

# He Tūāpapa ki te ora

## 1. Auto submit landing

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03-07-2021 01:39 AM

## 3. Respondent information

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### Respondent information

**First Name**

██████

**Last Name**

██████

**Email address**

████████████████████

**Where are you located?**

Manawatū-Whanganui

**Please specify where you are located**

**Are you responding as an individual or as an organisation?**

Organisation

**Please state the name of the organisation**

Early Adaptors Limited - Te Rawe Wawe & M&M Partnership

## 4. Proposed vision for 2050

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

"Kotahitanga Estate and Greener Places 2050" is a major challenge in establishing Green Infrastructure for - Residents, Workers, Businesses, Investors & Developers, The Environment and the State; So the integrated infrastructure management framework is a step toward a Better Future.

But there are several challenges in the current system, such as Fragmented planning, Funding infrastructure and infrastructure costs of a zero-carbon 2050, inconsistent application of investment planning and business, lack of transparency in investment decisions and experience in delivering infrastructure projects, costs of building infrastructure in New Zealand.

New Infrastructure is expensive and we cannot afford to build everything. Government (Local & Central) can not pay for all infrastructure, trade-offs and prioritisation are necessary.

To create a better Green infrastructure system we must analyse and consider current system deficiencies, global best practice, collaboration with Maori through better relationships with Maori (Indigenous peoples) and future needs. Although institutional investors are being invited to participate in infrastructure financing, it is likely that additional private finance will only come in fits and starts., so it will be slow and sporadic.

There is time for most mega-infrastructure plans and projects to be reoriented toward environmental and human rights requirements and the objectives of inclusivity, resilience and sustainable development, provided that the political will of the policy-makers, infrastructure decision-makers, and private sector to counter the potential negative effects of infrastructure investment and finance.

International Carbon Charge, Future Generations Fund and Dividend as a first step to a Just Transition - a significant change in approach to the world's resources through innovative international charges could not only eradicate poverty and contribute to achieving the Sustainable Development Goals (Just Transition Plan Impact, directly on all 17 of the SDGs), but could also price the world's resources fairly (our shared inheritance) thereby significantly reducing the extraction of carbon, and in turn preserving all our planet's resources for the benefit of future generations (Oranga tangata or the welling of people).

SDG 9: Industry, Innovation, and Infrastructure - The global sovereign wealth fund will provide massive new investment in infrastructure and in the green industries and innovation required for a Just Transition.

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

Circular business requirements - Procurement, Embodied carbon and whole-life carbon, Disassembly and adaptability.

Circular Business model definition - A circular business model articulates the logic of how an organisation creates, delivers, and captures values to its broader range of stakeholders while minimizing ecological and social costs.

The United Nations Declaration on the Rights of Indigenous Peoples and the Treaty of Waitangi - the Declaration acknowledges the distinctive and important status of Indigenous Peoples, their common historical experiences and their universal spirit that underpins its text. The Declaration is an affirmation of accepted international human rights and also expresses new and non-binding, aspirations.

The Treaty of Waitangi is the foundation document of New Zealand and marks the beginning of our rich cultural heritage. It holds great importance in our law, constitutional arrangements, and the work of successive governments. The recognition of indigenous peoples' collective right to self-determination in the Declaration is a foundational right, without which other political, civil, economic, social and cultural rights are meaningless. Maori hold distinct and special status as the indigenous people or Tangata whenua of New Zealand/Aotearoa.

This approach respects the important relationship that Maori as Tangata whenua have with their lands and resources both currently and historically and the complementary principles of rangatiratanga and kaitiakitanga that underpin that relationship. It also maintains, and will continue to maintain, the existing legal regimes for the ownership and management of land and natural resources.

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

Manufacturing and Supply chain - Value Creation model; With our modest scale and distance from large markets, the natural strategy is deep niche. Other business models are also suitable. It is unlikely that our businesses will operate across the complete value chain, so it is essential that we understand where it is that we can add the most value and where we can apply maximum leverage.

This thinking leads to a business model of collaboration and co-creation; one in which we become strategic partners with other manufacturers and suppliers and ultimately with our customers.

Using cluster of Value Creation concepts that they leverage to create unique and high-value product, service and experience offerings.

Successful enterprise activity requires both creation and operational execution. Creative execution should be both strategic to the enterprise and connected to the needs of customers to ensure that value is created.

The Value Creation concepts can be used by all types of business and at all stages of development. The Public Private Partnership infrastructure challenge is growing and so can our Value Creation.

## **5. Action Area One: Building a Better Future**

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#### **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?**

1. Infrastructure finance is a shared responsibility of public and private actors. Private finance is not a panacea for the infrastructure financing gap, and public finance will always play a significant role in infrastructure. Private finance does not relieve the public authorities of their public governance responsibilities or regulatory obligations under international human rights and environmental law, in parallel with private actors' own responsibilities.

2. The Other Infrastructure Gap: Sustainability, Human Rights, and Environmental Perspectives - Public authorities must ensure good public governance of infrastructure finance. This responsibility includes, but is not limited to, responsible borrowing and provision of guarantees (for debt sustainability), integrity in procurement, ensuring public participation in decision-making and full, proactive transparency and disclosure (including disclosure of contingent liabilities, advocating financial disclosure laws, and establishing information disclosure platforms in order to enhance transparency and traceability in infrastructure financing, including transparency of beneficial ownership of infrastructure assets and PPPs), as well as ensuring the regulation and oversight of private parties.

3. Insurance companies typically have some degree of affinity for ESG issues, including human rights, and generally have adequate capacity to undertake the type of due diligence recommended by the OECD. While pension funds and SWFs are less advanced in the latter respects, both have potential for deeper engagement.

4. The Other Infrastructure Gap: Sustainability Human Rights and Environmental Perspectives on environmental and human rights issues due to the beneficiaries they serve (in the case of pension funds) or their explicit mandate to help develop local economies and infrastructure investment and take environmental and human rights issues into account (in the case of some SWFs). The public nature of public pension funds and SWFs bolsters the case for their strengthened stewardship and public responsibilities in infrastructure investment. Until such time as we see a fundamental shift in this regard, regulatory reforms designed to relax the constraints of pension funds and insurance companies to invest in infrastructure should only proceed after a regulatory impact assessment that fully integrates the respective country's obligations under international human rights and environmental law, and following appropriate mitigation measures.

