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

Organisation: **Higgins Family Holdings Limited**

Reference: **NIPC24-0003012** | Submitted: **10/12/2024 10:22 am** | Submitted by:

Summary of information submitted

Page 1 - Introduction

NIPC24-0003012

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

NIPC24-0003012

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?

Reliable energy supply – electrical and transport.

Abundant reliable energy infrastructure is the key to the future prosperity of the country. Without it the economy will continue to contract, and other needed infrastructure will become increasingly unachievable or even not needed.

Ports, shipping, roads, rail and Information/data – getting our products to market.

As a country we need to be able to move resources and get our products to market in a reliable and efficient manner. Shipping and data are key ingredients to achieving this, the infrastructure plan needs to ensure we plan to have an abundance of these resources.

Waste and fresh water management

It appears that much of our waste water facilities and fresh water infrastructure have fallen into disrepair or under current law are no longer fit for purpose. Avoiding waste though renewal of degenerated infrastructure and the rapid deployment of water meters for community users should be a priority. Every litre of fresh water saved at a dwelling level is one less litre that needs treatment at the waste water treatment plant. The plan needs to consider – "are our environmental rules fit for purpose?", that is, are we aiming for a Rolls Royce solution when a hatch back will provide a suitable solution.

Building infrastructure – Schools, Hospitals, public property

Must of the public property portfolio is reaching end of life where maintenance cost out strip replacement costs. – The infrastructure plan must include the use of standard, modular and transportable designs couple with factory based construction to achieve efficiency and rapid deployment. Maintenance and replacement needs to be designed in.

Natural and manufactured resources

Aggregates, concrete, steel, processed timber, heavy transport fuels, and petroleum derived products.

No infrastructure plan can be delivered without access to the raw materials needed. The infrastructure plan needs to include how we will facilitate the production or source of these

materials and how much we will need to achieve each component of the plan. Laws and rules will need to align and enable access to the required materials.

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

This is busy work – the plan needs to stay focused on what we need to achieve.

Work that benefits the community as a whole will benefit Māori. Rules that make it easier to access required raw materials and locating production facilities in areas close to natural energy or material sources will provide growth opportunities for small communities currently being hit by plant closures.

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 key risk is spending money on projects that will not grow the economy or improve efficiency.

Globally it is easy to see the economies that are successful and growing, they are the ones that are ensuring they have sufficient energy to enable growth, China and India are good examples.

With growth comes additional funds to enable secondary priorities to be achieved.

Laws or rules that inhibit productivity or even inhibit getting anything done at all.

Instability of government policy which can change from government to government. This limits outside investment and often wastes investment when policy radically changes.

Not making fundamental changes and standardizing requirements to the RMA. We need one set of standardized rules and expectations across the country. This will remove different interpretations and requirements by different Regional Councils. There needs to be more use of permitted activities if standard conditions are met.

Financial Resources

The key concepts to remember are;

- *The more risk you pile on the people doing the work the more you can expect to pay.*

- *Failure to involve the people actually doing the work during planning will result in cost overruns.*
- *Time pressure to complete costs.*
- *Consultants are not always value for money.*
- *Good engineers are critical.*

Project management and delivery is all about risk management and this is always reflected in the price. Creating an environment where those delivering the work are free from unnecessary red tape improves cost and efficiency and encourages greater participation.

Grow GDP to reduce the spend percentage on needed infrastructure by ensuring that it is easy to establish and run a business in New Zealand and that the needed resources and energy requirements are available at a globally competitive price.

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?

The National Infrastructure Plan will provide visibility for what's planned and what's financed, but this will only be of benefit if the plan is not subject to change with each new government.

Breaking large infrastructure into smaller financed bundles does work but only as long as the next part of the bundle is ready to go at the completion of the previous one. Failure to do so is inefficient resulting in a loss of skills and additional establishment costs. In general companies will accept lower margins for long term stability of work. Changes to delivery teams should only be necessary where the delivery team has failed to perform to the accepted level.

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?

Looking at the current forecast it appears that far too much money has been allocated to transport (assuming roads) and not enough to energy security. While roads will add some efficiency it will not necessarily provide the same increase in GDP compared to adding additional dispatchable energy which will make New Zealand products more competitive globally.

Equally the communication spend seems inadequate given the opportunities developing in the information technology space, a space that is not affected by New Zealand's geolographical isolation assumming we have sufficient connectivity and power to run modern technology requirements.

