

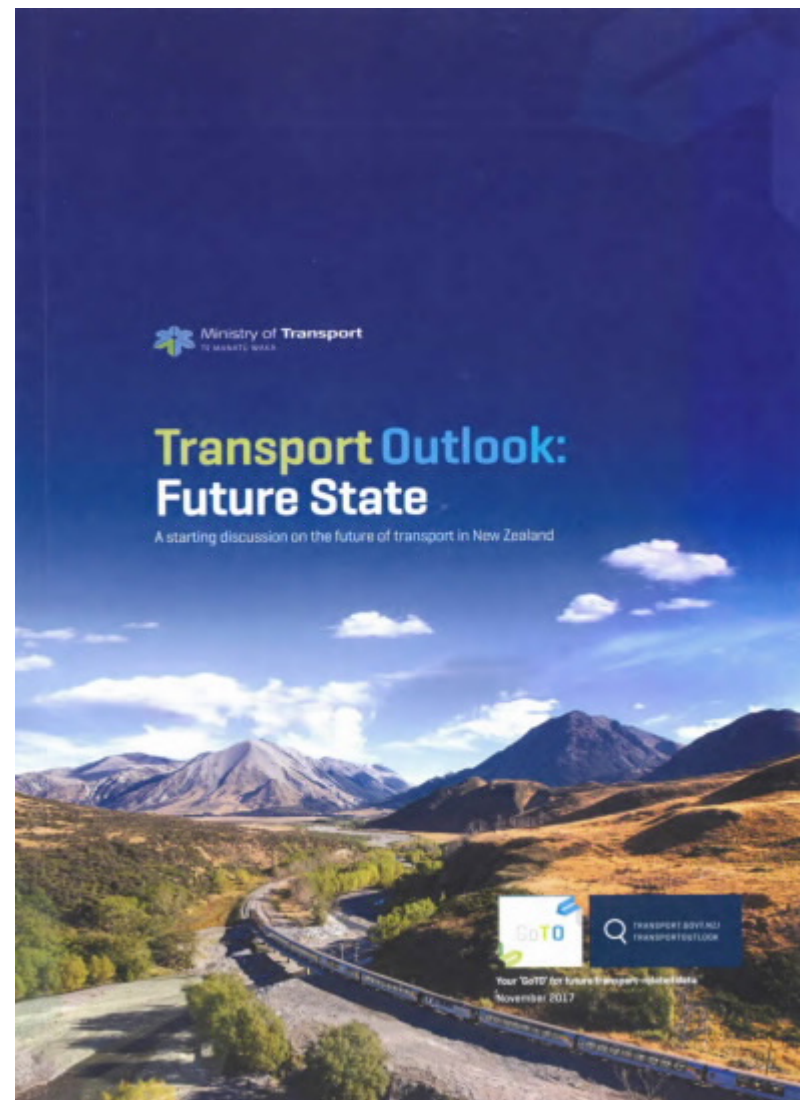


New Zealand Transport Outlook: Future State

Ralph D. Samuelson

**Presentation to the Engineering
New Zealand Transportation Group
Conference**

23 March 2018



Introducing the New Zealand Transport Outlook



It provides:

