Concrete New Zealand Incorporated

Submission to

NZ Infrastructure Commission *Te Waihanga*

on the

Draft National Infrastructure Plan

6 August 2025

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New Zealand Infrastructure Commission
Level 7, The Todd Building
95 Customhouse Quay
WELLINGTON 6011

Dear Sir/Madam

SUBMISSION TO THE DRAFT NATIONAL INFRASTRUCTURE PLAN

Concrete NZ welcomes the **Draft National Infrastructure Plan** (NIP / 'the Plan') and commends Te Waihanga on a thorough and insightful document. We strongly support the Plan's core themes, particularly the clear-eyed focus on improving value for money, the critical emphasis on asset management, and the establishment of a sustainable and affordable investment pathway.

This submission builds on our previous feedback to the 'Testing our thinking' document. We note and appreciate that the language has evolved, and the NIP frames the core challenge as one of efficiency and value.

Our submission offers specific, evidence-based proposals to strengthen the NIP's recommendations. Our goal is to partner with the Commission to ensure the final Plan leverages the full potential of New Zealand's local material supply chains to achieve our shared objectives of a productive, resilient, and decarbonised Aotearoa.

INTRODUCTION

Concrete NZ is the voice of the cement and concrete industry, representing more than 500 corporates and individuals, including more than 200 concrete producing facilities. The industry spans cement manufacture, ready-mixed concrete, masonry, reinforcing steel processors, precast components including pipes and culverts, and experts in structural design and construction with concrete. More than 11,000 people are employed by the industry, which contributes more than $1.25 bn to GDP (March 2023, in March 2023 prices). This document constitutes Concrete NZ's submission on the consultation relating to the "Draft National Infrastructure Plan".

PART A: CEMENT AND CONCRETE INDUSTRY CONTEXT

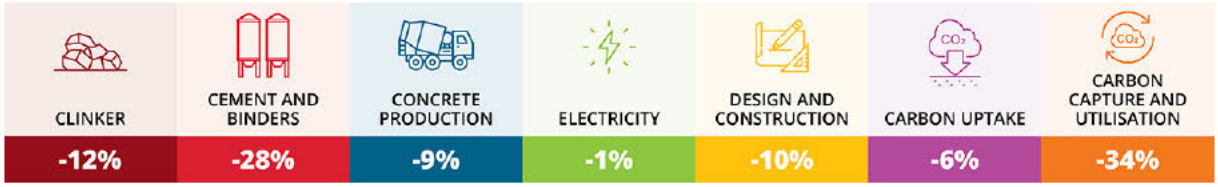
As a critical construction material, concrete delivers resilient buildings and infrastructure, including bridges, tunnels, clean water, clean and renewable energy, and resilience to natural hazards, including mitigating the effects of climate change.

Concrete is strong, durable and versatile – it can be formed into almost any shape. Compared with other building materials, concrete offers better fire safety, flood resilience, greater noise reduction, and more efficient heating and cooling. It can be reused, repurposed and recycled at the end of life of a building or other structure. For many applications there is no alternative to concrete.

The New Zealand cement and concrete industry has committed itself to a decarbonisation Roadmap, containing two main emissions reduction milestones as per the graphic to the right.

The industry's 2030 goal will contribute more than 400,000 tons of CO_2 emissions reductions annually to the government's overall goal.

Implementation of the Roadmap is already underway. Concrete NZ reports on progress via its sustainability reporting as well as regular stocktakes for the industry. The Roadmap lists seven key "levers" for cement and concrete industry decarbonisation (percentages refer to net emissions reductions by 2050 relative to a 2020 baseline):



In August 2024—based on the findings of the Roadmap project—a research project funded by BRANZ (through the Building Research Levy), MBIE's Building Innovation Partnership and Concrete NZ has started work with stakeholders to maintain the positive momentum and enable the transformation of the cement and concrete industry towards Net Zero Carbon by 2050.

Concrete already appears in resilient and affordable infrastructure throughout New Zealand, delivering long-term societal and environmental benefits to communities. With recent investments in low-carbon concrete supply chains, the material can be delivered with reduced embodied emissions today.

Roads are an area in which concrete can add significant value. Infometric's November 2024 report "The Case for Concrete Roads", highlights the benefits of concrete roads, including cost-efficiency, de-risking oil price volatility, and lower whole-of-life embodied emissions versus asphalt.

https://cdn.ymaws.com/concretenz.org.nz/resource/resmgr/docs/cnz/c_roadmap_concrete.pdf

https://static.infometrics.co.nz/Content/Consulting/c_concrete_road_2024_full.pdf

PART B: DETAILED SUBMISSION

In summary, our suggestions seek to:

- mandate a material-agnostic and performance-based approach to material selection,
- recognise concrete's permanent carbon removal in lifecycle assessments,
- recognise that material selection is the first and most critical aspect of asset management, and
- mandate a resilience and durability assessment in material selection.

