Indicate your support for these proposed options to integrate infrastructure institutions

S1.1 Clarify funding of spatial plans.

Regions will be required to produce regional spatial plans that outline how and where they will grow. It is currently unclear how the development and implementation of these plans will be funded. Funding arrangements to both design and implement regional spatial plans should be clarified as part of the Resource Management Act reform process.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S1.2 Review roles and functions of local government and other related infrastructure providers.

As part of the Review into the Future for Local Government, review local government functions related to infrastructure and the relationship with central government, including funding, planning and delivery. The review of local government infrastructure functions should address:

- The role and function of local government following the three waters reform and reform of the Resource Management Act.
- Institutional settings and structures for other related infrastructure providers, e.g. in land transport.
- The appropriateness of existing local government boundaries given expanding labour markets, particularly in fast-growing cities.
- The ability of local government to provide, fund, maintain and operate both social and economic infrastructure.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Ensure equitable funding and financing

Q28. What steps could local and central government take to make better use of existing funding and financing tools to enable the delivery of infrastructure?

Q29. Are existing infrastructure funding and financing arrangements suitable for responding to infrastructure provision challenges? If not, what options could be considered?

Q30. Should local authorities be required to fund depreciation as part of maintaining balanced budgets on a forecast basis?

Indicate your support for these proposed options to ensure equitable funding and financing

S2.1 Fund tourism infrastructure.

Enable the International Visitor Conservation and Tourism Levy to be used for tourism infrastructure, especially networked infrastructure. The levy was established in 2019. It was forecast to provide $450 million in the first five years of operation. The levy could be made available to certain local authorities (for instance, those with high international visitor to resident ratios), if they can demonstrate they have explored all other means to finance infrastructure pressures caused by tourism.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S2.2 Rating Crown land.

Require the Crown to pay rates to local authorities for land that it owns that is currently exempt, where it generates a demand for infrastructure. This includes Defence Force land, schools and hospitals. Currently, Crown land is mostly exempt from general rates. This is a potentially significant source of 'lost' income for local authorities with significant proportions of Crown land in their areas.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S2.3 Develop a transition plan for transport funding.

Develop a pathway and transition plan for shifting all vehicles onto time, distance, and level-of-service-based pricing, improving transport pricing and the required governance arrangements needed to support this. Include a consideration of the merit of differential pricing for commercial and non-commercial traffic. This recommendation would need to be considered alongside recommendation C3.1, which relates to congestion pricing for urban areas.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S2.4 Use value-capture mechanisms to fund infrastructure for growth.

Incentivise local authorities to make greater use of targeted rates or value-capture mechanisms to fund growth infrastructure.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S2.5 Enable land-value change as a basis for a targeted rate.

Implement a legislative change to allow local authorities to be given the option of using land-value change as a basis for a targeted rate.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Make better use of existing infrastructure

Q31. What options are there to better manage and utilise existing infrastructure assets?

Q32. Are there benefits in centralising central government asset management functions? If so, which areas and organisations should this apply to?

Indicate your support for these proposed options to make better use of existing infrastructure

S3.1 Consider non-built options.

Require project selection to take explicit and detailed account of available alternatives, including the enhanced use of existing infrastructure, extending the life of existing assets, pricing solutions, project staging and cheaper build options.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S3.2 Investigate New Zealand Government Asset Management Team.

Investigate the establishment of a New Zealand Government Asset Management Team to take asset-management responsibilities from government agencies that have no specific asset-management focus or have a poor track record of asset-management.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S3.3 Improve pricing to optimise use of existing infrastructure.

Implement changes to infrastructure pricing to optimise the use of existing infrastructure and potentially defer major upgrades. Specific areas where this is likely to be desirable are:

- Water infrastructure, (which is addressed further in recommendation C2.2).
- Transport infrastructure (which is addressed in recommendations S2.3 and C3.1).
- Landfill waste levies (which are addressed in recommendation F1.8).