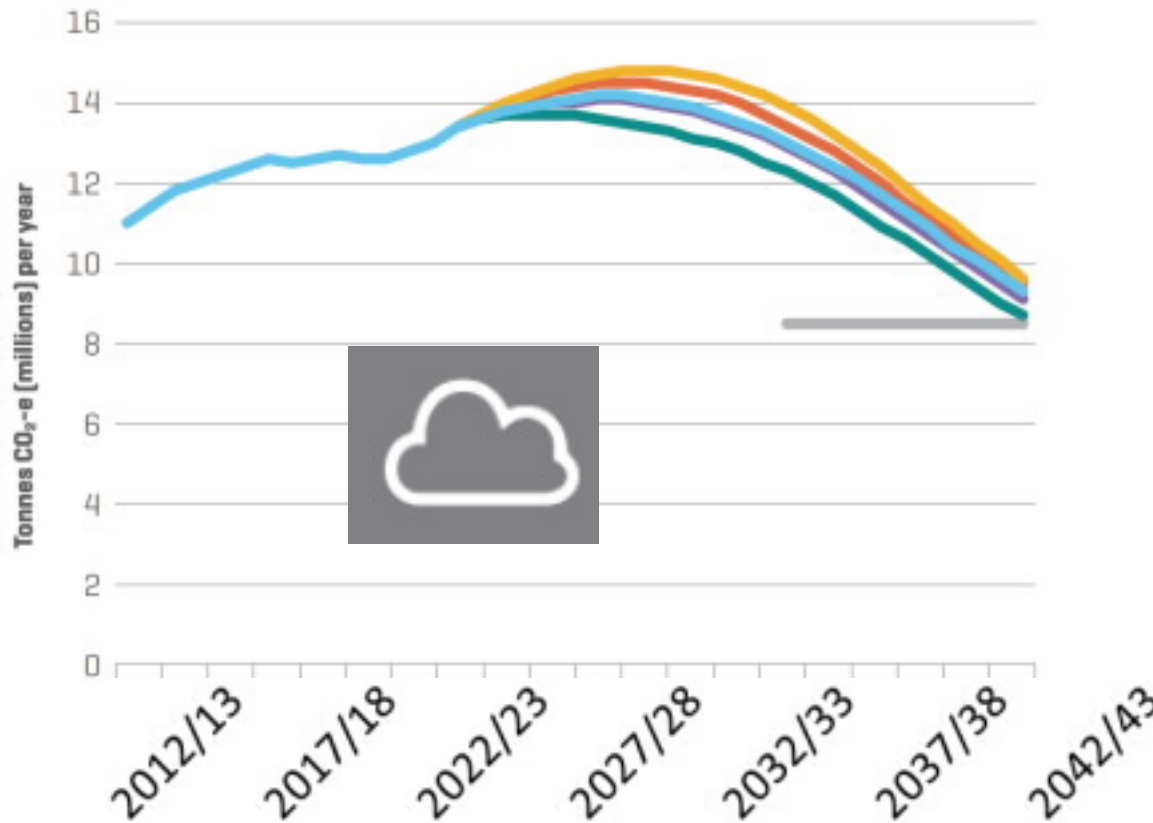
- a high-level view of the current state of the transport system
- commentary on emerging trends and influences (such as technology, demographics)

- 25-year projections of future transport demand, vehicle-kilometres travelled, fuel use and emissions under 5 scenarios

- Aims to provide a base of common information, assumptions, and projections that others in the sector can use for future planning, policy-making and investment

- Intended as a starting point for discussion in a continuing process of engagement with stakeholders and researchers

Comparison Across Scenarios: Road Transport Emissions



Base Case	Staying Close to the Action
Metro-Connected	Golden Triangle
@Home in Town and Country	30% reduction compared with 2005

How Transport Outlook's Models Fill a Need



Almost all policy analysis requires projecting the future, such as:

travel demand and traffic volumes

fuel use/emissions

public health and safety

Models can bring consistency and rigour to these projections

However, in order to provide maximum value, the models should be consistent and continually improved

Outlook's modelling effort is therefore very much a means to a broader end: developing an ongoing in-house modelling capability at MoT

Outlook's Set of Interlinked, System-Level Models



Aviation Sector



Regional Air Travel

International Air Travel

Aircraft KM Travelled/
Emissions

Leg-Based Departures

Local Ground Travel Sector



Household Travel (all modes)

