Submission Infrastructure Commission

[redacted] 9.12.24

Please note that my responses mostly consider transport infrastructure and its connections to broader urban systems (my area of expertise).

Q1: Most critical challenges, next 30y

What appears as the most critical challenge is achieving climate neutrality and leaving no one behind, and for that: implementing an evidence-based approach to delivering the right infrastructure at the right place.

This is a challenge for four main reasons:

1. **Lack of strategic ambition** –the current Government Policy Statement on land transport (GPS) constitutes a significant step backwards in terms of climate action, inclusive transport systems, liveability, and value for money[1] by:
    a. Prioritising driving and road freight
    b. Relying on emissions trading schemes and fleet electrification
    c. Perpetuating car-dependency by facilitating greenfield development accompanied by road infrastructure
    d. Signalling cuts to funding for walking, public transport, and cycling
2. **Poor policy and governance track record** – implementing the policies as of 2023 would mean, in 2035:
    a. Persistently low shares of public transport, walking, and cycling
    b. A growth in the use of energy- and carbon-intensive modes (+18% vehicle*km travelled by road and +41% in domestic aviation, between 2019 and 2035)
    c. Low shares of rail and coastal shipping (respectively 13% and 12% of t*km)
3. **Poor track record in aligning action with strategic targets** – in terms of environmental impacts, while the current NDC are "almost sufficient" for a <2º world, the actions are judged as "highly insufficient" according to independent international assessment [1].
4. **Harmful investment prioritisation methods** - investment in environmentally efficient modes is undermined by the investment prioritisation rules established by Waka Kotahi the NZ Transport agency [2] in response to the GPS. These rules:
    a. Deprioritise walking and cycling improvements: unless they are a "necessary element of a roading project" p. 16, the best possible ranking is 9 (1 is the highest rank, 13 the lowest). That would be the case for projects that demonstrate a clear benefit, increase economic growth, and improve safety, and have a benefit-cost ration (BCR) above 6.

[1] See submission to the draft GPS signed by 88 academics specialising in fields including transport systems; public health; urban development / design; economy; health sciences; social sciences; environmental sciences; geography; political sciences; future mobility and foresight; energy transition; and community severance https://www.dropbox.com/scl/fi/86xsdwxvubggf0qfcs0gk/GPS_feedback_v6_2.4.24_submission.docx?dl=0&rlkey=o5o2oqe56potj03a8zi4qn0gk

b. Encourage building more roads – only roading projects can be ranked 1, apart from "major public transport [projects] that [support] urban development and housing growth and [responds to] a demonstrated need for higher capacity public transport." p. 15

Q2: How te ao Māori perspectives and principles could strengthen the approach to long-term infrastructure planning

Te Ao Māori perspectives and principles would be extremely helpful in strengthening the consideration of infrastructural outcomes such as liveability, heritage, and ensuring infrastructure responds to people's needs of function and experience. These could be reflected (thinking of urban infrastructure) through:

- Diverse urban settings and scales to feel welcoming to different people
- Public realm responding to the built environment and highlighting heritage, character buildings, and cultural narratives
- Vegetation that reflects local heritage and connects with surrounding green areas
- Provision of space and infrastructure for civic events, shade, shelter and sun
- Permeable streets, easier to cross, with lower speeds, clear lines of sight, and good lighting
- Universal design accessible to people regardless of age or disability.

Q3: Main sources of uncertainty in infrastructure planning

Your document states that "Our infrastructure requirements and expectations will change over the next 30 years, in ways we can't always predict" (p. 26). While this is true overall, I would like to highlight that key requirements and expectations are also expected to be with us in that time period. I am especially thinking about:

- The need for "rapid, far-reaching and unprecedented changes in all aspects of society" [3] to limit the magnitude of climate breakdown. The quote dates from 2018 and our efforts are very far from being "rapid, far-reaching and unprecedented"
- Aotearoa's responsibility to commit to a fair share of climate action: as an economically developed country, Aotearoa should commit to making a significantly higher effort in terms of decarbonisation compared to less developed countries.
- The need to address exiting inequalities – for instance, while Aotearoa ratified the Convention on the Rights of Persons with Disabilities (CRPD) in 2008, there is an "ongoing gap between the rhetoric and the reality that continues to lock in financial insecurity, poor access to housing, transport, employment and limited opportunities to exercise choice and control in the use of funded supports" for disabled people [4].
- The need to retrofit transport infrastructure in particular, which can (a) negatively affect relationships to place - e.g. through devastation of or barriers of access to coastlines previously seen as place of gathering of edible plants and bivalves; (b) isolate and cut off from social connections; or (c) reduce independence of those

who do not drive – especially older and younger people, and those on low incomes [5].

