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

Organisation: **AMSAAM Limited**

Reference: **NIPC24-0003085** | Submitted: **10/12/2024 04:56 pm** | Submitted by:

Summary of information submitted

Page 1 - Introduction

NIPC24-0003085

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

NIPC24-0003085

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?

To develop a 30 year focus you need to think way beyond the 30 years. Most public infrastructural assets will have a life expectancy between 60 and 120 years. Some of the logic in your discussion paper (e.g. renewal versus depreciation) has failed to recognise this and for some situations, is inadvertently promoting investment before it's needed!

We have the ability to model with a reasonable degree of accuracy performance of infrastructural network components way beyond 30 years and you need to do this to Improve the accuracy of predictions for the next 30 years. Many agencies develop their 30 year projections simply by extrapolating current expenditure. Even coarse models based on the construction year of existing components are capable of giving a better investment projection than this!

While in my career I have been responsible for the full suite of local authority infrastructural assets most of my comments in this submission will have a transportation asset focus.

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

Maori have good perspectives on intergenerational equity and have different perspectives to some of the traditional technical views on treatment for water and waste. I had the fortune of being Project Manager on a wastewater treatment plant which involved extensive consultation and a Joint Tangata Whenua Council Wastewater Treatment Committee. The outcome was a treatment plant that was significantly cheaper than the treatment approach that would have been adopted without the input from the Tangata Whenua and achieved in the first stage (secondary treatment) in a year what would have taken two stages of the original concept over a decade to achieve. When operating costs were taken to account Secondary treatment was able to be built and operated at $1 million less per annum than what stage I (primary treatment only) of the original concept would have cost. The end result was millions of dollars of savings to the community.

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 ability of existing infrastructure to cope with additional demand generated by new infrastructure being constructed now.

When considering new capital investment awareness of the capacity of the existing receiving Infrastructure and whether or not it can cope with the increased demand as essential.

Another common failure is to consider the additional annual operating costs of the new infrastructure. Many organisations and agencies make no allowance for this. (for transportation assets it is typically between 3 and 4% of the capital investment total).

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?

Better understanding of the long-term need of keeping existing infrastructure in the appropriate condition.

Create synergy opportunities through awareness of other projects in the vicinity and in some cases opportunities for joint delivery.

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?

The pipeline of technical experts developed by government agencies such as the Ministry of Works and Development started to dry up in the 2000's. There are some lost skills that are starting to cost us dearly and the people who don't have them don't realise they don't! While we need to improve all phases of our infrastructure delivery we need to seriously consider how we up skill our delivery workforce and those that manage them to ensure the right treatment selections are being made and optimal whole of life performance and costs are being achieved.

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?

Projects generally move through three phases: (1) concept planning and initial approval, (2) detailed planning and design, and (3) construction, maintenance, and operations. Most investment is incurred In construction, maintenance, and operations yet the ability to save money diminishes as you move from phase 1 to phase 3. Spending time in phase 1 to to ensure the most appropriate solution is identified is critical. Included in this phase is also the decision of whether or not to proceed! In phase 2 (design) it is important to consider

whole of life costs. Sometimes the lowest capital investment requires the highest operating costs, making it the most expensive option in terms of whole of life costs.

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

Work to a decision hierarchy that ensures we achieve optimal whole of life costs for existing infrastructure we continue to need and applies a sensible priority ranking for new projects taking into account local needs and issues. This may require setting aside minimal spends in some areas.

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 lack of sufficiently skilled technical leadership in all aspects of infrastructure management and delivery is starting to compromise the ability to deliver quality enduring Infrastructure.

The skill set in some construction crews Is not up to scratch and the availability of skilled personnel Inclined agencies with the ability to challenge and hold poor contractors to account is greatly diminished or non-existent in some areas. This means work is often not specified correctly and the clients have limited ability to properly evaluate tender submissions. Many contracts are simply awarded on price alone and client supervision is minimal.

One improvement would be to ensure contract quality plans and management systems become a warrantee for workmanship and individuals cannot evade accountability simply by changing business names.

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

1. *Incentivise proper training - perhaps subsidise training to encourage agencies managing and working on public infrastructure to generate a pipeline of suitably skilled personnel. This could be funded by using some of the GST gathered from local authority rates!*
2. *Identify the few remaining technical expert practitioners in applying chip seals and use these folk to retrain current operators in the largely lost skill set of applying single coat seals. (The old statement of "The cheapest way of maintaining a sealed*

road is sealing it at the right time" is still true. about 60% of local authority road expenditure is on sealed roads.)the

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?
I suggest focusing on "return for investment" rather than simply financial "return on investment" would help. Discount factors favour short-term horizons and we are paying for cheap options In many situations.

Make consideration of whole of life costs a key feature in the decision-making process.

Page 4 - Taking care of what we've got

NIPC24-0003085

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?
Make consideration of the whole of life costs a critical element of the decision-making process

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?

Elevate resilience in the psyche of designers

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?

include carbon emissions in the whole of life cost analysis

Page 5 - Getting the settings right

NIPC24-0003085

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?

increasing the technical expertise and availability at all levels

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?

1. *make whole of life costing a key feature*
2. *keep the network in mind when calculating project viability*
3. *make whole of life costing part of treatment selection process*

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?

1. *hold contractors accountable to their quality management systems as a warranty*
2. *increase personal liability for workmanship*
3. *Incentivise the regeneration of a pipeline for Technical experts in skilled workers*

Page 6 - What happens next?

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

On a roading networks I'm very concerned about the skill set is when that has been lost in terms of applying single coat seals. The "go-to" for contractors are two-coat seals which easily meet contract requirements but are often not the optimal choice for the road component they are being applied to. As a consequence there are now more road pavements being renewed due to surface failure than because of failure of the underlying pavement. For example: reducing the life of the pavement from 70 years to 50 years increases the whole of life costs by 40%. New Zealand cannot afford to continue down this path!

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.