VKT/Vehicle Numbers

Health Outcomes

Road Fleet/Fuel/
Emissions

Freight Sector



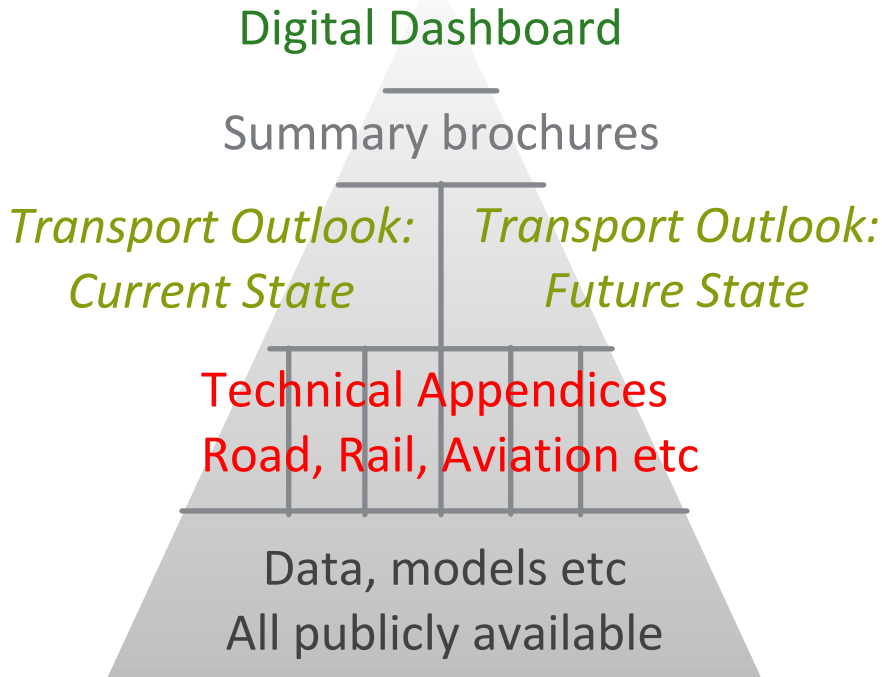
Freight Flows (road/rail/ship)

Freight Tonne-KM by Region

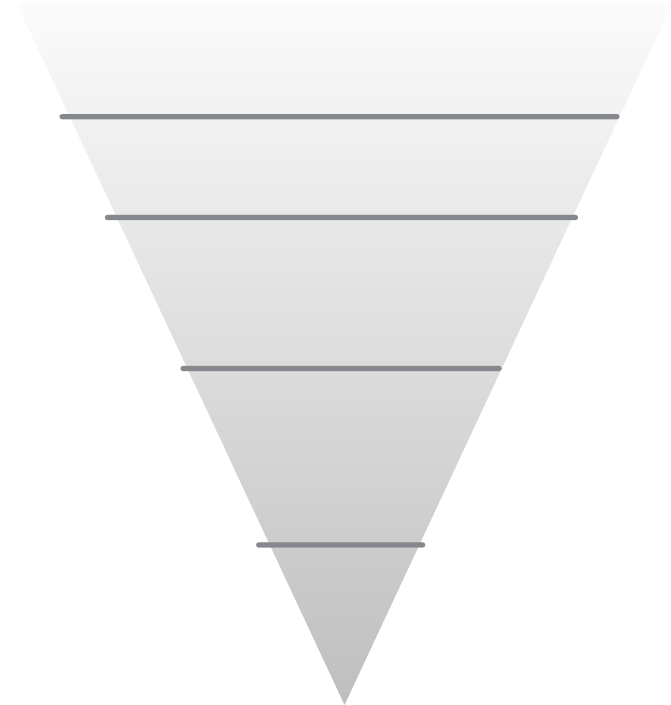
Rail/Shipping Fuel/Emissions



Products



Audience



The Base Case



The Base Case assumes current trends and transport demand patterns will continue with slow, non-disruptive evolution of technology

Does not take into account planned infrastructure investments

Exception: Public transport in Auckland is based on Auckland Transport projections incorporating the City Rail Link and other planned public transport enhancements in Auckland