Finally, all financial actors should be encouraged to apply financial engineering techniques to stimulate innovation in new business models and new financial products that are consistent with, and will help realize, human rights and the SDGs. After all, financial engineering made forest bonds, vaccination bonds and social impact bonds possible. There is a renewed interest in impact investing to help financing actors help achieve SDGs. These trends may stimulate the development of alternatives to the PPP business model, focusing on environmental and human rights outcomes rather than outputs, and promoting the more equitable distribution of costs and benefits between public and private parties against negative impacts.

## **6. Prepare Infrastructure for climate change**

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#### **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?**

Quantum Fiziks - Demand Battery Recharging system for the Electric vehicle recharge market. The technology is capable of providing demand recharging energy to electric vehicles to enable recharging without the requirement to connect to any recharging portal or other. Charge will simply supply demand recharging as required to enable continued use without delay. Demand energy now removes the inconvenience from the daily commuting requirements and will enable industries like Light Duty Electric Vehicles Vans and Heavy Duty Trucks to gain more on road confidence in the fight for climate change and more reliable transport.

This Green Infrastructure will reduce emissions and encourage low-carbon transport through a Public Private Partnership model as part of the circular economy.

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

Hydrogen can be produced economically and as an environmentally clean methods.

This Green Infrastructure will reduce waste to landfill and can be effective through a Public Private Partnership model as part of the circular economy.

Hydrogen Recovery from municipal waste. H2 Solutions uses a European Thermochemical Treatment Electric Pyrolysis process to re-purposes organic carbon-based waste into energy products such as bio-fuels, syngas and bio-coal or carbon chars.

Pyrolysis is therefore well aligned with environmental guidelines drawn by the ISO 14040 and 14044 standards to promote sustainable environmental solutions for waste management.

H2 Solutions provides a complete integrated "End to End" pyrolysis solutions to repurpose organic waste into bio-fuels, syngas, energy and bio-coal, Green Hydrogen production and refueling systems.

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

	Do not support	Partially support	Fully support	Don't know
<p><b>F1.1 Adapt business case guidelines to ensure full consideration of mitigation and adaptation.</b></p> <p>Require all infrastructure projects to directly assess climate change impacts (mitigation and adaptation).</p> <p>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.</p> <p>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.</p>		X		
<p><b>F1.2 Recognise climate uncertainty in decision-making processes.</b></p> <p>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.</p>		X		
<p><b>F1.3 Require a bright-line (pass/fail) infrastructure resilience test.</b></p> <p>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.</p>		X		
<p><b>F1.4 Ensure non-built transport solutions are considered first.</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>Charging to reduce demand.</li> <li>Lowering the cost of public transport at non-peak times.</li> <li>Real-time parking pricing.</li> <li>Making better use of existing space to speed up public transport.</li> <li>Density targets and supply requirements through zoning policy.</li> </ul>			X	
<p><b>F1.5 Enable active modes of travel.</b></p> <p>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.</p>			X	
<p><b>F1.6 Require local government to consider information from insurance markets to inform climate-risk-related planning policy.</b></p> <p>Insurance markets are constantly assessing spatial risks associated with climate change. This pricing information should be an input to planning</p>			X	

climate change. This pricing information should be an input to planning processes to inform adaptation policies in district plans.				
<b>F1.7 Drive a culture of waste minimisation.</b>  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.			X	
<b>F1.8 Efficient pricing of waste.</b>  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.		X		

## 7. Transition energy infrastructure for a zero-carbon 2050

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

The electricity system is made up of a number of key parties that work to supply the more than two million electricity connections in New Zealand. The electricity system is covered by a series of regulations. These include regulations designed to ensure security of supply, encourage renewable generation, and to keep electricity assets safe.

Relevant regulations are sometimes directly targeted towards the electricity industry (Electricity Industry Participation Code 2010).

Other regulations with a broader focus also influence how the electricity system operates. The Resource Management Act 1991 (RMA) plays a major role in determining the type of electricity generation that gets consented. There is also the New Zealand Electricity Trading Scheme.

Under the RMA, National Policy Statements are a mechanism for the Government to give local government direction about matters of national significance when making local planning decisions.

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

There are currently five National Policy Statements including one on renewable electricity generation (the National Policy Statement for Renewable Electricity Generation) NPS-REG and one on freshwater management (the National Policy Statement for Freshwater Management - NPS-FM). Hydro Generation, there is an unresolved conflict between NPS-REG and NPS-FM.

The NPS-FM recognises that the continued viability of some hydro-schemes (and other infrastructure) may conflict with achieving the main objectives of the NPS-FM. Hydro Generation is one of the national values to be considered when setting limits on water use. This particular policy uncertainty is untenable and needs resolving, this lack of national direction.

**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?**

Local authorities are required to set objectives and limits for all catchments by 2025 in planning documents. Also Te Mana o Te Wai, describes the integrated and holistic wellbeing of the water and freshwater management. The NPS-FM contains an appendix where existing nationally important infrastructure can be listed, allowing decision-makers to trade-off national values.

Ongoing policy uncertainty regarding the relative priority of nationally important objectives, especially between freshwater and renewable electricity generation;

- Unresolved issues around iwi/Māori rights and interests in freshwater
- Inadequate national policy direction, meaning that relatively minor landscape or visual amenity effects could unnecessarily trump the development of wind generation
- The potential for new regulations to unduly constrain further geothermal development.

