Transport Emissions
Ministry of Transport
PO Box 3175
Wellington 6140

Dear Ministry of Transport Te Manatū Waka,

EQC SUBMISSION ON HĪKINA TE KOHUPARA TRANSPORT EMISSIONS DISCUSSION DOCUMENT

Thank you for the opportunity to comment on '*Hīkina te Kohupara – Kia mauri ora ai te iwi – Transport Emissions: Pathways to Net Zero by 2050*' (Transport Emissions Strategy).

About the Earthquake Commission Kōmihana Rūwhenua

The Earthquake Commission Kōmihana Rūwhenua (EQC) is a Crown Entity investing in natural hazards research and education and providing insurance to residential property owners from the impacts of natural hazards.

EQC offers two types of cover:

- Building cover - EQC can repair, replace, relocate, or otherwise compensate for damage to a residential building.
- Land cover - EQC can repair damage to land to enable it to continue to be suitable for residential purposes or pay out to cover the cost of relocation.

EQC covers:

- residential property damage caused by a natural landslip, volcanic eruption, hydrothermal activity, tsunami, or natural disaster fire; and
- damage to land caused by a storm or flood.

The contingent liability associated with natural hazard risk in New Zealand is high and is carried by EQC on behalf of the Crown. EQC therefore has a crucial role in reducing risk from, and building resilience to, natural hazards in Aotearoa New Zealand.

EQC is concerned about the impact of climate change on New Zealand and the EQC scheme

Climate change will continue to exacerbate impacts from all of the natural hazards covered by EQC. These increased impacts will increase demand for EQC claims and pay-outs. Taking increased weather extremes alone, research from Motu[1] shows annual liabilities for EQC will likely increase between 1.6% and 18.1% as a result of climate change. This will

[1] http://motu-www.motu.org.nz/wpapers/20_02.pdf

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necessitate at least an equivalent increase in premiums collected (and potentially more). The researchers note these figures could be underestimated.

This is likely to translate into higher damages and additional financial liability for EQC. The percent change between projected and past damages (the climate change signal), rises from 7% and 8% in 2020-40 to an increase of between 9% and 25% in 2080-2100, depending on the Green House Gas (GHG) concentration scenario. Overall, liabilities will increase more if future GHG emissions are higher.

Additionally, Motu notes that the increase in projected EQC liabilities can also inform private insurers, reinsurers, regulators, and policymakers who are assessing the future performance of both the public and private insurers covering risks in the face of climate change.

EQC feedback on the Transport Emissions Strategy

EQC generally supports the Transport Emissions Strategy, which is focussed on eliminating emissions across the transport sector. For the reasons set out above, EQC agrees that Aotearoa needs to take further steps to align its actions with its targets to reduce emissions. This is needed not only for a cleaner, greener, healthier and more sustainable future, but also for a safer and more resilient New Zealand, to ensure the hazards we will inevitably face are less likely to become disasters that threaten our prosperity and wellbeing.

A summary of our feedback is provided below. These summary points are expanded in the detailed feedback table below.

Summary

- EQC generally supports the 'Hīkina te Kohupara – Kia mauri ora ai te iwi – Transport Emissions: Pathways to Net Zero by 2050' discussion document (Transport Emissions Strategy).
- Reducing emissions will mitigate the effects of climate change and in turn mitigate the impacts on the affordability and availability of natural hazard insurance.

The Transport Emissions Strategy should:

1. include an additional guiding principle for resilience to natural hazards, within the principles used to shape the advice in Hīkina te Kohupara.
2. take a holistic approach to reduce emissions, including accounting for emissions over the lifecycle of transportation infrastructure assets and buildings, and the emissions implications of premature repairs, demolition, and reconstruction due to the impacts of natural hazards.
    - note that the impacts (including increased greenhouse gas emissions) of natural hazard shocks can be reduced by:
        - locating buildings and infrastructure away from areas with high natural hazard risk;
        - designing and building strong infrastructure, able to withstand hazard events; and