In this sense it is a very 'business as usual' scenario

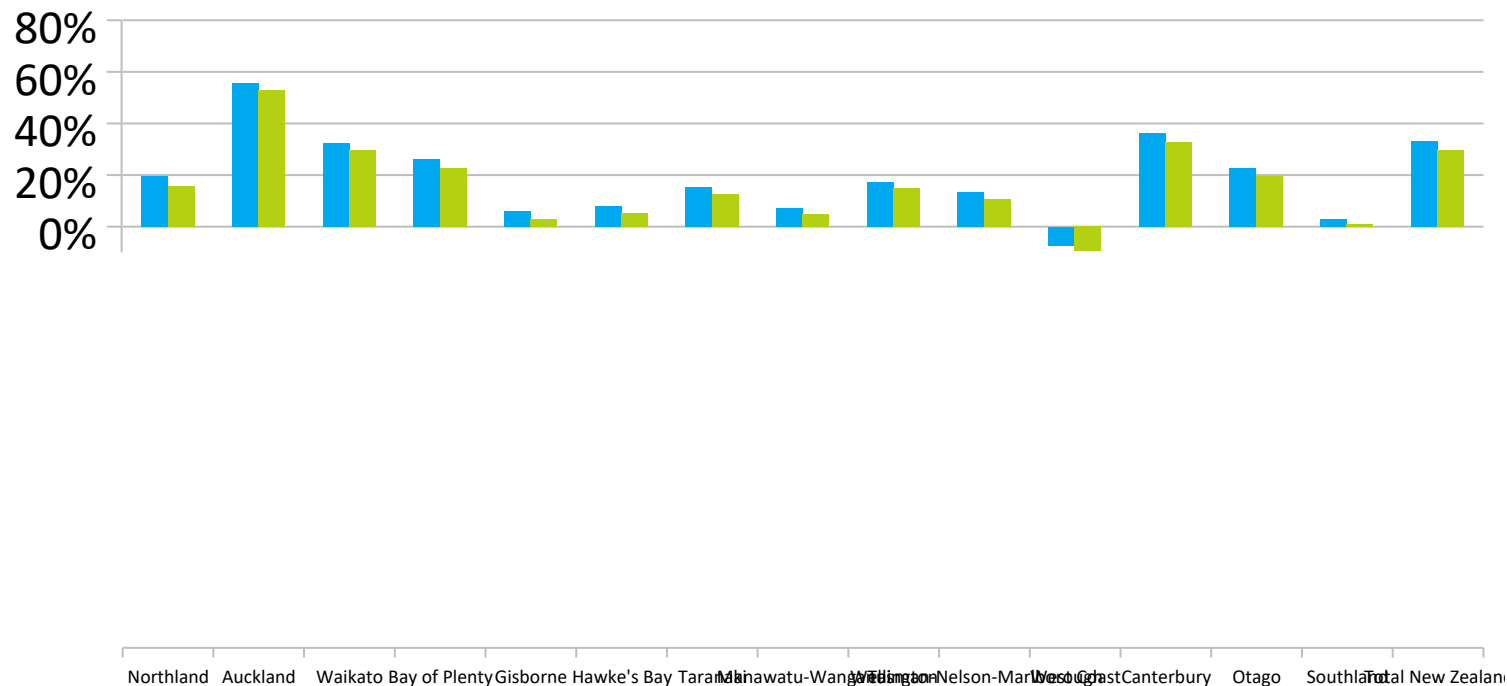
Not a mid-point of the four alternative scenarios

Base Scenario – Change in Local Trips Per Capita by Mode Before Shift to Vehicle Share



	2012/13	2042/43
Light vehicle driver	697	704
Light vehicle passenger	341	292
Pedestrian	222	211
Bus	30	42
Cyclist	16	14
Train	5	11
Motorcycle	4	4
Taxi	4	5
Ferry	1	1
Other	2	3
TOTAL	1,321	1,285

Base Scenario – Percent Change in Population and Trips by Region 2012/13->2042/43