1. Driving Value for Money and Competition (Ref: NIP Section 1.2, 4.3)

The NIP correctly identifies that New Zealand gets poor "bang for buck" from its infrastructure spend, whether this is measured by service level, emissions reduction, or otherwise. We agree this is a critical problem to solve. The most effective way to ensure maximum value for infrastructure spend is fostering genuine material competition and adopting modern procurement practices that focus on whole-of-life value, not just upfront cost or embodied carbon.

- **Recommendation 1.1: The Plan should explicitly recommend a shift to performance-based material specifications.** The NIP calls for lifting the bar on project appraisal. A key barrier is the use of prescriptive material specifications that stifle innovation. Mandating a move to performance-based specifications would empower suppliers to compete on delivering outcomes—such as strength, durability, and lower carbon—at the best possible value. This directly supports the Plan's goal to "clear the way for infrastructure" by enabling, rather than prescribing, solutions.
- **Recommendation 1.2: The Plan should encourage a genuinely material-agnostic approach to infrastructure investment.** The Infrastructure Needs Analysis forecasts a moderation of investment in land transport, making it vital to maximise the value of every dollar spent. The current market is heavily dependent on a single roading technology (bitumen/asphalt). To introduce competition and secure better long-term value, the Plan should ensure that concrete roads are robustly evaluated on a whole-of-life cost basis. Independent economic analysis by **Infometrics (2024)**[1] demonstrates concrete roads are more cost-effective and present a lower financial risk. The report finds that over a 40-year life, concrete roads have a weighted mean cost advantage of **17.5%** over asphalt. Furthermore, with 100% of New Zealand's bitumen being imported, concrete's domestic manufacturing component offers greater supply chain resilience and price stability, reducing the fiscal risk for long-term projects.

[1] The Case for Concrete Roads, Infometrics (2024)

https://static.infometrics.co.nz/Content/Consulting/c_concrete_road_2024_full.pdf

2. Ensuring Policy Stability for Long-Term Delivery (Ref: NIP Section 4.5)

Concrete NZ strongly supports the Plan's identification of policy instability as a major barrier to efficient infrastructure investment. For the construction materials supply chain, the 'stop-start' approach tied to electoral cycles creates significant uncertainty, hindering long-term investment in local manufacturing capacity, workforce development and innovation. Industry cannot confidently invest to meet a 15-year project pipeline if that pipeline is subject to fundamental change every three years. A cross-party consensus on a core pipeline of nationally significant projects is essential to provide the private sector with the certainty needed to invest, ultimately improving deliverability and driving down costs.

- **Recommendation 2.1:** The Plan should recommend the establishment of a formal mechanism to secure cross-party agreement on a 10-15 year pipeline of nationally critical infrastructure projects. This would insulate foundational projects from short-term political shifts and provide the private sector with the certainty needed to invest in skills and capacity, improving value for money.

3. Ensuring a Credible and Accurate Decarbonisation Pathway (Ref: NIP Section 3)

We support the Plan's focus on decarbonisation as a key driver of future investment. Our industry is fully committed to this transition, as detailed in our Concrete NZ Net-Zero 2050 Roadmap. However, for the Plan's analysis and forward guidance to be accurate, it must be based on a complete understanding of the carbon cycle of the materials it relies on.

- **Recommendation 3.1: Carbon modelling for infrastructure investments must account for the permanent carbon removal achieved through concrete carbonation.** In New Zealand, a critical process is still often overlooked: the natural and permanent sequestration of atmospheric CO_2 by concrete through carbonation. This is a fundamental part of the material's lifecycle and it is recognised by the IPCC. Excluding this uptake skews whole-of-life assessments and undercuts the credibility of any carbon accounting involving concrete infrastructure.

  For a project's life cycle assessment to be robust, it must reflect complete and accurate carbon flows. We can support Te Waihanga and infrastructure delivery partners with comprehensive international and scientific data on carbonation. This is particularly relevant for low-emissions electricity sources such as hydro, wind, and geothermal — all of which rely heavily on concrete. In these cases, material choice has a direct bearing on the lifetime emissions per kilowatt hour of energy produced.

