Title: **Testing our thinking - Developing an enduring National Infrastructure Plan**

Organisation: **BECA Limited**

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Summary of information submitted

Page 1 - Introduction

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We're seeking feedback

Our Discussion Document, Testing our thinking: Developing an enduring National Infrastructure Plan, sets out our thinking as we begin work to develop a National Infrastructure Plan. The Discussion Document sets out what we expect the Plan will cover and the problem it's trying to solve, as well as the approach we're proposing to take to develop it.

We're sharing this now to test our thinking and give you the chance to share your thoughts. Let us know if we've got it right or if there are issues you think we've missed.

We'll use your feedback as we develop the Plan. We'll be sharing our thinking by presenting at events around the country, hosting workshops and webinars, and sharing updates through our website, newsletter, and social media. We'll also seek feedback on a draft Plan before publishing the final Plan in December 2025.

Submission overview

You'll find 17 main questions that cover the topics found in the Discussion Document. You can answer as many questions as you like and can provide links to material within your responses. On the final page (6. Next steps) you can provide any other comments or suggestions that you would like us to consider as we develop the National Infrastructure Plan. Submissions are welcomed from both individuals and organisations.

A few things to note:

- You can save progress using the button at the top right of this form.
- A red asterisk (*) denotes a mandatory field that must be completed before the form can be submitted.
- We expect organisations to provide a single submission reflecting the views of their organisation. Collaboration within your organisation and internal review of your submission (before final submission), is supported through our Information Supply Platform. You'll need to be registered with an Infrastructure Hub account, and be affiliated with your organisation to utilise these advanced features. Many organisations will already have a '*Principal respondent*' who can manage submissions and assign users at your organisation with access to the draft responses.
- Submissions will be published on our website after the closing date. The names and details of organisations that submit will be published, but all personal and any commercial sensitive information will be removed.

Further assistance

Each submission that is started is provided a unique reference identifier. These identifiers are shown in the top right of each application page. Use this identifier when seeking further assistance or communicating with us about this submission by using one of the following methods.

- Use info@tewaihanga.govt.nz to contact us with any questions relating to our Discussion Document and consultation.
- Use inform@tewaihanga.govt.nz for help managing roles and permissions of user accounts affiliated with your organisation in the Information Supply Platform (ISP).

Submission method

Our preferred method is to receive responses through this form. However, we anticipate some submitters will wish to upload a pdf document, especially where their submission is complex or long. If this submission method is necessary, please use this word template and save as a pdf. We ask that you retain the structure and headings provided in the template as this will support our processing of responses.

Select a submission method

To continue, select the method you will be using.

Online form

Page 2 - Context for the Plan

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Testing our thinking

The Discussion Document includes five sections. Below we're seeking feedback on why we need a National Infrastructure Plan. We also want to test our thinking on our long-term needs and make sure we have a clear view of what investment is already planned.

Section one: Why we need a National Infrastructure Plan

A National Infrastructure Plan can provide information that can help improve certainty, while retaining enough flexibility to cancel or amend projects as circumstances or priorities change.

1. What are the most critical infrastructure challenges that the National Infrastructure Plan needs to address over the next 30 years?

A key infrastructure challenge is enabling New Zealanders to understand that we are on a journey of change from where and how we live today, to where and how we will live in 100+ years time.

The National Infrastructure Plan should both address closing the infrastructure deficit whilst ensuring that we do not waste the funds we invest.

Although your research indicates that New Zealand needs to allocate about 60% of its infrastructure investment towards maintaining existing assets, it does raise the question: how much of this current infrastructure should be relocated or only maintained for a limited time due to risks from climate change and natural disasters? Additionally, how might property and business owners in these areas respond if infrastructure decisions lead to a devaluation of their assets?

2. How can te ao Māori perspectives and principles be used to strengthen the National Infrastructure Plan's approach to long-term infrastructure planning?

Te Ao Māori perspectives and principles should be integral to our infrastructure planning. Valuing indigenous knowledge / matauranga to inform decisions can better enable a long-term and holistic view of our environment alongside our infrastructure investments.

Section two: Our long-term needs

The National Infrastructure Plan will reflect on what New Zealanders value and expect from infrastructure. To do this, the Plan needs to consider New Zealanders' long-term aspirations and how these could be impacted over the next 30 years.

3. What are the main sources of uncertainty in infrastructure planning, and how could they be addressed when considering new capital investments?

The scale and impacts of climate change and how this influences infrastructure planning

There is significant uncertainty with forecasting the scale and timing of climate change impacts. This is also influenced by the degree to which global greenhouse gas emissions can be limited or reduced.