■ Population ■ Trips

* Based on Statistics New Zealand Medium Projection 2013(base) update

Five Scenarios: Base Case + Four Alternatives

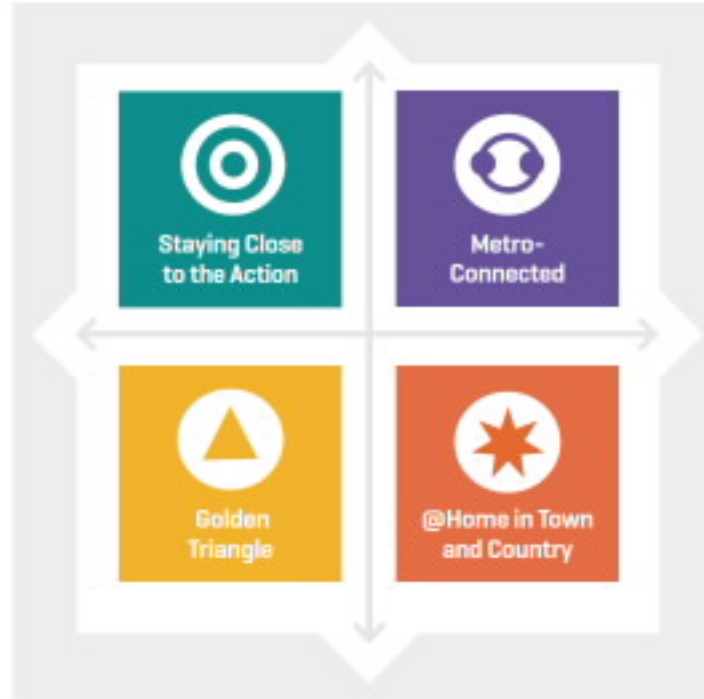


Moderate Technological Progress/ Economic Growth/Population Growth