The uncertainties, in my views, mostly lie with the governance:

- **Will we have ambitious commitments to climate action, inclusivity, safety, liveability, and biodiversity?**
- **Will those commitments be acted upon, ensuring that investment is prioritised so to deliver the desired outcomes in an evidence-based way** (which is not the case now, for transport – as per above, active transport investments are for instance deprioritised despite a high economic value - New Zealand research shows that health and carbon emission benefits mean that active transport projects have high benefit/cost ratio (over 10:1 - even with conservative valuing of benefits) [6]. Also, as nothing in the existing policies requires comprehensively assessing the need for interventions, for instance by identifying the most discriminatory features of the network, improvements can be decided in an opportunistic way, possibly increasing the existing advantages and failing to address inequities.
- **Will the technical processes be reviewed to enable delivering on qualitative objectives?** The absence of specific requirements relative to quality and inclusivity of walking environments, for instance, overlooks walking experiences and their diversity [7–10].
- **Whose voices will be heard, when considering, designing, and prioritising infrastructure?** While you remind that OECD places Aotearoa 14th/26 in terms of transparent, systematic and effective stakeholder participation, I would argue that this depends on who is considered "stakeholder" and that certain demographic groups (children, older people, migrants, disabled people, or people on low income) are strongly under-represented in engagement.
- **Will there be long-term planning, beyond government terms, for instance regarding freight and passenger transport**? Such planning should take key and ambitious decisions such as for instance on the respective roles of rail and coastal shipping for freight, and energy- and space-efficient modes of transport for people. In the absence of such planning, we will continue justifying new roads by a predicted increase in truck volumes, for instance.
- **Will there be meaningful cross-sector coordination in planning investments**, for instance by ensuring that health-, well-being-, and inclusivity costs and benefits are accounted for when planning new transport infrastructure?

Q4 How can the National Infrastructure Pipeline be used to better support infrastructure planning and delivery across New Zealand?

As described in the previous points, the gaps are likely to include inhospitable infrastructure, that discriminates most against demographic groups already at a disadvantage (e.g., children, older or disabled people, those on low income), and that is not picked up through current assessment tools.

Beyond this, I would argue that a higher level gaps lays in delivering actively harmful infrastructure such as roading projects servicing greenfield developments, in the absence of assessment rules that could "red list" projects that lock in car-dependency and are inefficient in terms of land use.

Q5 Are we focusing on the right problems, and are there others we should consider?

As described above (Q3), I think that the approach should be more "decide and provide", rather than "predict and provide" – in other words, it should be intentional and ambitious, having a critical look at the infrastructure we inherited and potentially deciding not to renew it as is, or to repurpose it to achieve carbon neutrality, liveability, and inclusivity. Considering this, the focus should be on governance, ensuring accountability and transparency in the delivery against high level objectives such as carbon neutrality, inclusivity, or liveability.

The three identified themes – *Capability to plan and build; Taking care of what we have; and Getting the settings right* - read as doing what we have been doing but in a sounder and better informed way. To me, the focus should be on change and transformation – for instance:

- **How do we retrofit our car-centric transport infrastructure to achieve carbon-neutral mobility accessible to all** - i.e.: not relying only on EVs and on being able to travel just as we do, but with different vehicles)? How will we reallocate road space to public transport and repurpose parking located in urban centres, facilitating daily traffic movements to most congested areas? How will we do so ensuring that those who need to use a car – and them only – experience an easy access by car, while others' accesses are serviced by energy- carbon- and space-efficient modes?
- **How do we stop and reverse greenfield developments**, building housing and services in brownfields, and coordinating those with public transport services and walking and cycling networks?

Q6 What changes would enable better infrastructure investment decisions by central and local government?

As per the problematic uncertainties noted above (Q3), key changes in my opinion would be:

- **Ambitious commitments to climate action, inclusivity, safety, liveability, and biodiversity**
- **Transparent and evidence-based investment prioritisation methods so to deliver the desired outcomes**
- **Reviewing technical processes to enable delivering on qualitative objectives**
- **Ensuring that infrastructure design and prioritisation is done in a way responsive to the needs of different demographic groups**, with a special effort to hear from and codesign with those currently discriminated against – for instance children, older people, indigenous people, migrants, disabled people, or people on low income.
- **Establishing long-term plans, beyond government terms, for instance regarding freight and passenger transport**. Such planning should take key and ambitious decisions such as for instance on the respective roles of rail and coastal shipping for freight, and energy- and space-efficient modes of transport for people.

- **Ensuring meaningful cross-sector coordination in planning investments** – for instance, housing must be considered when planning for streets' redesign, failing which gentrification would remain as a form of negative fact of life and we will continue accepting that improved neighbourhoods are improved only for those who can afford to stay there.