This uncertainty could be addressed by:

1. *Using a range of modelled climate change scenarios to give consideration to where assets are located (both existing and planned new), in relation to how specific locations will be impacted over time by climate change.*
2. *Developing a National Land Use Plan to guide infrastructure decision making, identifying areas of high risk.*
3. *This Land Use Plan then informing broader spatial planning for appropriate land use for our communities into the future.*

Tying this together - for long-life infrastructure, such as roads and major energy assets, it seems appropriate to carry out a detailed climate risk assessment considering climate scenarios out to at least the design life of the asset.

Natural hazards – seismic & volcanic

Using the same methodology as suggested above for climate change, a national spatial plan could also consider these natural hazard risks, to further inform infrastructure planning.

Growing global instability and reliance on international supply chains

This raises a more philosophic question on the extent to which our economy and society rely on international supply chains, and whether we should target higher levels of self-sufficiency (for food and manufactured goods). The balance we strike on this will inform land use and the infrastructure needed to support production.

Section three: What investment is already planned

We already gather and share data on current or planned infrastructure projects through the National Infrastructure Pipeline. This data, alongside other information gathered by the Treasury or published by infrastructure providers, helps to paint a picture of investment intentions.

4. How can the National Infrastructure Pipeline be used to better support infrastructure planning and delivery across New Zealand?

Our understanding is that the National Infrastructure Pipeline will consist of a list of prioritised projects, a menu from which the government of the day will select specific projects to progress, in alignment with policy settings. This means that many projects may sit in the 'pipeline' for some time before being implemented (if at all). For these projects the investment cases will probably go out of date well before any decision to implement,

resulting in rework and delay. Historically this revisiting of investment cases has caused significant inefficiency and delay, so would be good to avoid or minimise, if possible.

To assist with this, we suggest a dynamic digital approach to keep investment cases and BCRs up to date. This could be achieved by using live data to update estimations of BCR and programme, to keep the investment cases for all project 'live' and thereby minimise rework delays.

Section four: Changing the approach

We have used our research and publicly available information on infrastructure investment challenges to identify key areas for change. The next question and the following three pages seek further detail on the three themes in section four of our paper. Within each of the three themes, we explore some topics in more detail, outlining the evidence, discussing the current 'state of play', and asking questions about where more work is needed.

5. Are we focusing on the right problems, and are there others we should consider?

As identified above, we highlight two key issues for consideration:

1. *Climate change and related impacts*
2. *Growing global instability*

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Changing the approach — Capability to plan and build

Section four looks at changes that we can make to our infrastructure system to get us better results. We've broken these changes down into three themes: capability to plan and build, taking care of what we have, and getting the settings right.

For the first theme, we look at three key areas:

- Investment management: Stability, consistency, and future focus
- Workforce and project leadership: Building capability is essential
- Project costs: Escalation means less infrastructure services.

Investment management: Stability, consistency, and future focus

We're interested in your views on how we can address the challenges with government infrastructure planning and decision-making.

6. What changes would enable better infrastructure investment decisions by central and local government?

The methodology proposed by the National Infrastructure Plan goes a long way to enabling better infrastructure planning and decision making.

As suggested above we consider this would be further enhanced by the development of a National Land Use Plan and National Spatial Plan, to guide the location planning for development and supporting infrastructure.

7. How should we think about balancing competing investment needs when there is not enough money to build everything?

These will be the decisions that the governments of the day will make, guided by their specific policy settings.

Workforce and project leadership: Building capability is essential

We're interested in your views on how we can build capability in the infrastructure workforce.

8. How can we improve leadership in public infrastructure projects to make sure they're well planned and delivered? What's stopping us from doing this?

The historical stop/start nature of our infrastructure investment and workflow discourages longer term planning and investment in workforce capacity and capability, including project leadership. This is one of the key contributors to the comparatively low levels of productivity for the sector.

Developing a more consistent and predictable flow of work for the sector will encourage the investment to improve leadership.

9. How can we build a more capable and diverse infrastructure workforce that draws on all of New Zealand's talent?

We consider that there are three key opportunities here:

- *As above, developing a more consistent and predictable flow of work for the sector will encourage the investment to improve capacity and capability.*
- *A greater focus in the education system (schools and tertiary) on the subjects and career pathways relevant to the infrastructure sector – STEM and construction as professions / trades / careers.*
- *A deliberate focus on diversifying the workforce – the two items above will contribute to this, but strong industry collaboration and focus will be needed to*

make a step change. This could include establishing sector targets for gender and ethnic diversity, and measuring and reporting against these.

Project costs: Escalation means less infrastructure services

We're interested in your views on further opportunities to improve our ability to deliver good infrastructure at an affordable cost.