Live in Transit-Friendly/Dense Big Cities

Face-to-Face Interaction Highly Valued

Live in Suburban/Sprawling Big Cities



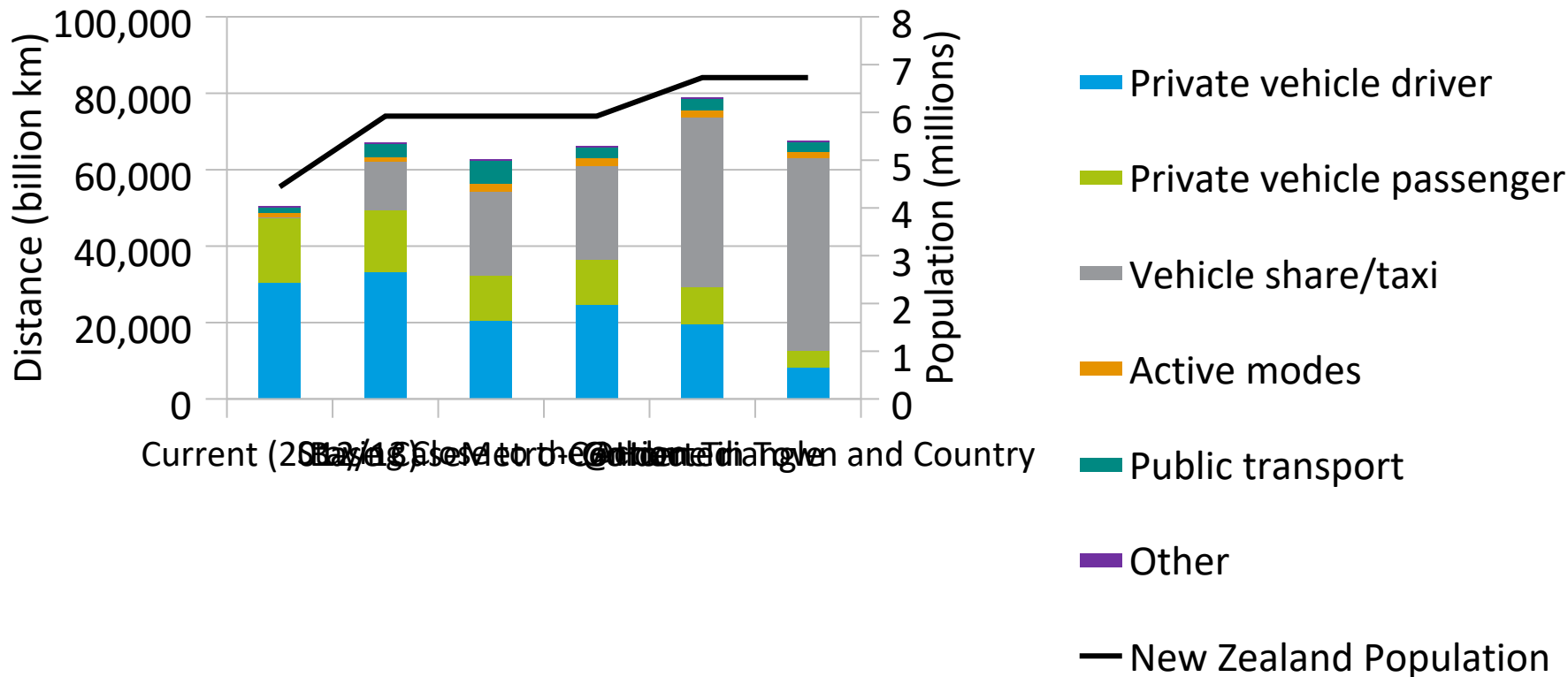
Live in Big and Smaller Cities

Digital Communications Can Substitute for Transport