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

	Do not support	Partially support	Fully support	Don't know
<p><b>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).</b></p> <p>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.</p>			X	
<p><b>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.</b></p> <p>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.</p>		X		
<p><b>F2.3 Investigate the need for a specific regulatory framework for offshore energy generation.</b></p> <p>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.</p>		X		

**8. Adapt to technological and digital change**

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**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?**

. The construction and infrastructure industry must become more agile – Tier 1 contractors will need to become disruptors

The business landscape will become less defined and predictable and there will be more cross-industry competition as companies try new models and products and develop multiple fields of expertise. Pan industry partnerships will emerge between large technology players (Amazon, Google, Microsoft), bespoke SMEs and construction businesses as the market. Incumbents will therefore have to become agile – there will be no room, or time, for complacency. Companies which have relied on one, traditional approach will need to themselves become disruptors or put in place strong strategies to avert the disruption.

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

. Regulatory systems must be ready for the change

To be able to embrace new technologies as they emerge, countries around the world need to be ready with the various regulatory frameworks required and infrastructure and construction companies need to ensure that they have the skills, knowledge and systems in place to build the associated infrastructure.

. Infrastructure owners and designers, regulators and policy makers will need to ensure energy systems are ready for the digital revolution. Infrastructure design will need to take account of climate projections and impacts as the number of sensors in the world increases exponentially, putting pressure on energy systems.

The use of renewable energy will need to significantly increase and new technologies and ways of storing data will have to be developed.

To play their part in this, regulators and policy makers will themselves need to upskill and ensure that they are providing frameworks which allow industry and digital solutions to flourish, while incentivising the development of new energy solutions and ensuring that resources are not irrevocably depleted.

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

Infrastructure companies must be prepared to process and use huge amounts of data

For the construction and infrastructure industry, aggregating and making sense of significantly increased volumes of data being continuously generated by a wide range of sources will require new software and algorithms, skilled data analysts, better information management and insight and the creation of mega databases which understand every part of the built environment. Data gathering and storage will have to become more intelligent to ensure that information is being used to drive improvements in the way systems operate and infrastructure is used and built.

Future-proof new infrastructure as it is built

The digital technologies used to operate and maintain infrastructure will continue to evolve once the infrastructure has been built. Infrastructure owners and operators will therefore need to develop strategies to integrate and use different generations of technology as well as Intelligent Information, effectively managed and reused.



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

	Do not support	Partially support	Fully support	Don't know
<p><b>F3.1 Move towards open data for the infrastructure sector.</b></p> <p>Identify clear legislative steps required to move toward full open data for public infrastructure across central and local government.</p>			X	
<p><b>F3.2 Accelerate common infrastructure metadata standards.</b></p> <p>Develop and mandate national infrastructure metadata standards.</p>			X	
<p><b>F3.3 Accelerate investigations on the use of digital twins and prepare for a nation-wide digital twin.</b></p> <p>Develop early use cases of digital twins in public-sector infrastructure.</p>		X		
<p><b>F3.4 Design and launch artificial intelligence use-cases.</b></p> <p>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).</p>		X		
<p><b>F3.5 Deliver and retain digital information.</b></p> <p>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.</p>			X	

**9. Respond to demographic change**

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

The sector will need a more agile workforce with new skills

The sector will need a more dynamic, agile workforce, skilled at challenging conventional solutions. This means that education systems across communities will have to respond to the challenge of teaching students the skills to solve problems that have not occurred or even been imagined.

The infrastructure and construction industry will also have to improve its image and to explain the wide range of exciting and challenging roles available, in order to attract the skilled individuals it needs to undertake its digital transformation.

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

Infrastructure companies will need to balance the benefits of increasing the amount of data they collect, with privacy concerns.

Demands for regulation around privacy are likely to escalate, and infrastructure companies embedding sensors will need to ensure that they respond to the privacy challenge by ensuring the highest levels of encryption and anonymisation.

New Zealanders must encourage and support innovation

The NZ Population must demonstrate courage and help companies adopt new technology by, for example, examining the incentives, both regulated and non-regulated, that govern infrastructure networks, in order to address the fact that they often promote low risk behaviour and impact on procurement processes.

A preferred population growth path, and overly-detailed specification should be challenged where it prevents greater innovation and hinders suppliers in adapting to unexpected challenges which emerge once contracts have been signed.

Barriers to developing and accepting innovative ideas must also be challenged and regulators and other key players should be encouraged to facilitate innovation, (to reduce demand uncertainty), while those companies which pioneer innovative new ways to drive efficiency while maintaining quality should be drawn out for reward and to improve infrastructure planning.

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

	Do not support	Partially support	Fully support	Don't know
<b>F4.1 Improve analysis of upside and downside risks in infrastructure provision</b>				
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.			X	

**10. Partner with Māori: Mahi Ngatāhi**

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

Treaty of Waitangi and the right to housing

The right to adequate housing in New Zealand cannot be fully understood without considering the Treaty of Waitangi (Te Tiriti o Waitangi). This relates in particular to the relationship between Maori and the Crown, but the Treaty also needs to be recognized as a founding constitutional document of the State of New Zealand, establishing rights, obligations, expectations and responsibilities for all New Zealanders. Any attempt to understand whether the right to housing is enjoyed in New Zealand and whether national, provincial and local governments are meeting their human rights obligations requires a recognition of the Treaty as a source of rights and expectations for all New Zealanders. Using the Treaty in a meaningful way necessitates an exploration of the State's history of colonization, land dispossession, forced assimilation and racism, and the contemporary consequences of these on and for Maori. It requires an understanding of how these developments have informed and continue to shape a wide range of contemporary dynamics across New Zealand society, which are tied up in issues of cross-cultural and bicultural exchange and the division of labour in the economic system and of authority in public governance. Throughout her visit, the Special Rapporteur heard beautiful articulations by Maori of their deep physical and spiritual connection to their lands as home, despite the almost universal experiences of physical separation of Maori from their ancestral homes at the hands of various regulatory regimes between 1840 and today. This has given rise to and perpetuates an ongoing state of homelessness that is integrally linked to the existential and actual disruption of this connection as a result of colonization and, more specifically, colonial governance.