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Require informed and transparent decision making

Indicate your support for these proposed options to require informed and transparent decision-making

S4.1 Undertake a post-implementation review of all major infrastructure projects.

Conduct and fund independent post-implementation reviews of major infrastructure projects at completion, with the purpose of improving future evaluation methods and processes. Publish ex-post reviews in full and measure performance, benefits and cost estimates against business case estimates.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S4.2 Undertake cost benefit analyses of all projects over $150 million.

Ensure a commitment by all local and central government agencies to undertake and publicly release rigorous CBAs on all public infrastructure investment proposals where the whole-of-life costs of the proposals exceed $150 million.

In general, analyses should be done prior to projects being announced. If a project is announced before analysis is done, for example, in the lead-up to an election, this would be conditional on the findings of a subsequent analysis.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S4.3 Review the discount rate.

Undertake an inquiry into the appropriateness and consistent application of New Zealand's social discount rate policy.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S4.4 Develop a cost benefit analysis manual for new water infrastructure.

The economic regulator for the water sector should develop a CBA manual that makes transparent the evaluation methods and parameters for valuing relevant economic, environmental and amenity benefits. The manual should enable appropriately-scaled appraisals of both simple and complex projects. In line with practices in the electricity transmission sector, it should be used as part of the investment test for new and improved water infrastructure to ensure that it delivers benefits that exceed its cost.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Develop and prioritise a pipeline of work

Indicate your support for these proposed options to develop and prioritise a pipeline of work

S5.1 Develop a priority list of projects and initiatives.

Develop a priority list of projects and initiatives that is consistent with the Aotearoa New Zealand Infrastructure Strategy.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S5.2 Improve the use of the pipeline for commercial decision-making.

Evolve the pipeline of forward work intentions so that it is more useful in supporting the market to make commercial decisions (i.e. assessing capacity, funding and timing) and enabling better use of infrastructure spending for fiscal stimulus in economic downturns.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S5.3 Measure sector utilisation.

Develop measures of current and projected future infrastructure delivery capacity and projected utilisation.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S6. Improve project procurement and delivery

Q33. What could be done to improve the procurement and delivery of infrastructure projects?

Q34. Do you see merit in having a central government agency procure and deliver infrastructure projects? If so, which types of projects should it cover?

Indicate your support for these proposed options to improve project procurement and delivery

S6.1 Establish a major projects leadership academy.

Establish a major project leadership academy in New Zealand to raise the planning, delivery, financial and leadership capabilities for major projects in both government and industry. Develop this initiative with the Construction Sector Accord and international experts. Attendance should be a mandatory requirement for directors of major infrastructure projects within 10 years.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S6.2 Revisit New Zealand's approach to market-led proposals.

Encourage the submission of unsolicited and market-led proposals by developing a standardised and centralised approach that gives the market confidence that proposals will progress where they provide tangible benefits that no-one else can deliver, and that a government-led competitive process may not produce better results.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Reduce costs and improve consenting

Q35. What could be done to improve the productivity of the construction sector and reduce the cost of delivering infrastructure?

Indicate your support for these proposed options to reduce costs and improve consenting

S7.1 Measure and benchmark infrastructure cost performance.

Undertake investigations into the cost performance of New Zealand's infrastructure sector that:

- Covers multiple horizontal infrastructure sectors to enable the identification of common issues and points of difference.
- Identify recent cost trends and drivers of cost trends within infrastructure sectors.
- Benchmarks New Zealand's cost performance against better-performing OECD countries and identify drivers of differences.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S7.2 Standardise design.

Develop a standardised approach to infrastructure design that:

- Prioritises high productivity.
- Allows for a division of labour, offsite construction/modularisation and repeatability and therefore quality improvements and reduces the risk of systematic failure.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S7.3 Develop a planning system that is more enabling for infrastructure.