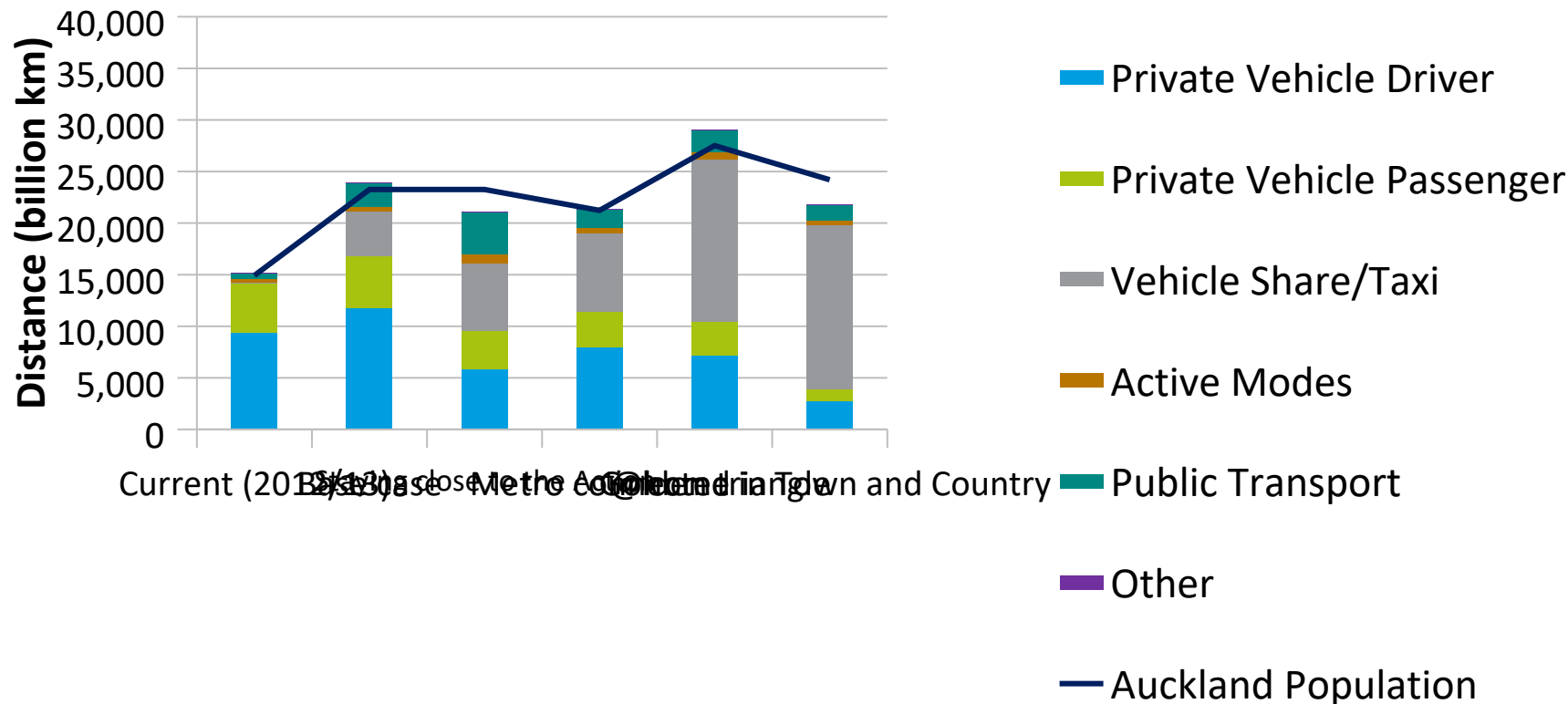
Live and Work Anywhere You Please

Rapid Technological Progress/Economic Growth/Population Growth

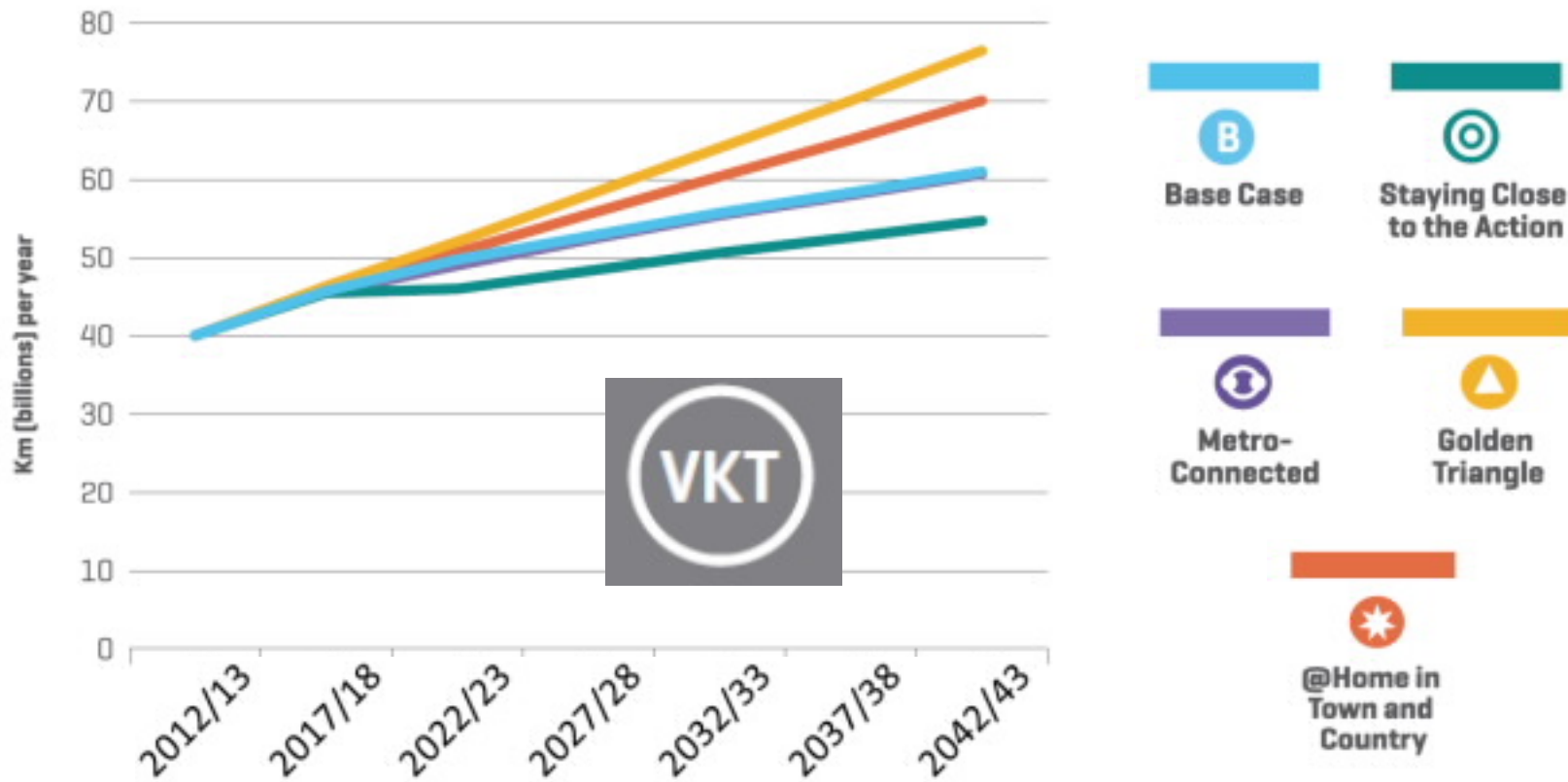
Comparison Across Scenarios: 2042/43 Projected Distance Travelled by Mode in New Zealand