This is a dark shadow that hangs over the country – a shadow that must be understood as shared between Maori and non-Maori and that cannot be lifted without a significant shift in relations between the Crown and Maori, and by acknowledging that Maori have borne the greatest harm. Such a shift may already be under way, but it must be led by Maori in accordance with the principles of full and meaningful participation and free, prior, informed consent contained in the United Nations Declaration on the Rights of Indigenous Peoples. It must be rooted in kaupapa Māori (“a Maori way”) and Maori understandings and interpretations of Te Tiriti o Waitangi. The Special Rapporteur believes that the Government is taking steps in this direction. Maori language and principles are finding their way into housing policies and programmes, which suggests the Government may understand that Te Tiriti should form the basis of housing-related policy and programming.

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

Many of these policies and the commitment of resources to support them are in their initial stages. How they are implemented will be determinative of whether the Crown is ready to cede power, resources and leadership to Maori, allowing for their true self-determination.

As the Special Rapporteur has set out in more detail in a recent thematic report, the right to housing is interdependent with and indivisible from the rights and legal principles set out in the United Nations Declaration on the Rights of Indigenous Peoples, including the rights to self-determination, to freely determine political status, to pursue economic, social and cultural development, and to free, prior and informed consent.

The right to adequate housing is extremely important in ensuring improved housing outcomes for Maori. While the Treaty of Waitangi offers a promise of shared prosperity for inhabitants, and a promise of equal outcomes for Maori as citizens, the human right to adequate housing enshrined in the Universal Declaration of Human Rights and subsequent international human rights treaties can provide guidance as to what that prosperity and equality should look in terms of housing.

In addition to the above, the Treaty promises the retention of all assets and treasures in Maori hands. These parts of the Treaty have been breached in significant ways, especially historically.

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

The Special Rapporteur therefore welcomes the Government’s recent adoption of healthy homes standards, which require landlords to adhere to specific and minimum standards for heating, insulation, ventilation, moisture and drainage, and draught-stopping in rental properties. By 1 July 2021, these standards must be complied with by all property owners newly renting out a home or renewing a tenancy. Housing rented out by the public housing provider Kāinga Ora and community housing providers must be compliant by 1 July 2023. By mid-2024, all rental housing is to meet the standards.

The Special Rapporteur also welcomes the intention of the Government, as reflected in the Urban Development Act of 2020, to facilitate the construction of public housing. While the Act includes provisions requiring public consultation, the Special Rapporteur remains concerned that there is insufficient regulation to ensure that all urban development, including urban development driven by private actors, is socially inclusive and that local communities can fully participate in such development in an effective and meaningful way. The Act could have stronger safeguards to ensure that urban development does not result in spatial segregation and that it responds better to housing and social infrastructure needs as identified by local residents through housing and community needs assessments. Rights-based urban development should be aimed at preventing the economic or physical displacement of residents; offer decent and culturally responsive housing that is affordable for people of all ages and different income levels; be fully accessible for persons with disabilities; facilitate intergenerational cohabitation; be well serviced by transport, childcare and medical services; ensure access to employment opportunities; and respond to prevailing and future household and family sizes.

The Special Rapporteur is concerned that despite these commitments, the Government will not be able to eliminate homelessness or prevent its reoccurrence. While the action plan includes a commitment to “housing first”, government officials, service providers and advocates with whom she met indicated that without more affordable and accessible housing stock or without being able to access existing supply on a priority basis, it was impossible to roll out a substantial national programme. Moreover, for “housing first” to be successful for Maori, the model must be adapted, developed and administered by Maori, as is being done, for example, at Te Puea Memorial Marae. Overall, Maori iwi have to date not been provided with sufficient resources to provide such services.

**11. Ensure security and resilience of critical infrastructure**

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

	Do not support	Partially support	Fully support	Don't know
<p><b>F6.1 Define critical national infrastructure.</b></p> <p>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.</p>			X	
<p><b>F6.2 Identify critical national infrastructure.</b></p> <p>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.</p>		X		

**12. 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?**

Establish forthwith the post of a commissioner for indigenous peoples' rights in the New Zealand Human Rights Commission, as well as of a commissioner responsible for monitoring the implementation of the right to housing;

Increase efforts to provide alternative housing schemes for low-income and vulnerable groups. This must also include targeted funding, financing and capacity building for iwi and Maori housing providers;

Support, facilitate and provide financial resourcing to iwi, runanga and Maori housing providers and increase the self-determination of housing solutions by indigenous peoples;

Adopt regulations requiring or enabling inclusionary zoning nationally and ensure that targets set for affordable units correspond to actual, measured need to ensure thriving communities throughout the country in which nobody is left behind;

Further improve the monitoring and implementation of housing policies by establishing independent accountability and monitoring mechanisms and by regularly publishing data, disaggregated by age, population group (Maori, Pacific peoples), gender and sexual orientation, and disability, on housing affordability, housing conditions and housing overcrowding, compliance with healthy home standards, homelessness, accessibility of private and public housing for persons with disabilities, security of tenure, rent, mortgage and utility areas, evictions, duration on the waiting list for accessing public housing, and time spent in transitional housing before accessing long-term housing.

**13. Enable a responsive planning system**

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

	Do not support	Partially support	Fully support	Don't know
<p><b>C1.1 Continue to review and reform urban planning.</b></p> <p>Accelerate reforms of urban planning policies and practices that are not delivering, including those that have adverse impacts on housing affordability. Suggested actions include:</p> <ul style="list-style-type: none"> <li>Accelerating the implementation of the National Policy Statement on Urban Development (NPS-UD) requirements to upzone around rapid-transit and centre zones.</li> <li>Monitoring and enforcing council compliance with NPS-UD requirements.</li> <li>Adopting independent hearings panels to review impending district plan changes.</li> <li>Requiring that current resource management reforms be appropriately enabling of urban development.</li> <li>Clarifying definitions of 'environment' and 'amenity' to ensure that environmental protections are not applied to subjective amenity issues.</li> </ul>		X		
<p><b>C1.2 Standardise planning rulebooks to increase capacity and reduce cost and uncertainty.</b></p> <p>Merge regional and district plans into a combined plan, resulting in 14 combined plans rather than roughly 100 council plans.</p> <p>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.</p>		X		
<p><b>C1.3 Set targets for housing development capacity and triggers for release of additional development capacity.</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>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.</li> <li>Directs local authorities to use information on land prices to guide the planning and release of development capacity in high-demand areas.</li> <li>Carries over existing NPS-UD direction on enabling intensification and disallowing the use of minimum parking requirements in district plans.</li> <li>Incorporates additional direction on enabling intensification and private plan changes in addition to what is already in the NPS-UD.</li> </ul>			X	
<p><b>C1.4 Review and realign Crown landholdings.</b></p> <p>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.</p>	X			