10. What approaches could be used to get better value from our infrastructure dollar? What's stopping us from doing this?
Two approaches that could be used are:

1. *Steadily improving the productivity of the sector over time. The key enabler here, as covered above, is developing a more consistent and predictable flow of work for the sector. This will enable continuing improvement of delivery, extracting better value.*
2. *More collaborative contractual mechanisms that share risk and reward in a way that incentivises on programme and on budget outcomes. There are some good offshore examples of this.*

Changing the approach — Taking care of what we've got

The second theme in section four looks at how we can get better at taking care of what we have. It looks at three areas:

- Asset management: Managing what we already have is the biggest task
- Resilience: Preparing for greater disruption
- Decarbonisation: A different kind of challenge.

Asset management: Managing what we already have is the biggest task

Asset management means looking after our infrastructure. We are interested in your views on how we can improve planning for this.

11. What strategies would encourage a better long-term view of asset management and how could asset management planning be improved? What's stopping us from doing this?
The following strategies to improve asset management could be considered:

- ***Enhancing Workforce Capacity**: Recognising Infrastructure Asset Manager as a standard occupation boosts interest in this career. Mandating Chartered Asset Management accreditation for public agencies would enhance professional competence.*
- ***Adopting Best Practices**: Agencies could apply system best practices, principles, and frameworks for better investment and asset management. The National Infrastructure Plan could showcase case studies and pilot projects demonstrating these practices.*
- ***Developing Service Frameworks**: A national-level service framework could be established - outlining asset objectives and service standards linked to government priorities and organisational goals.*
- ***Tracking Performance**: An asset management scorecard cold be developed - comparing investment with delivery outcomes and realized benefits. It could include benchmarks and tracking indicators as a measure.*
- ***Providing Financial Guidance**: A financial framework could be established - for determining and applying for annual lifecycle programmes. This would aim to reduce variability and reliance on subjective interpretation when agencies report financial data, aiding in accurate capital and operational budgeting.*

Resilience: Preparing for greater disruption

We are interested in your views on how we can better understand the risks that natural hazards pose for our infrastructure.

12. How can we improve the way we understand and manage risks to infrastructure? What's stopping us from doing this?

The suggestions made above on climate change, natural hazards, and global instability apply here.

A key topic here is the economic, social, and political issue of planning for managed retreat. Depending on how decisions are made, this could stop us from improving the way we manage risks to our critical infrastructure – deciding to retain infrastructure in vulnerable locations for example.

One suggestion would be to develop a critical infrastructure plan to indicate the power, telecommunications, transport, urban and water infrastructure which may need to be "hardened" to a higher level of resilience across the country. This work could then be given a higher priority in the National Infrastructure Plan and could then be used to inform investment in areas that will be supported by resilient critical infrastructure.

Decarbonisation: A different kind of challenge

We're interested in your views on how we can improve understanding of the decarbonisation challenge facing infrastructure.

13. How can we lower carbon emissions from providing and using infrastructure? What's stopping us from doing this?

We know how to lower carbon emissions from providing and using infrastructure.

What's stopping us from doing this is a lack of urgency in understanding the longer-term impacts of climate change, and consequently the need to decarbonise is not acknowledged or sufficiently prioritised. The challenge is therefore one of engagement, education and securing buy-in rather than of knowledge or technology.

Specific areas to focus on for lowering carbon emissions associated with infrastructure include:

Circular Design/Construction

- *Performance measures need to prioritise low carbon design to focus on rethink and reuse (not recycle).*
- *Need to focus on design so that assets can be easily disassembled and reused at their end of life.*
- *Create infrastructure with a focus on durability, enabling longer lifecycles and reducing the need for frequent replacements.*
- *Incorporate modular designs that allow for easy upgrades or modifications, extending the useful life of structures.*

Regulation/standards

- *Changing from design standards to performance requirements unlocks innovation.*
- *Lack of incentives and clear decarbonisation requirements slow down the adoption of lower carbon solutions.*
- *Existing regulations and codes do not accommodate new practices, and the different risk appetite required for the industry to change.*
- *Circular procurement approach to drive change in the industry – Public procurement drives change quicker than regulations!*

Technology, innovation and capability

- *Need to require technology to be integrated into solutions to accelerate change e.g. material passports.*
- *Need research hubs and R&D incentives to create new products – eg utlising 3D printing with different materials.*
- *Lifecycle thinking - need a circular approach to innovation so that new products use existing materials (recycling) but end up shortening the life of the asset with materials going to landfill sooner eg plastics in pavements.*

Economics

- *Low carbon design is often viewed as expensive. However, adopting circular design approaches can in fact save money.*
- *Material product supply will become more challenging as specific materials become limited or too expensive.*
- *Traditional cost-benefit analyses may not adequately account for the long-term savings and environmental benefits of circular practices.*

Supply chains

- *Need to consider the full supply chain in decarbonisation efforts to change the system.*
- *Transitioning to circular/lower carbon economy models requires collaboration across the supply chain, which can be complex and time-consuming.*
- *Ensuring consistent quality and availability of new materials presents logistical challenges.*

Page 5 - Getting the settings right

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Changing the approach — Getting the settings right

The third theme in section four looks at how we can get our settings right to get better results from our infrastructure system. It looks at three areas:

- Institutions: Setting the rules of the game
- Network pricing: How we price infrastructure services impacts what we think we need
- Regulation: Charting a more enabling path.