Page 3 - Capability to plan and build

NIPC24-0003012

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?

It is apparent that "asset management" is deficient at both local and central government level. Major assets have been left to degrade to a level where it is a significant cost to bring them up to a suitable level, the infrastructure plan needs to address this and provide visibility to the public and service providers. Knowing in advance what central and local governments are planning to do over the next 10 or so years will provide an incentive for providers to invest to meet the projected requirements.

To remain relevant the infrastructure plan must be deliverable and not subject to constant change. At present local body plans are of such poor quality that they cannot be relied on to make investment decisions.

Lack of forward infrastructure planning in for example roading means that providers do not start planning until tenders are released. This means that raw materials, skilled people and equipment are not in place prior to being needed. In many cases aggregates need to be carted great distances because there is no way to get a resource consent in time, these costs are added to the tender. Locating suitably experienced personnel means that often the best people are not available at the start of a project and key roles are filled by less experienced or skilled proxies.

7. How should we think about balancing competing investment needs when there is not enough money to build everything?
The first consideration should be, "will this increase GDP?". Remembering that increasing GDP decreases the percent cost of infrastructure builds.

"Will the infrastructure improve efficiency and aid GDP?"

"Is this necessary for public health?" This includes things like fresh water supply and waste water treatment, hospitals, and social housing.

Is it more cost effective to replace the asset than to maintain it because it meets one or more of the criteria above.

"Can this be financed privately or by user pay?" for example all reticulated water use should be user pay with the price set by central government and a percentage returned to central government to be used as finance loans to councils with significant issues.

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?
Always involve the people charged with delivering the project in the planning stage. They can contribute far more expertise than even the best engineering consultancy firms.

Keep contracts simple and standardized – A significant roading contract can run to 3 or more volumes, the first 2 volumes push all of the risk onto the contractor and contribute a significant portion of the cost. The last volumes are the drawings and specifications which show how we want the job to look on completion and are the most important part to the contractor.

Office bureaucrats are not hands on and never have sufficient experience on the actual delivery of contract works. Involving the physical works contractors and getting agreement on the specification and delivery time table creates buy in which is far more efficient and less likely to result in unexpected costs due to planning errors.

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

We need to train more Engineers and Project Managers. Industry has proven its self capable of training and delivering skilled workers (builder, roadworkers etc) if there is a visible plan of work ahead of it. However those with the necessary technical skills to plan and deliver complex jobs are always in short supply. This is because projects are not feeding though to delivery suppliers in a planned manner and people with these skills are in demand globally, any delay between jobs results in loss of this talent pool usually overseas.

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?

Share the risk – loading it onto the contractor means it is priced into the job at a worst case price.

Minimize the bureaucracy such as inappropriate RMA, health and safety, and reporting requirements that aren't fit for purpose.

Involve the head contractor early to ensure planning, design and delivery is agreed.

Never use lowest price conforming tender – This method ensures contractors go in low with the view to collecting every variation possible to achieve a suitable margin. Every project has some design issues and these result in cost overruns.

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?

It is evident that asset management is good in some areas and very poor in others particularly at local body level. Legislation is probably needed to ensure local bodies meet basic asset management and asset renewal requirements. The infrastructure plan must cost, plan and enforce routine asset management so that routine works are not deferred or are patched up with low cost short life repairs due to money being diverted elsewhere.

Successful private business are aware of the need to maintain and replace assets every year though their CAPX programmes. These programmes list all desired expenditure and then distills them down to must do and nice to have. Must do are approved because if they are not done the asset will become a liability, nice to have are only approved if there is sufficient money in the budget and they will improve efficiency.

Where there is a shortfall between must dos and budget available then the process of renewal and replacement is not being managed correctly. Cuts in the budget of other parts of the operation are taken to ensure must do jobs are undertaken. Local and central government needs to take the same approach rather than letting assets become liabilities.

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?

All infrastructure in New Zealand is at risk. We need to build resilience into new infrastructure and be open to accepting older infrastructure loses. Where we decide to build back we must build back stronger. Unless the infrastructure is critical to energy or public health making existing infrastructure more resilient should only be undertaken

when it is replaced or there is a clear immediate risk that can be mitigated, for example a road is being washed out can be supported by a rock breakwater to prevent its loss.

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?