**14. Co-ordinate delivery of housing and infrastructure**

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

	Do not support	Partially support	Fully support	Don't know
<p><b>C2.1 Ensure the provision of three waters infrastructure to enable growth.</b></p> <p>Ensure the current three waters reform programme proactively enables urban development by:</p> <ul style="list-style-type: none"> <li>Establishing an economic regulator for the sector with a mandate to ensure</li> </ul>				

<p>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.</p> <p>Clarifying the interface between new water entities and developer-financed water infrastructure provided under the Infrastructure Funding and Financing Act 2020.</p> <p>Ensuring that developers can benefit appropriately from the provision of infrastructure that has spare capacity.</p>			X	
<p><b>C2.2 Volumetric charging to fund proportion of water infrastructure.</b></p> <p>Enable publicly-owned water providers to charge water users directly for their services and enable volumetric wastewater charges for large wastewater sources.</p>			X	
<p><b>C2.3 Improve information on infrastructure capacity and costs to service growth.</b></p> <p>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:</p> <p>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.</p> <p>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.</p>			X	
<p><b>C2.4 Conduct post-implementation reviews of transit-oriented development opportunities.</b></p> <p>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.</p>			X	
<p><b>C2.5 Implement regional spatial planning.</b></p> <p>Develop a new Strategic Planning Act that provides a framework for regional spatial plans and directs local authorities and infrastructure providers to develop them.</p> <p>Require that combined plans and regional and local funding plans should not be inconsistent with regional spatial plans.</p> <p>Consider central government funding and resourcing to support regional spatial plan development.</p>			X	
<p><b>C2.6 Increase the use of water-sensitive urban design measures to reduce pressure on water networks.</b></p> <p>Develop combined district and regional plans to enable and incentivise water sensitive urban design to reduce the pressure that growth places on</p>				

sensitive urban design to reduce the pressure that growth places on stormwater and other networks.

X

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

## 15. Improve access to employment

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

Greenhouse gas emissions - You create it, you pay;

The built environment accounts for around 20% of Aotearoa New Zealand's carbon emissions. This is through the materials used in construction, transport related emissions from construction and the energy used to construct and operate buildings. About half the greenhouse gas emissions associated with buildings in Aotearoa New Zealand are estimated to come from embedded emissions in the materials. Most of the rest come from operational emissions (mostly heating and cooling) over the building's life. A small proportion is derived from building waste.

The construction sector is energy intensive. Recent data is not available, but in 2012 it was estimated that the construction sector used about 5% of Aotearoa New Zealand's energy, with the industry heavily dependent on petroleum fuels.

Energy usage is closely associated with greenhouse gas emissions. These cities/buildings and transport congestion pricing and/or road tolling should be set against these greenhouse gas emissions.

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

Climate adaptation

While some natural hazards (such as earthquakes) are recognised by building and infrastructure codes and standards, resilience to emerging risks such as climate change impacts are not yet well accounted for. These risks include flooding and extreme weather, saltwater intrusion into groundwater and risks to sea-level exposed infrastructure such as roads and ports.

Designing in robustness to account for such risks (such as stronger foundations and walls or increased water management capacity) has economic and environmental costs. These costs include increased emissions that may worsen climate change or additional environmental degradation.

Nature-based solutions and improved designs that prioritise working with the environment rather than seeking to control it, help improve resilience to climate change impacts. So too does better decision making about where not to build for traffic congestion.

"We need to be planning for adaptability in the future."



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

	Do not support	Partially support	Fully support	Don't know
<p><b>C3.1 Implement congestion pricing and/or road tolling to improve urban accessibility.</b></p> <p>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.</p>		X		
<p><b>C3.2 Use congestion pricing to plan for new transport infrastructure.</b></p> <p>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 roads space to provide safe cycling facilities.                      Use signals from congestion pricing to help optimise the timing and delivery of new multi-modal transport infrastructure.</p>		X		
<p><b>C3.3 Plan for congestion pricing schemes in other New Zealand cities.</b></p> <p>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.</p>		X		

**16. Plan for lead infrastructure**

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**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?**

Broader connections - Green Infrastructure corridor designations will need to be 10 year Bonds and 30 year Green Investments;

While this is focused on environmental aspects associated with building and construction, it is important to note there are connections to other aspects of the system - Green Infrastructure.

While taking a systemic approach to environmental opportunities and challenges in green infrastructure, and construction will help enhance the sustainability and

performance of these sectors, there are also connections the workstream can make to broader societal aspirations.

Construction and Green infrastructure is a critical connection and influence point that supports how well communities and environments are able to thrive.

It is closely associated with social equity and justice through housing affordability and accessibility.

Buildings play important roles in improving health and wellbeing for all. They help both personal development (through providing education, recreation and work facilities and opportunities) and economic development. Good infrastructure and construction improves community and economic resilience. It can also help protect biodiversity and important landscapes and improve air and water quality.

The construction sector, along with the rest of the economy and society, is in a time of significant transition. It needs to address old as well as new challenges and realise the potential of emerging opportunities and spatial planning.

These will require collective actions and systemic changes. However, successfully navigating the transition will result not only in improved sector productivity and profitability but will make substantive contributions to Aotearoa New Zealand's broader social, environmental and climate change aspirations.

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

Any multi-modal corridor protection fund that is part of the planning for new and green infrastructure, and of a global sovereign wealth fund that will provide massive new impact investment in green infrastructure and in the green industries and innovation requirements for a Just Transition.

A significant change in approach to the world's resources through innovative international charges could not only eradicate poverty and contribute to achieving the Sustainable Development Goals, but could also price the world's resources fairly (our shared inheritance) thereby significantly reducing the extraction of carbon, and in turn preserving all of our planet's resources for the benefit of future generations. This should cover it!