    - building redundancy into the transport system through additional routes and modes of transport.
3. state that major transportation infrastructure investments, in particular transport hubs such as railway stations and ferry terminals, should preferentially be located away from locations with high natural hazard risks, such as earthquake fault, landslide, tsunami and volcanic hazard risks.
4. note that urban intensification should not be pursued in high-hazard areas, such as flood plains, active faults, volcanic fields, coastal hazard zones, and land susceptible to land instability.
    - Specifically, the sixth dot point on page 43 has an enabling action for Local Government, Kainga Ora, and others, to take more active roles in developing sites around frequent public transport stations. The Transport Emissions Strategy should also note that risk assessments across all hazards (including climate change impacts) must be undertaken at these locations to ensure the communities (and associated infrastructure) they serve are not put at increased risk of events.
    - The Transport Emissions Strategy should also note that new public transport hubs, aiming to encourage densification and urbanisation, must be located in areas with lower natural hazard risks.
5. note that recovery from disasters presents an opportunity to increase resilience when rebuilding, by moving (damaged) transport infrastructure away from high-hazard areas, and ensuring new transport infrastructure is designed to be resilient to natural hazards.
6. note that increasing multi-modal transport options, such as walking, cycling, rail, and shipping, also adds redundancy into the transport system, increasing resilience.

EQC is happy to discuss any of the above submission. Please feel free to contact me with any questions at the address below.

Ngā mihi nui,

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Detailed feedback table

1	*The principles used to shape the advice in Hīkina te Kohupara should include an additional guiding principle for resilience to natural hazards, e.g. Principle 8. Opportunities for co-benefits will be encouraged to ensure an inclusive and safe, transport system which is resilient to natural hazards and supports economic activity.* The opportunity for the Transport Emissions Strategy to deliver co-benefits alongside reducing emissions is acknowledged on page 8. Supporting this, the Transport Outcomes Framework presented in Figure 1 includes 'Resilience and security', which is aimed at minimising and managing the risks from natural hazards, and the effective recovery from disruptive events. *EQC strongly supports this transitional opportunity*. Opportunities to improve transportation resilience measures include redundancy of key routes; understanding key transport evacuation routes and requirements; constructing or upgrading new transportation infrastructure that includes seismic strengthening as well as climate change 'freeboard'; raising road levels above inundation levels; and planning to relocate key transportation routes and associated infrastructure (e.g. coastal roads in seismically active areas prone to landslides and/or tsunami).
2	*The Transport Emissions Strategy should take a holistic approach to reduce emissions, including accounting for emissions over the lifecycle of transportation infrastructure assets and buildings, and the emissions implications of premature repairs, demolition, and reconstruction due to the impacts of natural hazards.* Aotearoa New Zealand faces some of the greatest natural hazard risks of any country in the world. While the focus of the Transport Emissions Strategy focuses on directly reducing transport emissions, locating buildings and infrastructure in high-hazard locations not only results in greater risk to our communities, but also results in earlier repairs, demolition, and reconstruction. This increases greenhouse gas emissions. For example, the carbon cost of the Canterbury earthquakes included: • embodied carbon "forgone" as the lifetime of buildings was drastically reduced. For example, if a building was built in 2000 with a 90-year life span but demolished in 2010 after the first earthquake, 80 years of embodied carbon is effectively wasted. Or, to put it differently, 90 years of embodied carbon at the construction phase was effectively invested for only 10 years of benefits. • The operational emissions involved in demolition. For example, fuel burned in the operation of heavy machinery. • The transportation emissions including for the emergency response, voluntary relocation of Christchurch residents, and for the relocation of demolition material and movement of construction materials. • The carbon cost invested to rebuild and build new buildings. • The carbon embodied in maintenance throughout the lifetime of the new buildings. Specifically, the Transport Emissions Strategy notes the Canterbury earthquakes alongside the impacts of COVID-19 as an example of an economic shock, and notes that 'Economic shocks are likely to have a detrimental impact on initiatives to reduce emissions, even if they cause short-term emissions reductions due to lower economic