Institutions: Setting the rules of the game

We're interested in your views on what changes to our infrastructure institutions would make the biggest difference in giving us the infrastructure we need at an affordable cost.

14. Are any changes needed to our infrastructure institutions and systems and if so, what would make the biggest difference?

Some institutions lack the powers to fully benefit commercially from the investments that they make. For example, when we create a new busway or improve a railway station it is not easy to extend the envelope of the project to develop a precinct that would catalyse further change in the area or to profit from land value uplift in the surrounding area. Similar is true for land development and roads.

If appropriate powers were available to all institutions then they would be able to develop schemes that better capitalised on the investment being made.

Network pricing: How we price infrastructure services impacts what we think we need

We're interested in your views on further opportunities to improve network infrastructure pricing.

15. How can best practice network pricing be used to provide better infrastructure outcomes?

Best practice network pricing can ensure that the users cover the cost of constructing, operating and maintaining the network, which will then provide sufficient funds for best practice asset management.

Pricing can also be used to reduce demand on infrastructure (thereby lowering on-going operating and replacement costs), provided that alternatives are available. For example, increasing density with related urban and public transport planning can make it possible for people to live, work and play without needing to rely on a car all the time.

Network pricing often needs to be introduced alongside other changes that allow a different way of living.

Regulation: Charting a more enabling path

We're interested in your views on further opportunities to improve regulation affecting infrastructure delivery.

16. What regulatory settings need to change to enable better infrastructure outcomes?

A more national view would be helpful as part of the RMA reforms.

The natural environment may be negatively affected in some places to allow for the creation of resilient infrastructure and housing for the future of the country. At the same time the natural environment can be improved in other places to leave the country better off overall.

Is there a way that schemes can be allowed to offset their local impacts by delivering improvements in other areas? For example, a road cuts through some native forest but an equivalent carbon sync is immediately created by returning an area at risk of climate impacts to nature or by planting up low value non-productive land.

Additional information to support our development of the Plan

Section five in the Discussion Document is on the next steps. In this section, we're asking you for any additional comments, suggestions, or supporting documentation that we should consider in our development of the National Infrastructure Plan.

17. Do you have any additional comments or suggestions that you would like us to consider as we develop the National Infrastructure Plan?

Click 'Add another' to add multiple suggestions or comments.

Item 1

We have the following brief suggestions to assist with development of the National Infrastructure Plan. We would welcome the opportunity to discuss these topics in further detail.

Develop a shared vision for the future of New Zealand, to act as a north star for planning and decision making and to bring the population and government on the journey.

Develop a national land use plan that protects land for food production and sources of drinking water.

Develop a national spatial plan that considers worst case scenarios for climate change related impacts and natural hazards.

Develop a national resilient infrastructure plan based on this spatial plan.

Develop a dynamic digital system for keeping Infrastructure Priority Programme project BCRs and programmes live and up to date based on changing data (so that projects on the shelf can be picked up off the shelf with minimal or no rework).

Seek consensus around and agreement from political parties to rules of engagement around infrastructure projects being selected from the National Infrastructure Plan and to selected projects not being cancelled should the government change.

Explore more collaborative and programmatic long-term ways of delivering infrastructure to provide continuity of work and give teams the opportunity to become more effective and efficient over time, with improved overall productivity.

Broaden the legislative powers of infrastructure commissioning entities and / or drive better collaboration between entities with the relevant powers so that we can capitalise fully on the value of investments being made through associated development.

Continue your drive for engagement with the public, as bringing voters on the journey of the difficult decisions that need to be made is critical, including getting the views of people who are not directly impacted by those difficult decisions but will have to paymore money towards infrastructure if those difficult decisions are not made.

18. Attach any documents that support your submission

Click 'Add another' to add multiple attachments in PDF format.

Document 1

No attachment

Thank you for your response

Thank you for providing feedback on our Discussion Document. We'll use your comments as we continue to develop the Plan. This will not be the only opportunity for you to provide feedback, but it is an important way to test our emerging thinking on the development of an enduring National Infrastructure Plan.

If you have prepared a submission on behalf of an organisation, you'll need to be an authorised *respondent* to make the final submission. If you entered a new organisation during sign-up, or your organisation does not already have a *Principal respondent* assigned, you will have been asked to nominate yourself or someone else for this role as you started this submission. Our team will have worked to verify these accounts allowing *Principal respondents* to manage access and assignment of requests for information to people within your organisation.

If you require any assistance please reach out to our team at inform@tewaihanga.govt.nz.