- Require the proposed Natural and Built Environment Act (NBEA) to recognise that the natural and built environments are different. Therefore, different environmental management rules should apply to each.
- Require resource consent decisions to take into account the length of time in which an activity will affect the environment, rather than assume the effects are in perpetuity.
- Ensure consenting pathways for infrastructure through the National Planning Framework, potentially through setting standards for planning policies and regulations for infrastructure.
- Limit the scope of effects considered under the proposed Natural and Built Environment Acts to matters related to natural and physical resources, not extraneous matters like commercial and amenity matters.
- To support national direction, establish a national GIS database for mapping nationally important resources (built and natural), including corridors and assets of nationally significant infrastructure.
- Ensure that regional spatial strategies can respond rapidly to changing national and regional priorities.
- Require a pre-notification audit of proposed regional unitary plans to ensure consistency with national direction.
- Allows infrastructure consents to be bundled with complementary plan changes in surrounding areas.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

Activate infrastructure for economic stimulus

Q36. What components of the infrastructure system could have been improved to deliver effective stimulus spending during the Covid-19 pandemic?

Indicate your support for these proposed options to activate infrastructure for economic stimulus

S8.1 Develop ready to build infrastructure.

Develop a well-serviced and credible infrastructure priority pipeline to reduce infrastructure lead times, so that quickly assembled infrastructure programmes are built before a recession is over.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

S8.2 Evaluate stimulus impacts.

When developing infrastructure programmes for economic stimulus, require that infrastructure projects be assessed and prioritised according to their impacts on employment, as well as standard cost benefit analyses (CBAs). Ideally, the positive economic impacts of increased employment will be captured in CBAs.

Do not support ( ), Partially support ( ), Fully support ( ), Don't know ( )

General comments and supporting documents

Comments

Upload any supporting documents.

You can upload any of the following file types: png, gif, jpg, jpeg, doc, xls, docx, xlsx, pdf, txt. A maximum of 10 files can be uploaded. The maximum file size per file is 10 megabytes (MB).

Thank You!

Appendix 2 — Organisations that submitted

- Active Transport Trust
- Aggregate and Quarry Association
- AJ Underground Utility Safety Solutions
- Angus Robertson Mechanical
- Aotearoa Food Rescue Alliance
- Ara Poutama Aotearoa, Department of Corrections
- Ashburton District Council
- Association of consulting and engineering
- Auckland Business Forum
- Auckland Council
- AUT
- Bay of Plenty Regional Council
- Bell Adapt Ltd
- BlueFloat Energy
- Business leaders' Health and Safety Forum
- Business NZ
- Canterbury Mayoral Forum
- Chorus
- Christchurch City Council
- Christchurch International Airport
- Citycare Property
- Civil Contractors New Zealand
- Climate Change Commission
- Climate Karanga Marlborough
- Coal Action Network Aotearoa (CANA)
- Commercial & Industrial Consultants Ltd
- Committee of Digital Engineering in New Zealand (CoDENZ) and the Digital Asset Owners Forum (DAOF)
- Community Energy Network
- Concrete New Zealand Incorporated
- Connexis
- Construction Health and Safety New Zealand Trust (CHASNZ)
- Corporate Taxpayers Group
- Creative New Zealand
- Culham Engineering Co. Ltd
- Cycling Action Network
- Defence Estate and Infrastructure
- Downer NZ
- Early Adaptors Limited - Te Rawe Wawe & M&M Partnership
- Earthquake Commission (EQC)
- EFFX OPERATIONS LIMITED
- Electricity Authority
- Electricity Networks Association
- Energy Efficiency and Conservation Authority
- Energy Estate
- Energy Resources Aotearoa
- Engineering New Zealand
- Environment Canterbury
- Environmental Communications Ltd
- EROAD Ltd
- Federated Farmers New Zealand
- Federation of Ratepayers Association
- Finesse Residential
- Firstgas Group
- FlightPlan2050
- Fonterra Co-operative Group Limited
- Generation Zero
- GHD
- Gisborne District Council - Staff
- Greater Christchurch Partnership
- Greater Wellington Regional Council
- Green Energy & Water
- Grey Power Federation
- Guardians of the Bays
- Hamilton City Council
- Ide 2016 limited
- Independent Electricity Generators Association
- Infrastructure New Zealand
- Infrastructure Sustainability Council of Australia
- Institute of Public Works Engineering Australasia New Zealand Division Inc
- Inter Asia Pacific Limited
- Kāinga Ora
- Kapiti Climate Change Action Group
- KiwiRail
- Living Streets Aotearoa
- Local Government New Zealand
- Lyttelton Port Company
- Major Electricity Users' Group
- Manawatu District Council
- Marsden Maritime Holdings
- Massey University
- MBIE - Construction Sector Accord
- Mercury NZ Limited
- Meridian
- Metals New Zealand
- Ministry for the Environment
- Ministry of Transport
- Motor Trade Association (MTA)
- Mott MacDonald
- MOVEMENT
- MRCagney
- Nelson City Council

