



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

Organisation: **ConCOVE Tūhura**

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Summary of information submitted

Page 1 - Introduction

[NIPC24-0003100](#)

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](#)

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?

One of the most pressing challenges is the persistent shortage of skilled workers across the vertical and horizontal construction sectors. In a talent-scarce market, and as the current workforce ages, this issue significantly constrains infrastructure delivery, leading to cost overruns and project delays.

The National Infrastructure Plan must prioritize a comprehensive workforce strategy that is closely aligned with educational delivery to develop and retain skilled tradespeople across diverse sectors. This strategy should also address future workforce needs associated with mixed construction methods, offsite manufacturing, increased digitization, and other emerging technologies and industries.

The Vocational Education and Training (VET) system must be central to solving this issue. A sustained, strategic investment in VET is needed, alongside a coordinated approach to workforce development that aligns with the projected infrastructure pipeline.

Beyond addressing skills shortages, a national workforce strategy must focus on reshaping workplace culture to ensure inclusivity, safety, and respect. This includes combating sexual harassment and creating environments where women and other underrepresented groups can thrive without facing hostility or discrimination.

Moreover, ministries must collaborate more effectively during the planning of capital programs, with a particular focus on involving education and training providers early in the process to prevent gaps in workforce readiness. For example, in large projects like the Dunedin Hospital, earlier engagement with employers and training partners could have ensured the availability of the necessary skills before construction began.

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

No response provided

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?

No response provided

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?

No response provided

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?

While the current focus on infrastructure investment is important, the workforce shortage must be addressed as a foundational problem. This includes ensuring that workforce development and education are connected and central to planning and execution. We recommend the development of an integrated training pathway for civil construction, which would connect on campus and on-the-job training to ensure a steady pipeline of skilled workers.

The boom-and-bust cycle in construction training is a systemic challenge. Without off-job training facilities, skills development stalls during economic downturns. This is particularly problematic in public infrastructure, where consistent investment is critical to meet

community needs. Establishing a central training facility for infrastructure skills, including those specific to vertical projects, would mitigate this issue.

Gender diversity in the workforce, and safety of women and other genders is a pressing issue. Low participation of women in civil construction in particular reflects missed opportunities for a broader talent pool. Strategies to attract and retain women in the sector, including flexible work hours and improved workplace culture, should be incorporated into the National Infrastructure Plan.

To address gender diversity effectively, the Plan must prioritise creating supportive and inclusive workplace cultures. These should actively dismantle the existing barriers women face, such as harassment and the expectation to "fit in" by adjusting their behaviour or appearance. A sector-wide cultural change initiative, grounded in frameworks like ConCOVE's kaupapa Māori and tauwiwi Theories of Change for a bystander culture, could be critical for long-term improvement.

Page 3 - Capability to plan and build

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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?

No response provided

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

No response provided

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?

Leadership in infrastructure projects must go beyond project design; it must prioritize the development of the workforce. The industry needs leaders who are committed to building collaborative teams, fostering a culture of safety, and focusing on long-term workforce development.

Leaders must have the knowledge and skills to champion cultural change by modelling inclusive behaviours and promoting interventions like bystander training. This could involve integrating specific evidence-based training for inclusivity and workforce safety into formal and information leadership programmes, ensuring that workplace environments are proactively managed to prevent harassment and foster belonging.

A significant barrier to better leadership and project delivery is the lack of skilled workers. Training should be factored into project planning to ensure that the workforce is prepared ahead of time, and leaders should advocate for a more coordinated approach to training across the entire sector.

- *Leaders should adopt a procurement approach that mandates workforce training commitments in tender specifications. This ensures that every project contributes to building workforce capacity and aligns training investments with long-term infrastructure needs. For instance, specifying that a portion of project budgets or timelines be allocated to on-the-job training or apprenticeships would establish consistent training opportunities across the sector.*
- *Close cooperation between training providers, purchasers, industry, unions and a VET research organisation (like ConCOVE Tūhura) is essential to the success of this approach. Such collaboration ensures that training programs are aligned with the practical demands of projects and that workforce development initiatives address both current and future skill shortages.*

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

Building a capable and diverse infrastructure workforce requires a coordinated national strategy supported by substantial funding and sustained engagement with industry. Addressing the shortage of civil workers, in particular, must be a core focus of the National Infrastructure Plan. Key elements of such a strategy include:

- *Significant and ongoing engagement with industry*
- *Substantial and sustained funding at scale to develop multiple training options.*
- *A large campus for training at scale to develop multiple training options.*
- *The training campus should be part of a comprehensive, integrated pathway that includes initial exposure to the industry, work-readiness programs, entry-level training, and ongoing skill development. This approach ensures a seamless progression for workers entering and advancing within the infrastructure sector.*

Workplaces must be supported in offering flexible working conditions to accommodate a wider range of workers, including those balancing family responsibilities.

To address the skills shortage, the Plan must support the development of a diverse workforce. This includes addressing barriers to entry for underrepresented groups, particularly women and those with caregiving responsibilities. The Plan should promote inclusive recruitment practices and highlight civil construction as a viable and rewarding career option for a wider range of people.