As you rightly remind, roading is now the biggest sector of infrastructure investment in terms of capital annual - almost twice as big as education and almost 5 times the investment for other forms of transport. Clearly, the funding allocation needs to change to deliver what we need – climate action, inclusivity, safety, liveability, and biodiversity, all of which are negatively impacted by a transport system reliant on road vehicles. On the other hand, externalities of road transport such as space consumption, noise, air pollution, risk, congestion, or severance, further resulting in poor health and discrimination, need to be accounted for and re-internalised. Failing to do so means perpetuating subsidies to energy/space/carbon-intensive modes.

Q7 How should we think about balancing competing investment needs when there is not enough money to build everything?

I think that this is where a clear sense of priority, in terms of outcomes, comes in. I would name: climate action, inclusivity, safety, liveability, and biodiversity. In terms of transport, retrofitting the current infrastructure to provide efficient public transport services and accessible and pleasant walking and cycling infrastructure, delivers against all of those outcomes. Providing for driving negatively impacts on all of them.

Q8 Improving leaderships in public infrastructure projects

I observe a lack of transparency and accountability in public infrastructure projects. As Carron Blom highlighted, there is currently an "inability to fully deliver appropriate and relevant infrastructure outcomes over the long term", and strategic intent and day-to-day management of infrastructure systems are often misaligned [11]. We know that we need rapid and transformational change – this requires clearly linking what is done on the ground to strategic intents, in a clear and evidence-based way.

Q9 More capable and diverse infrastructure workforce

The workforce should include international experts specialising planning and delivering best practice informed projects delivering on the strategic objectives. In terms of transport, that would mean public transport / walking / cycling / rail- and coastal shipping experts. Aotearoa should embrace knowledge and experience from countries having more advanced transport systems, as opposed to dismissing it through exceptionalism.

Q10 Getting more value from our infrastructure dollar

In terms of transport, as noted above, car-centric infrastructure means perpetuating car dependency, which is costly to the society as a whole, in terms of environmental degradation; illnesses and injuries associated with traffic, air pollution, and noise; low efficiency of transport of people and goods; infrastructure building and maintenance; direct user costs; and land use [12–15]. Car-dependency is associated with urban sprawl, which in Aotearoa means the replacement of native bush and productive

agricultural land by suburban development generating in turn more traffic [14, 16]. We urgently need to transition to modes that are environmentally-, economically-, and socially affordable: public transport, walking, and cycling.

The assessment of infrastructure investment should be holistic, considering for instance public health or ability for diverse people to participate in local economies, everyday life, or education. New Zealand research shows for instance that health and carbon emission benefits mean that active transport projects have high benefit/cost ratio (over 10:1 - even with conservative valuing of benefits) [6], or that walking improvements can bring very high values to city centres [17]. An obstacle to this has to do with car-centric project assessment methods and available data: as noted above, Waka Kotahi's investment prioritisation tool discriminates against sustainable and inclusive modes of travel, and there is very limited evidence on walking, namely (where people walk, where do they do so less than we could expect, who experiences barriers to walking and what are they, what are trips people would like to do on foot but can't, and why? Etc.).

Q11 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?

As noted above, the lack of long-term planning is detrimental to asset management. Taking transport as an example: the highways are damaged by flows of heavy vehicles mostly, yet we don't have a clear strategy regarding reducing their numbers and weight, by transferring freight to rail and coastal shipping. The only long-term visions for freight focus on electrification, which will do nothing for asset management (probably the contrary, given that electric trucks might be heavier).

Q13 How can we lower carbon emissions from providing and using infrastructure? What's stopping us from doing this?

In terms of transport: by transitioning to modes that are environmentally-, economically, and socially affordable: public transport, walking, and cycling. As described above, current strategies and investment prioritisation rules are stopping us from doing this, as is lobbying associated with energy-intensive modes.

Q14 Are any changes needed to our infrastructure institutions and systems and, if so, what would make the biggest difference?

Infrastructure strategies and investment prioritisation should be based on evidence. The current GPS on transport goes for instance against the evidence by emphasising on economy and value for money while simultaneously promoting roading, costly to the society as a whole in terms of environmental degradation; illnesses and injuries associated with traffic, air pollution, and noise; low efficiency of transport of people and goods; infrastructure building and maintenance; direct user costs; and land use [12–15].

Q16 What regulatory settings need to change to enable better infrastructure outcomes?

As noted above:

- investment prioritisation should be evidence-based and linked to outcomes
- a whole-of-systems approach should be taken, so to consider broader transport impacts – for instance on health, participation, or real estate prices.
- externalities should be re-internalised, e.g. through more adequate pricing, so to stop subsidising harmful modes of transport. Care will be needed so not to increase discrimination, for instance against those on low incomes.

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