- New Zealand Association for Impact Assessment
- New Zealand Automobile Association Incorporated
- New Zealand Construction Industry Council
- New Zealand Green Building Council
- New Zealand Lifelines (Utilities) Council
- New Zealand Port Company CEO Group
- New Zealand Public Service Association
- New Zealand Rail Party
- New Zealand Recreation Association
- New Zealand Society for Earthquake Engineering
- New Zealand Superannuation Fund
- New Zealand Telecommunications Forum
- Ngati kaahu a tamapahore Trust
- Ngāti Whātua Ōrākei, Whai Maia
- Northport Ltd
- Northpower Ltd
- Novoconsult Ltd
- NZ Airports
- NZ Food Waste Champions 12.3
- NZWEA
- Oceanex Energy Pty Ltd
- Office for Seniors
- OMV NZ Limited
- Orion New Zealand Ltd
- Otago Polytechnic
- Otakaro Limited
- Palmerston North City Council
- Parliamentary Commissioner for the Environment
- Penlink Now
- Positive Money New Zealand Inc
- Powerco
- Property Council New Zealand
- Queenstown Lakes District Council
- RESOLVE GROUP
- Road Transport Forum New Zealand Inc
- Ruapehu District Council
- SCNZ
- Social Credit
- South Taranaki District Council
- Spacecraft Architects
- SparkNZ
- Sport NZ
- Stats NZ
- Straterra Inc
- Sustainability Trust
- Sustainable Ōtautahi Christchurch
- Sustainable Solutions (NZ) Ltd
- Taituara
- Taranaki Regional Council
- Tasman District Council
- Te Tūāpapa Kura Kāinga – Ministry of Housing and Urban Development
- The Fletcher Construction Company Ltd
- The Sustainability Society
- The Sustainable North Trust t/a Hibiscus Coast Zero Waste
- Top Energy Ltd
- Transport Australia
- Transport Group of Nelson Tasman Climate Forum
- Transport Special Interest Group
- Transpower New Zealand
- Trustpower Limited
- UNICEF Aotearoa New Zealand
- Universities New Zealand
- Universities of Auckland and Canterbury (NZ Infrastructure and Communities Institute Advisory Group)
- University of Auckland
- University of Otago
- Venture Taranaki
- Vodafone New Zealand Limited
- Waikato District Council
- Waikato Regional Council
- Waitaki District Council
- Walking Access Commission Ara Hīkoi Aotearoa
- Waste Management Industry Forum
- Wastebusters
- WasteMINZ
- WasteMINZ' TAO Forum
- Water New Zealand
- Webbline Ag
- Wellington City Council
- Wellington Residents' Coalition
- Wellington Water Limited
- Western Bay of Plenty District Council
- Wind Quarry Zealandia Limited
- Wise Response Society
- Women's Infrastructure Network (WIN) Advisory Board
- WSP
- Xtreme Zero Waste LLC
- Zero Carbon Nelson Tasman; Science Technology and Research Group of the Nelson Tasman Climate Forum;
- Zero Waste Network Aotearoa

Produced by PublicVoice Limited

Suite 2, 5 Bouverie Street

Petone

Lower Hutt, 5012

Ph: (04) 909 7463

Email: info@publicvoice.co.nz