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

	Do not support	Partially support	Fully support	Don't know
<p><b>C4.1 Develop a lead infrastructure policy, supporting implementation guidance, and a corridor protection evaluation methodology.</b></p> <p>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.</p> <p>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.</p>			X	
<p><b>C4.2 Enable lead infrastructure corridor protection through resource management reform.</b></p> <p>Extend the duration of designations to 10 years and allow designations to be granted based on concept plans.</p> <p>Base statutory tests for infrastructure corridor designation on a corridor protection evaluation methodology.</p>		X		
<p><b>C4.3 Establish a corridor reservation fund to protect lead infrastructure corridors.</b></p> <p>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.</p>			X	

**17. Improve regional and international connections**

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

Cyber risk must be taken seriously and programmed in Government will have to scale up and invest in national cyber- defence programmes to protect critical infrastructure. However the infrastructure industry must take its share of responsibility in tackling these issues. It must ensure that data is treated as a major asset. Cyber risk has to be programmed in, much as any other risk would be. Governance must be strong and best practice embedded and rigorously followed.

Employees must be properly trained and security software kept up to date. Customers will rightly become increasingly demanding on cyber-security compliance and the legal implications, given the significance of some of the data involved, are significant. The infrastructure industry must take the risks seriously and be proactive in tackling them.

Companies must drive digital throughout the business and supply chain Companies that commit to digital have to change the way they design, procure and build. They must take a strategy-based digital approach and drive it across the business, changing and improving the way the business operates and interacts with its customers. Digital transformation cannot be the preserve of one specific team. It must be integral to the whole business at every stage, owned by those in leadership positions, in particular. Ensuring that the digital strategy is adopted throughout the supply chain will be key to ensuring that the value of the changes is maximised.

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

	Do not support	Partially support	Fully support	Don't know
<p><b>C5.1 Develop a long-term national supply chain strategy.</b></p> <p>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.</p>			X	
<p><b>C5.2 Update the 2006 digital strategy.</b></p> <p>The 2006 digital strategy should be updated to prepare New Zealand for realising the full benefits of a connected digital society.</p>			X	

**18. 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?**

How we define infrastructure

Our definition of infrastructure is broad, and encompasses utilities (e.g. power generation, transmission and distribution, gas, water, and telecoms), transportation (e.g. rail, roads, ports and airports), and social infrastructure (e.g. hospitals and schools).

The provision of infrastructure has flow on benefits as it enables vertical construction including housing, further supporting economic growth and meeting social needs.

**19. Integrate infrastructure institutions**

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

New Zealand has ratified most international human rights treaties, including the International Covenant on Economic, Social and Cultural Rights, which sets out the right to adequate housing in article 11. Pursuant to the Covenant, New Zealand has the obligation to progressively realize the right to adequate housing through appropriate measures, using the maximum available resources. The right to adequate housing should not be interpreted narrowly, for example as merely having a roof over one’s head; rather, it should be seen as the right to live somewhere in security, peace and dignity. The following characteristics are necessary for housing to be adequate: (a) legal security of tenure; (b) availability of services, materials, facilities and infrastructure; (c) affordability; (d) habitability; (e) accessibility; (f) location; and (g) cultural adequacy.

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

The Government’s COVID-19 response includes substantial funding for infrastructure projects, with an initial focus on ‘shovel-ready’ initiatives.

This builds on the stimulus funding allocated to projects pre COVID-19. A longer-term set of projects is yet to be announced. This will be critical for the sector and for providing wider economic stimulus.

To enable infrastructure to play a pivotal role in rebuilding New Zealand, there are significant challenges the sector needs to address including procurement, workforce availability, planning and RMA challenges and local government funding constraints. Short and long-term changes in demand for infrastructure assets also need to be considered.

The recovery plan and programme of investment presents opportunities to improve the provision of infrastructure so it benefits all New Zealanders. Investment decisions

must support broader economic and social outcomes, including sustainability and equity. Reform of existing and, in some cases outdated, delivery and funding models will be required to accelerate development, improve efficiency, and reduce cost.

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

There are several key themes and challenges caused by COVID-19 affecting the infrastructure sector:  
 Central government support – In response to a forecast downturn in the infrastructure and construction sector, and to stimulate the economy, the COVID-19 Response and Recovery Fund was established with \$3 billion set aside initially to fund a selection of ‘shovel-ready’ infrastructure projects across the country.  
 This initiative built on the \$12 billion New Zealand Upgrade Programme announced in January 2020, and Provincial Growth Fund infrastructure investments.  
 The Infrastructure Industry Reference Group (IRG) was tasked with identifying ‘shovel-ready’ projects to put forward to Ministers for possible investment. It received over 1,900 submissions with a combined value of \$136 billion, with the first 12 projects announced on 1 July 2020.

In addition to fiscal stimulus, the Government introduced legislation to Parliament to establish a new fast-track resource consenting and designation processes, with an initial 11 projects announced in June 2020.

Local government constraints – Local governments throughout the country are facing reduced revenue from development contributions, building and consent fees, public transport and parking fees, events and community facilities, as well as lower dividends from council-owned businesses, such as ports and airports.

Lower revenue not only reduces funding available for infrastructure investment, but also increases debt to revenue ratios, further limiting councils’ ability to borrow to fund investment.

Councils have responded by reducing their spend on non-essential services and deferring non-essential investments.

**Indicate your support for these proposed options to integrate infrastructure institutions**

	Do not support	Partially support	Fully support	Don't know
<p><b>S1.1 Clarify funding of spatial plans.</b></p> <p>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.</p>			X	
<p><b>S1.2 Review roles and functions of local government and other related infrastructure providers.</b></p> <p>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.</p>			X	

**20. 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?**

There is an opportunity to change the way infrastructure is delivered nationally to improve efficiency and reduce cost. Investment decisions must support broader economic and social outcomes, including sustainability and equity. Increased transparency in the financial system maximises the ability for tangible value to be delivered to communities through housing. This results largely from a collaborative dialogue with a range of stakeholders from the housing ecosystem and the general public about the actual way that changes in the financial and banking system influence housing.