Recruitment campaigns should not only target diversity in numbers but also support workplace transformation to ensure that once hired, diverse employees stay and thrive. This includes redesigning workplace systems, such as providing gender-inclusive facilities and addressing unconscious biases in work assignments and career progression opportunities.

ConCOVE strongly recommends the implementation of a funding mechanism such as the levy adopted in Western Australia, and diverted to the Construction Training Fund. This leverages every project over a specified amount to a centralised fund that supports future workforce development. ConCOVE is also undertaking research in this area now and will ensure the insights are shared with Te Waihanga.

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?

No response provided

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?

No response provided

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?

No response provided

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?

No response provided

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?

Establishing an Industry Levy to Support Workforce Development

An industry-wide levy could provide a reliable funding mechanism to address several critical needs:

- 1. Retaining Staff During Economic Downturns: The boom-and-bust cycles in construction often lead to workforce layoffs during downturns, resulting in a loss of skilled talent. A levy-funded mechanism could help retain staff by subsidizing training or upskilling during these periods, ensuring workforce readiness when demand rebounds.*
- 2. Research and Innovation in Vocational Education and Training (VET): A portion of the levy could fund research and innovation to keep the sector ahead of emerging trends and technologies. For example, ConCOVE (Construction and Infrastructure Centre of Vocational Excellence) serves as a model research organization, connecting and aligning industry, learners, and vocational education.*
- 3. Capital Costs for Training Infrastructure: Significant investments, such as equipping large-scale training campuses with specialized equipment, often fall outside of*

standard budgets. A levy could provide the necessary resources to establish and maintain such facilities.

A key barrier to achieving better value is the shortage of a highly skilled workforce. To overcome this, substantial investment in workforce training and education is essential. This investment must go beyond short-term solutions, such as relying on migrant workers, and focus on developing a local workforce with the necessary skills to meet long-term infrastructure needs.

The Plan should incorporate provisions for procurement models that require contractors to invest in workforce training. This could include stipulating training commitments in tender specifications to ensure that projects contribute to building workforce capacity.

Another avenue for better value is through the adoption of new technologies and techniques, which could improve productivity and reduce costs. The Plan should prioritize innovation, including digital skills and automation, which would help alleviate pressure on the skilled workforce. While it may take some creative thinking, exploration into how some of the innovations in the adjacent sectors, such as offsite manufacturing, could be adapted for infrastructure projects.

To achieve value from investments, workplace culture improvements must be recognized as cost-saving measures. Reducing turnover and absenteeism caused by hostile work environments can significantly improve project timelines and costs. Embedding a cultural shift within the VET curriculum and workplace practices will yield long-term economic benefits.

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?

No response provided

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?

No response provided

Page 6 - What happens next?

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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

The Plan should include a dedicated research and innovation function within the VET sector to support long-term skills development and workforce planning. This function should be tasked with identifying emerging skill needs, ensuring the workforce is prepared in advance of future infrastructure projects, and fostering collaboration between industry stakeholders, education providers, and government.

The Plan should also include clear mechanisms for monitoring the effectiveness of workforce training, ensuring that training investments lead to tangible improvements in workforce capability and employability. Educational programs should be designed not just to deliver qualifications, but to ensure that individuals are work-ready and equipped with the skills needed to succeed in the infrastructure sector.

In conclusion, the National Infrastructure Plan must fully integrate the Vocational Education and Training (VET) sector to address workforce challenges while fostering a cultural transformation within the construction and infrastructure sectors. This requires a coordinated approach to workforce development, both nationally and by region, that not only invests in training and education but also reshapes workplace culture to ensure safety, inclusivity, and respect. Addressing barriers such as harassment, lack of gender diversity, and outdated workplace norms is essential for retaining talent and enhancing productivity. By aligning training pathways with long-term infrastructure needs, embedding cultural change initiatives like bystander frameworks, and leveraging innovation and new technologies, the Plan can mitigate project delays, reduce cost overruns, and build a sustainable, capable, and diverse workforce for the future.

18. Attach any documents that support your submission

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

Document 1



[Te Waihanga infrastructure Trades Academy supporting info.pdf](#) supporting info added to the end of this document

Last modified 2024-12-10 15:50:58 pm, file size 163.51 KB

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.

2024 Infrastructure Trades Academy Provision in Aotearoa New Zealand

Without coordinated central planning and monitoring of Trades Academy¹ provision, we're not offering young people the opportunity to see infrastructure as a viable career path. Trades Academy programmes span several industries, with just over 15% of places in the construction and infrastructure sectors and just a fraction of those places specifically focused on infrastructure.

Most of the South Island and the entire East Coast² of the North Island are without Trades Academy provision in infrastructure. These regions are expected to continue to have high demand for a skilled workforce in infrastructure, especially given Te Waihanga's (Infrastructure Commission) National Infrastructure Pipeline Plan.

ConCOVE's report on workforce entry points highlighted the benefits of consistent exposure to support school leavers in transitioning into meaningful employment.

ConCOVE: [Where is the front door?](#)

[Workforce Journey Indicators](#)

