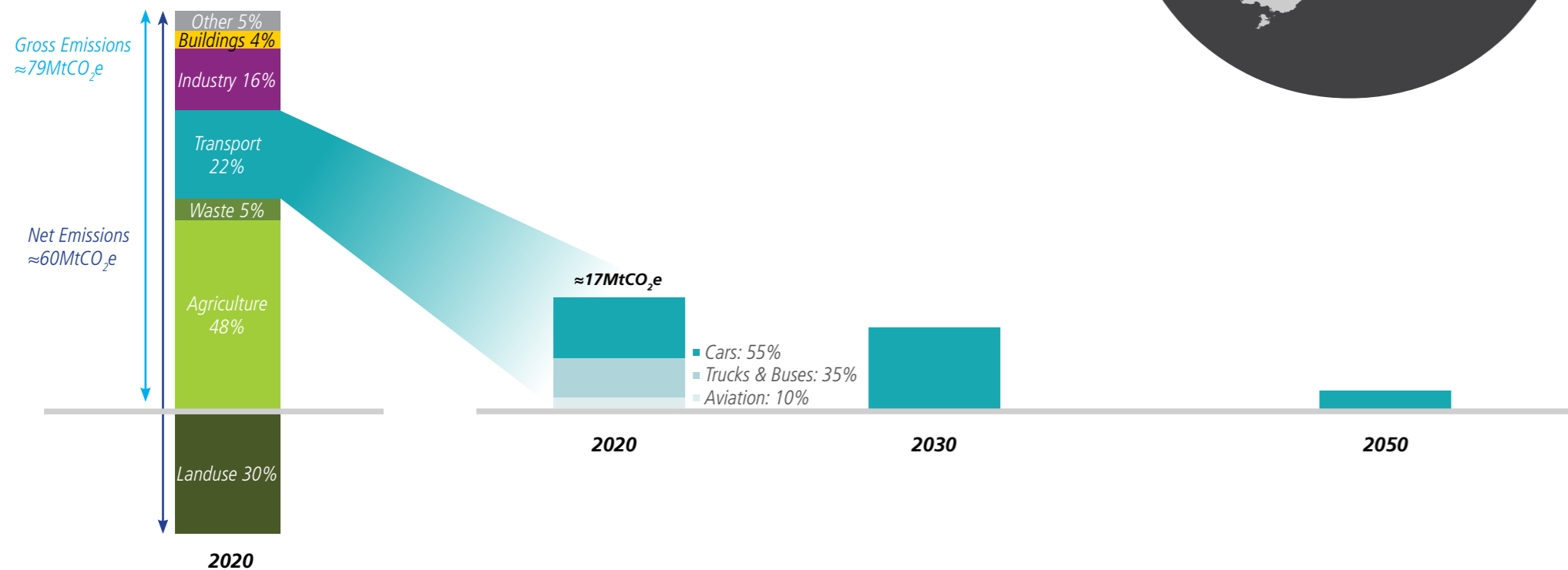


THE CHALLENGE:

- ▶ HIGH EMISSIONS
- ▶ HEATING CLIMATE
- ▶ UNEMPLOYMENT
- ▶ HOUSING CRISIS
- ▶ DECLINING BIODIVERSITY
- ▶ LINEAR ECONOMY
- ▶ ECONOMIC INSECURITY
- ▶ POLLUTED WATERWAYS
- ▶ DEGRADING SOIL

TRANSITION: TRANSPORT:

- ▶ STRATEGIC TRANSPORT NETWORK PLANNING
- ▶ TRANSIT AND ACTIVE-MODE ORIENTED LAND DEVELOPMENT
- ▶ MINIMISING TRAVEL DEMAND
- ▶ ADAPTIVE TRANSPORT CORRIDORS
- ▶ LOW-EMISSIONS VEHICLE FLEET
- ▶ RESILIENT TRANSPORT SYSTEMS



Transition: Land Transport Systems

CHALLENGE STATEMENT

Movement of people and freight will continue to be essential to maintaining our society, but we must reduce the environmental impacts and plan for resilient systems. Energy use associated with transport systems contributes roughly 17MtCO₂e/year,[1] approximately 20% of national greenhouse gas (GHG) emissions and is a significant source of air and water pollution. Of this, 90% is land transport. Some environmental impacts of building and maintaining transport systems are often typically mitigated, however there is significant opportunity to do more. A future focused view of the long-term risks from climate change will support greater investment in the development of a more resilient and adaptive transport network.

KEY OPPORTUNITIES

Beca's transport and community shaping specialists have identified the key opportunities for transformation of land transport systems below.

Strategic transport network planning: 90% of transport emissions are from road transport. Cars contribute approximately 9.5MtCO₂e/year, and trucks and buses a further 5.6MtCO₂e. There is an urgent need to **reduce low occupancy, high-emission vehicle use by:**

Projects supporting transit and active mode-orientated land development: A focus on strategic active mode projects that support unhindered city centre access, and those on key spine routes linking new developments to embed new behaviours. Continued focus on projects to increase public transport capacity and importantly access to it, is necessary to support recovering patronage and confidence and remains part of our post-COVID-19 future.

Projects managing and reducing travel demand: Initiatives that leverage off working-from home and flexible work times will help to 'flatten the peak' and address reduced public transport capacity. COVID-19 has fast-tracked the ability of many organisations to encourage remote working for employee and students. Continued investment in remote working technologies and development of "work-hubs" for those without good work-from-home conditions would further promote remote working. Intelligent transport systems (including safe rideshare apps) should enable better trip management. Prioritise higher-productivity movement through key corridors that help increase vehicle occupancy and system productivity. Careful consideration of reducing parking provisions and timing of applying congestion charges is needed, but both should be progressed. The current rapid uptake of micro-mobility/e-modes should be supported through infrastructure and policies.

Projects with adaptive transport corridor design: Provide transport corridors that demonstrate flexibility and an adaptive approach, to allow changes in their function and physical interfaces, that respond to changes in land use and the way we move around in the future.

Benefits include improved air quality, more equitable access to jobs and services, reduced travel costs, and improved housing affordability (enabling people to live further away from urban centres).

Reduce emissions of vehicle fleet: Prioritise transition to low-emission and electric vehicles through the provision of charging infrastructure, financial incentives, designating EV/low-emission-vehicle lanes and traffic zones, improving vehicle emission standards, and accelerating the update of the existing fleet. For freight, priority should be to upgrade and electrify regional rail networks, and use efficient coastal shipping. Green hydrogen fuel infrastructure could be tested to support low emissions road freight. Fleet electrification will require expansion of electricity capacity and enhanced management of peak demand. Batteries also have limited life expectancy and integration of projects for recycling and reducing costs should be progressed.

Climate resilient infrastructure: Approximately 2,100km of roads are exposed to a 1.5m sea level rise with a replacement value of \$1 billion.[2] Priority should be for projects that support Council climate adaptation planning and avoids at-risk floodplains and coastal areas.