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

Collective Housing projects are able to structure their early-stage development feasibility in a way that helps lenders quantify risk and assess mortgage suitability. Financial institutions have diversified their understanding of development risk profiles beyond a market-driven model. They are supported by central government to provide capital investment and loans to invest in housing, where social and environmental benefit is demonstrated that aligns with regional and national policy and strategy.

Legislative change recognising Collective Housing as a development approach in its own right has enabled reform in the finance and insurance sectors, enabling communities to access finance to develop their own fit-for-purpose communities in partnership with public and private sector. These take multiple forms; from cooperative ownership structures through legislative change supporting property cooperatives and co-housing communities (streamlined to the development of MBIE and NZIA - Collective Housing Design Guide).

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

Existing regulation in New Zealand lags behind comparable regulation in other countries. The majority of built environment professionals treat the NZBC as the goal rather than the legal minimum. This leads to a lack of market incentive to innovate and provide cost-effective, high performing building components. The Resource Management Act 1991, tax legislation, and other regulatory mechanisms have similar issues that inhibit innovation in the sector. This hinders the deployment of mechanisms like co-housing, community/Maori land trusts, cooperative ownership and accessory dwelling units. Any depreciated funds by local authorities, will need to address various regulations that may impact on the maintenance, of their balanced budgets on a forecast basis.

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

	Do not support	Partially support	Fully support	Don't know
<p><b>S2.1 Fund tourism infrastructure.</b></p> <p>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.</p>			X	
<p><b>S2.2 Rating Crown land.</b></p> <p>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.</p>		X		
<p><b>S2.3 Develop a transition plan for transport funding.</b></p> <p>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.</p>		X		
<p><b>S2.4 Use value-capture mechanisms to fund infrastructure for growth.</b></p> <p>Incentivise local authorities to make greater use of targeted rates or value-capture mechanisms to fund growth infrastructure.</p>			X	
<p><b>S2.5 Enable land-value change as a basis for a targeted rate.</b></p> <p>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.</p>		X		

**21. Make better use of existing infrastructure**

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

Construction sector challenges – There was already significant pressure on balance sheets and working capital pre COVID-19 due to the nature of existing contractual arrangements and the low margins that are prevalent. The COVID-induced lockdown, ongoing project delays and extended time frames have added further stress to the financial position of many in the sector. Some projects have also been mothballed.

Changing behaviours – COVID-19 has accelerated trends toward workplace flexibility, remote working, and use of video conferencing. This has affected the demand for transportation infrastructure, reduced public transport patronage and increased the reliance on communications networks as a critical element of our nation's infrastructure. Ultimately those trends will alter how our cities are used and the infrastructure cities require.

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

Travel restrictions – Border restrictions have reduced international visitor numbers to near zero and are likely to remain in place for some time. This has had a severe impact on airports, airlines, and other transportation providers. Regions reliant on tourists have been hit hard.

Restrictions are also impacting the ability to retain highly skilled and specialised personnel and bring in new experts to work on projects.

Housing – Inability to access financing is creating uncertainty in the private sector which, coupled with declining sales volumes, is placing the building and development market under pressure. The Government signalled in its Budget 2020 a commitment to building 8,000 public and transitional homes over the next four to five years, funding this through rent subsidies, along with a Kāinga Ora financing programme.

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

	Do not support	Partially support	Fully support	Don't know
<p><b>S3.1 Consider non-built options.</b></p> <p>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.</p>			X	
<p><b>S3.2 Investigate New Zealand Government Asset Management Team.</b></p> <p>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.</p>			X	
<p><b>S3.3 Improve pricing to optimise use of existing infrastructure.</b></p> <p>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:</p> <p>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).</p>			X	

**22. Require informed and transparent decision making**

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

	Do not support	Partially support	Fully support	Don't know
<p><b>S4.1 Undertake a post-implementation review of all major infrastructure projects.</b></p> <p>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.</p>			X	
<p><b>S4.2 Undertake cost benefit analyses of all projects over \$150 million.</b></p> <p>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.</p> <p>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.</p>			X	
<p><b>S4.3 Review the discount rate.</b></p> <p>Undertake an inquiry into the appropriateness and consistent application of New Zealand's social discount rate policy.</p>			X	
<p><b>S4.4 Develop a cost benefit analysis manual for new water infrastructure.</b></p> <p>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.</p>			X	

**23. Develop and prioritise a pipeline of work**

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

	Do not support	Partially support	Fully support	Don't know
<p><b>S5.1 Develop a priority list of projects and initiatives.</b></p> <p>Develop a priority list of projects and initiatives that is consistent with the Aotearoa New Zealand Infrastructure Strategy.</p>			X	
<p><b>S5.2 Improve the use of the pipeline for commercial decision-making.</b></p> <p>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.</p>			X	
<p><b>S5.3 Measure sector utilisation.</b></p> <p>Develop measures of current and projected future infrastructure delivery capacity and projected utilisation.</p>			X	

**24. S6. Improve project procurement and delivery**

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

The Infrastructure Commission is well placed to lead initiatives in this area, along with industry action through the Construction Sector Accord. However, the current substantial programme of infrastructure investment proposed as part of the recovery plan also provides a catalyst for change in the sector including:  
Considering the demand for infrastructure, not just supply.

Traditionally users of some form of infrastructure have not faced price signals for use, and where they do, they are not well correlated to time of use. As part of our investment puzzle, central and local government agencies should make the best use of existing infrastructure and be bolder in pricing to better determine when and how it is built. Roading, rail, and water could all benefit from improved pricing signals.

Investing for broader outcomes Bold investment decisions are needed to ensure that infrastructure creates lasting benefits for productivity, growth and sustainable job creation, rather than simply facilitating direct employment. Projects need to be viewed holistically to ensure they are coordinated and are a strong catalyst for both wider economic development and social outcomes. Investigating new funding models.