	activity and travel'. However, neither this statement, nor the strategy as a whole, accounts for the carbon cost of earlier repairs, demolition, and reconstruction. **The Transport Emissions Strategy should note that the impacts (including greenhouse gas emissions) of natural hazards can be reduced by:** - **locating buildings and infrastructure away from areas with high natural hazard risk;** - **designing and building strong infrastructure, able to withstand hazard events; and** - **building redundancy into the transport system through additional modes of transport.**
3	*Under "Long-term investment is required to improve modal choice in the freight system" (p.87), the Transport Emissions Strategy should state that major transportation infrastructure investments, in particular transport hubs such as railway stations and ferry terminals, should preferentially be located away from locations with high natural hazard risks, such as earthquake fault, landslide, tsunami and volcanic hazard risks.* The potential increase in emissions of renewing major investments in hazardous areas are not discussed in the Transport Emissions Strategy. These are outlined in the above section. In addition, locating transport hubs in areas of high natural hazard risk will lead to increased disruption, which in turn is likely to lead to increased pressure on other transport networks and increased greenhouse gas emissions (for example, if people switch from using the train to using their cars during the disruption). Ongoing discussion around the replacement of the Interislander ferry terminal provides a timely example where the option to locate away from a high-hazard area may not be chosen. The Transport Emissions Strategy notes that *'Current investment priorities for rail as outlined in the draft New Zealand rail plan, include the replacement of freight locomotives and the inter-islander ferry assets which are at or beyond their economic lives. Renewing these assets will lead to further reductions in the emissions from the rail network'* (p. 87). However, KiwiRail currently intends to rebuild the Interislander ferry terminal in the same location. This would miss the opportunity to re-site the terminal away from the Wellington Fault. Moving the ferry terminal to a second proposed location (which is supported by CentrePort, Wellington City Council, and Wellington Regional Council, along with other harbour users) would move the terminal away from the fault. As outlined above, relocating the terminal to the proposed location, would not only reduce emissions in the long-term, but have resilience benefits also.
4	*Under "Quality compact, mixed-use urban development can reduce trip distances and encourage the uptake of sustainable transport modes" (p. 36), the Transport Emissions Strategy should note that urban intensification should not be pursued in high-hazard areas, such as flood plains, active faults, volcanic fields, coastal hazard zones, and land susceptible to land instability.* The Transport Emissions Strategy notes that urban intensification around both public transport hubs and employment hubs is one mechanism to reduce emissions. For example, 'Quality compact, mixed use urban development needs to be encouraged around both public transport hubs and employment hubs (including areas of employment and economic activity outside of Central Business Districts), to make it

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	easier for more people to access jobs, shops, schools, and other important destinations by walking, cycling and/or using public transport' (p. 36). However, the Transport Emissions Strategy does not discuss the potential increase in emissions of intensifying developments in hazardous areas. Increasing the density of urban development in hazardous areas (e.g. flood plains, active faults, volcanic fields, coastal hazard zones, and land susceptible to land instability) will not only result in greater risk to our communities, but also in an increase in greenhouse gas emissions if buildings need to be replaced prematurely due to being impacted by a natural hazard event. These greenhouse gas emissions will counter the original purpose of the urban intensification. EQC notes that this is also an omission in the National Policy Statement on Urban Development 2020 (NPS-UD). **Specifically, the sixth dot point on page 43 has an enabling action for Local Government, Kainga Ora, and others, to take more active roles in developing sites around frequent public transport stations. The Transport Emissions Strategy should also note that risk assessments across all hazards (including climate change impacts) must be undertaken at these locations to ensure the communities (and associated infrastructure) they serve are not put at increased risk of events.** EQC supports a Transport Emissions Strategy design that reduces carbon emissions as much as practicable without having a negative impact on resilience. However, assurance needs to be provided that efforts to minimise carbon emissions through intensification does not have a negative impact on resilience and potentially lead to greater carbon emissions if buildings need to be demolished and rebuilt. **The Transport Emissions Strategy should also note that new public transport hubs, aiming to encourage densification and urbanisation, must be located in areas with lower natural hazard risks.** Rather than only intensifying around existing transport and employment hubs, locating new public transport hubs (and employment hubs) in areas with lower natural hazard risks with scope for future growth would be a powerful mechanism to ensure future development is promoted in resilient locations. This would provide a substantial reduction in potential life cycle embodied carbon costs by avoiding widescale but periodic demolition and replacement impacts.
5	*The Transport Emissions Strategy should note that recovery from disasters presents an opportunity to increase resilience when rebuilding, by moving (damaged) transport infrastructure away from high-hazard areas, and ensuring new transport infrastructure is designed to be resilient to natural hazards.* Transportation resilience improvements, including through smarter land-use planning, can be made when recovering from natural hazard events. As outlined above, doing so will increase resilience and decrease future greenhouse gas emissions.

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6	*The Transport Emissions Strategy should note under "walking, cycling and other active modes can reduce emissions, improve access and have significant health benefits" (p. 47), that increasing multi-modal transport options, such as walking, cycling, rail, and shipping, also adds redundancy into the transport system, increasing resilience.* In addition to the emissions benefits of multi-modal transport outlined in the Transport Emissions Strategy, diversifying transport modes adds redundancy into the transport system. EQC supports a Transport Emissions Strategy design that encourages diversified transport modes, as this aligns with EQC's resilience strategy goal to ensure communities are served by resilient infrastructure. This helps to increase the resilience of infrastructure that serves communities and will decrease the likelihood of communities becoming isolated after natural hazard events, as happened, for example, following the Kaikōura-Hurunui 2016 earthquake.

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