New Zealand's carbon emissions are very small – In one day Asia emits as much carbon as New Zealand does in a year and Asia shows it has no intention of stopping or slowing their increasing carbon output. It is an unfortunate fact that we as a country have no impact on global emissions but will feel the effects if any eventuate. From a risk management point of view our best option is to focus on building resilience during the asset replacement cycle and where viable during the maintenance cycle.

The infrastructure plan should not be required to consider emission reduction but can contribute by minimizing waste, using standardized construction techniques, ensuring new assets are built to last and are easy to maintain and refit. An example is the construction of concrete roads which are used extensively overseas. While the initial cost is slightly higher than an asphalt road it's whole of life cost is lower. Longer life and less maintenance reduces cost and overall emissions.

As energy is a critical infrastructure need – gains in carbon reduction can be achieved though building geothermal plants to provide dependable base load to the grid and reduce the need to use the coal plants.

The use of intermittent energy sources should not be allowed to go above 30% as they destabilize the grid and will require even more investment in the grid to mitigate their increased use. These products also have a poor whole of life carbon footprint and are fragile.

A watching brief on the development of the modular nuclear reactors is needed as the country may need to consider this option in the future if we want to remain globally competitive.

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?

Our infrastructure institutions are fragmented, - what does Te Whatu Ora know about building a new hospital, the answer is nothing so they must buy in consultants that tell them what they need. Each design is bespoke and this costs. NZTA builds roads and roading infrastructure, while they maintain roading specifications they rely on consultant engineers to design, tender, and manage builds. From experience each roading design is bespoke and the design is usually a minimum cost type which requires extremely tight tolerances (adds cost) and little consideration for whole of life return on investment (short life high maintenance). Where does this driver come from?

While the old public works ministry had many faults the current system is not delivering the results the country needs at a cost we can afford. Is there a middle ground between the old public works and the current infrastructure management system?

In electricity, private companies, while legislated do not have an incentive to over build electrical capacity as this will reduce profit. They are quite happy to add intermittent energy which destabilizes the grid because they are not required to contribute to the grid upgrades. The grid upgrade cost is passed to the consumer which is reflected in the cost of our products reducing our global competitiveness and limiting new business opportunities.

The infrastructure commission should investigate new infrastructure delivery models with a view to consolidation and standardizing infrastructure delivery.

There is also an argument to be had that central government should re-enter building electrical generation as a disruptive force to the gentailers.

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?

The more risk is passed to the service delivery company the higher the price. Share the risk.

The excessive red tape contained in tenders requires companies to maintain skilled staff capable of interpretating the risks associated with the contract, this adds to overhead within the organization and is reflected in the price. Smaller capable companies are unable to participate.

Continually changing specifications adds cost. – each consultancy firm or council has different requirements which they change frequently. This requires skilled staff to evaluate each tender line by line to ensure all construction risks are identified. There is little standardization between regions, councils, or consultants.

In complex projects there appears to be too many levels of management. Experience has shown that flat management structures appear to deliver superior outcomes. - SH25A Taparahi rebuild provides a useful example of how all significant builds could be managed.

Access to the raw materials - In roading for example it is not possible to establish aggregate processing near the project site due to the time it takes and the associated costs. Cartage becomes a significant cost as a percentage of the overall contract price.

Placing a concrete processing plant on a wind farm development to reduce cartage often runs into RMA or local council rules adding additional cost.

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?

Significant overhaul of the RMA to enable infrastructure builds and access to key raw materials.

Aligning council plans to provide consistency from region to region by specifying at central government level what are permitted activities if specified requirements are met.

Requiring and enforcing local councils to maintain a costed and approved infrastructure asset maintenance and replacement plan to prevent underspending and asset degradation.

Preventing different governments from changing the national infrastructure plan if it causes degradation of existing infrastructure though lack of maintenance or deferred replacement.

Stream lining the Health and Safety at Work Act to incorporate risk based rather than prescriptive solutions to managing safety along with the concept of personal responsibility for maintaining your own and others safety. Recent court decisions are responsible for the proliferation of road cones and excessive temporary traffic.

Joke – how many people does it take to change a street light bulb? – 7

An electrician, a hiab operator, an observer from the lines company or supervisor, a minimum 3 man team of traffic controllers and their equipment, a RCA person to approve the traffic management plan.

Page 6 - What happens next?

NIPC24-0003012

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

It's a big job - good luck.

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.