New ways of funding infrastructure need to be considered, in order to accelerate development, harness private capital, better manage risk and reduce reliance on Crown and local authority balance sheets. Changes introduced by the Government as part of the Urban Growth Agenda may facilitate broader capital options.

**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?**

Considering financing sources - Financing sources should be considered with respect to outcomes to be achieved and effects on the intergenerational debt burden. There is a trade-off for private financing between cost and the level of risk-transfer, with one option for the Crown and local authorities to recycle capital from projects where risk has already been reduced (as is the case with built assets), into projects to be developed.

Planning and approval processes - Planning and approval processes should be streamlined to improve efficiency and accelerate the procurement and delivery of projects. Business cases need to be more focused, and when coupled with a refined funding and finance framework, create a real infrastructure pipeline. Clear governance and accountability around project delivery, coupled with improved planning will provide confidence throughout the construction supply chain.

Reforming delivery models - There is an opportunity to change the way infrastructure is delivered nationally to improve efficiency and reduce cost. New Zealand's traditional approach to delivery is often highly localised. This doesn't bring the benefits of strategic planning and procurement that a nation of five million should experience. We need to look at regionalised decisions that leverage scale and are, where appropriate, nationally consistent. The water sector is an obvious example that would benefit from a regional approach. Collaboration between the public and private sector.

Recovery will need effective partnership with balance between government-led recovery and opportunities for private sector involvement.

The optimal form of government involvement will differ by asset type and project, and may involve investment, ownership, regulation or reform. Government should ensure there is greater collaboration between its procurement agencies to maximise the benefit to the Crown resulting from the deployment of infrastructure, and partner with the private sector through delivery models that are less complex and fairly allocate risk to encourage rapid deployment.

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

	Do not support	Partially support	Fully support	Don't know
<p><b>S6.1 Establish a major projects leadership academy.</b></p> <p>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.</p>			X	
<p><b>S6.2 Revisit New Zealand’s approach to market-led proposals.</b></p> <p>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.</p>			X	

**25. 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?**

Reforming the port sector - Coupled with improved transportation pricing, the opportunity exists to reform the port sector by consolidating existing ownership to ensure future investment is more efficient and better meets the demands of exporters and importers, with the reforms feeding into the road and rail connections that would optimise supply chains. This reform would also assist in reducing local government balance sheet commitment to the port sector.

Enabling sustainability - There is a need to ensure that investment decisions and actions support New Zealand’s commitment to reducing its environmental impact and ensure the prosperity and sustainability of future generations. The role of road and rail will be a key consideration, including how well carbon is charged for as part of transport emissions. Recent initiatives such as the establishment of the NZ Green Investment Fund and Climate Change Commission will be central to leading the development of best practice in this area.

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

	Do not support	Partially support	Fully support	Don't know
<p><b>S7.1 Measure and benchmark infrastructure cost performance.</b></p> <p>Undertake investigations into the cost performance of New Zealand's infrastructure sector that:</p> <ul style="list-style-type: none"> <li>Covers multiple horizontal infrastructure sectors to enable the identification of common issues and points of difference.</li> <li>Identify recent cost trends and drivers of cost trends within infrastructure sectors.</li> <li>Benchmarks New Zealand's cost performance against better-performing OECD countries and identify drivers of differences.</li> </ul>			X	
<p><b>S7.2 Standardise design.</b></p> <p>Develop a standardised approach to infrastructure design that:</p> <ul style="list-style-type: none"> <li>Prioritises high productivity.</li> <li>Allows for a division of labour, offsite construction/modularisation and repeatability and therefore quality improvements and reduces the risk of systematic failure.</li> </ul>			X	
<p><b>S7.3 Develop a planning system that is more enabling for infrastructure.</b></p> <p>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.</p> <p>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.</p> <p>Ensure consenting pathways for infrastructure through the National Planning Framework, potentially through setting standards for planning policies and regulations for infrastructure.</p> <p>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.</p> <p>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.</p> <p>Ensure that regional spatial strategies can respond rapidly to changing national and regional priorities.</p> <p>Require a pre-notification audit of proposed regional unitary plans to ensure consistency with national direction.</p> <p>Allows infrastructure consents to be bundled with complementary plan changes in surrounding areas.</p>			X	

**26. Activate infrastructure for economic stimulus**

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

Responding to societal change - The planning and delivery of infrastructure needs to respond to evolving needs over the short and long term, such as the changes in transportation patterns that are already becoming evident and the vastly increased importance of effective and resilient communications infrastructure. Infrastructure must also respond to an aging population.

Leveraging iwi involvement - Iwi have a key role to play in the delivery of infrastructure across all regions of New Zealand, both as substantial land owners and as investors with typically long-term investment horizons. Iwi involvement in projects may also help to align projects with the broader economic and social goals and outcomes that government social policies are working to achieve.

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

	Do not support	Partially support	Fully support	Don't know
<p><b>S8.1 Develop ready to build infrastructure.</b></p> <p>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.</p>			X	
<p><b>S8.2 Evaluate stimulus impacts.</b></p> <p>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.</p>			X	

**27. General comments and supporting documents**

**Comments**

Focusing on governance:

Doing things differently will require a greater focus on governance, including project controls and risk management.

Critical to this will be establishing:

Clear governance frameworks: A governance framework will establish the different individuals and groups required to deliver the project.

The framework should complement the organisation's strengths and be designed so as to address the specific project risks.

Definitive roles, responsibilities and accountabilities:

Once a framework has been established, each group or member within the governance framework should have a clear understanding of their role, responsibilities and level of accountability and delegation.

Project Controls:

Project controls should be established to measure progress and success. Key areas of focus include risk, financial, quality, communications and programme.

Project controls define the information flow through the governance framework.

Risk Management:

Managing risk is one of the key elements which governance should be structured for, and the project controls must reflect this.

Stakeholder Awareness:

Project governance should consider the needs of all stakeholders associated with the project, and establish a proactive plan to communicate with them.

## 28. Review Page

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review submission time landed

03-07-2021 01:53 AM

## 29. Auto submit - final

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Date completed NZT

03-07-2021 01:53 AM