4. Reforming Financial Appraisal to Maximise Long-Term Value (Ref: NIP Section 5.3)

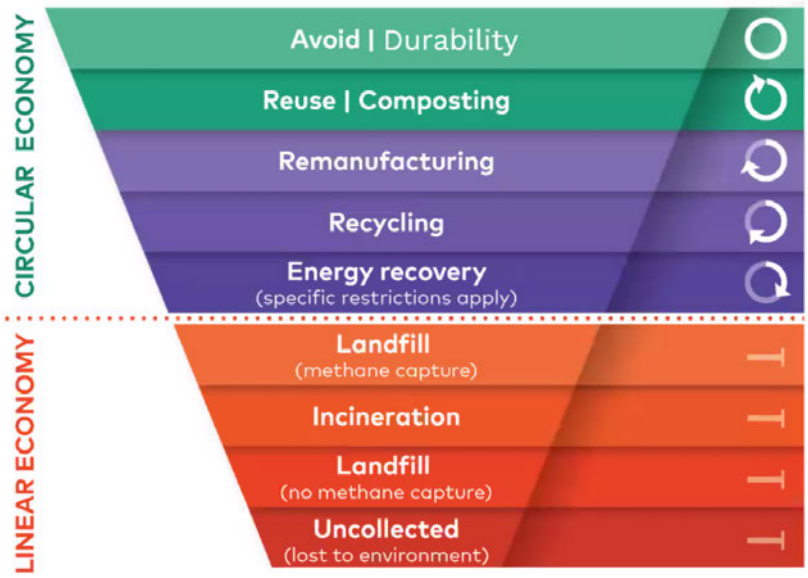
We support the Plan's focus on lifting the bar for project appraisal to address the poor return on infrastructure spending. However, a fundamental flaw in current financial modelling undermines this goal. The conventional use of financial discount rates in project evaluation systematically favours options with low initial capital costs, even if they incur significantly higher long-term maintenance and renewal liabilities.
This practice creates a 'maintenance mortgage' where an ever-increasing portion of future budgets is consumed by servicing existing, less-durable assets, leaving less capital for new, value-adding infrastructure. It directly contributes to the poor 'bang for buck' identified in Section 1.2 of the Plan and runs contrary to the core principle of whole-of-life value.

- **Recommendation 4.1:** The Plan should recommend a formal review of the financial appraisal and discount rate methodologies used in many public infrastructure business cases. The objective of this review must be to develop a framework that prioritises whole-of-life value and maximises the long-term quantity and quality of infrastructure delivered per dollar invested, rather than simply minimising upfront capital expenditure.

5. Strengthening Asset Management Through Material Choice (Ref: NIP Section 5.4)

We strongly endorse the Plan's theme to "Start with maintenance" and the recommendations to improve asset management planning, performance reporting, and assurance. This directly addresses the legacy of deferred maintenance that plagues New Zealand's infrastructure.

- **Recommendation 5.1: The Plan's asset management framework should explicitly recognise that material selection is the first and most critical act of asset management.** The lowest whole-of-life cost is achieved by selecting durable, resilient materials from the outset. The Plan's recommendations for asset management (Rec 18, 19) will be most effective if they drive decision-making that considers the long-term maintenance burden. Specifying concrete for critical infrastructure is a direct and proven way to enhance resilience to natural hazards and reduce the ongoing operational expenditure that strains public finances.



(source: thinkstep-anz)

6. Building a Resilient Aotearoa: From Acknowledging Risk to Embedding Resilience (Ref: NIP Section 5.4)

Concrete NZ strongly supports the Plan's identification of resilience as a critical investment driver, particularly in response to rising natural hazard risks. The statements that "The cost of responding to natural hazards is rising" and that "Protecting infrastructure against risks is an asset management challenge" are points we wholeheartedly endorse. The Plan correctly diagnoses the problem; our recommendation is to strengthen its prescription for the solution.

For this principle to be effective, the Plan must go beyond simply budgeting for risk and actively promote the selection of inherently resilient solutions during project appraisal. Resilience is significantly influenced by material choice made at the design stage. Concrete is durable, flood resistant, and non-combustible, giving it a foundational advantage in building infrastructure that can withstand New Zealand's specific hazards.

- **Recommendation 6.1: The Plan should require that project appraisal (Section 6) and long-term asset management plans (Rec 18 & 19) include a specific 'Resilience and Durability Assessment'.** This assessment must evaluate material choices based on their quantified, whole-of-life performance against relevant natural hazard risks. By making this an explicit and mandatory part of the evaluation process, the Plan would ensure that the most durable and lowest-risk materials are prioritised for critical infrastructure, translating the ambition for resilience into tangible, long-lasting assets on the ground.

PART C: CLOSING REMARKS

Concrete NZ appreciates the opportunity to provide feedback to the New Zealand Infrastructure Commission. While the cement and concrete industry accounts for less than two percent of New Zealand's gross greenhouse gas emissions, it plays a vital role in enabling climate-resilient infrastructure and supporting the construction of renewable electricity assets. The sector has shown clear commitment to decarbonisation through investments in technology and low-carbon supplementary material supply chains. The Net Zero Roadmap and subsequent research efforts are designed to provide a solid foundation for further emissions reductions. Though the industry's share of national emissions is relatively small, every contribution matters and should be explicitly acknowledged in the National Infrastructure Plan.

Yours faithfully

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CHIEF EXECUTIVE