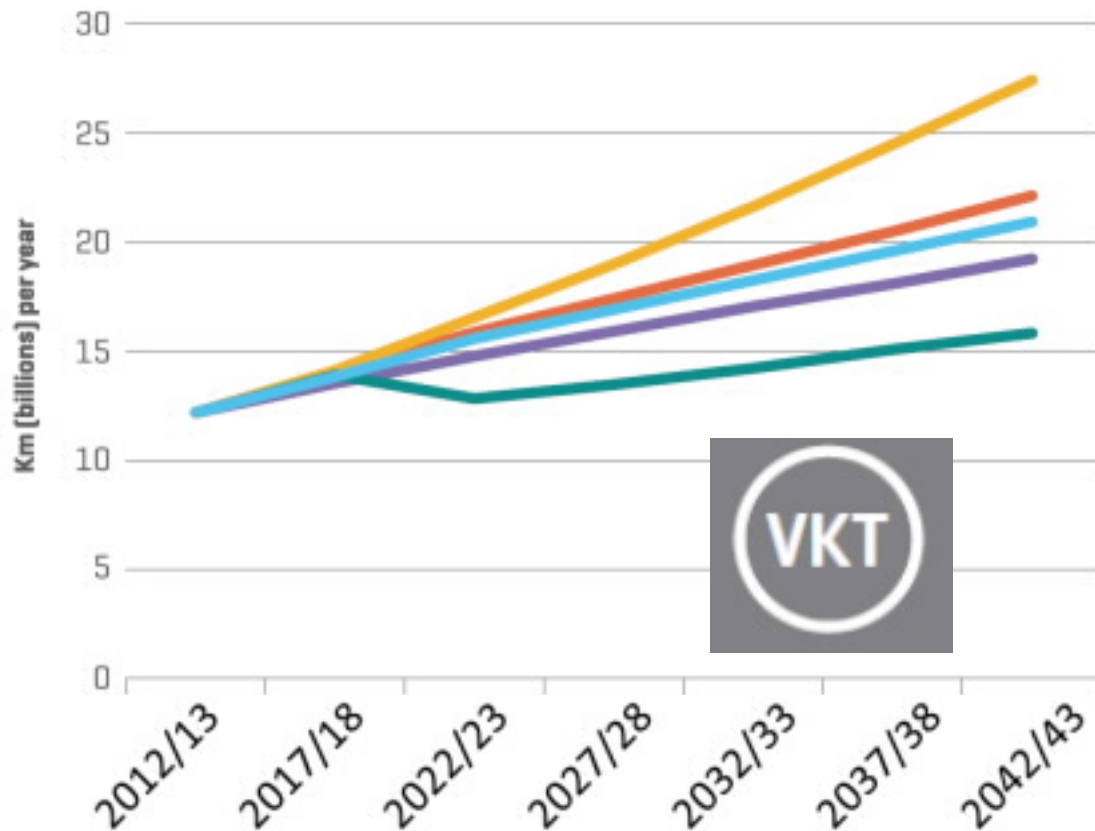
Comparison Across Scenarios: 2042/43 Projected Distance Travelled by Mode in the Auckland Region



Comparison Across Scenarios: Projected Vehicle Kilometres Travelled in New Zealand



Comparison Across Scenarios: Projected Vehicle Kilometres Travelled in the Auckland Region

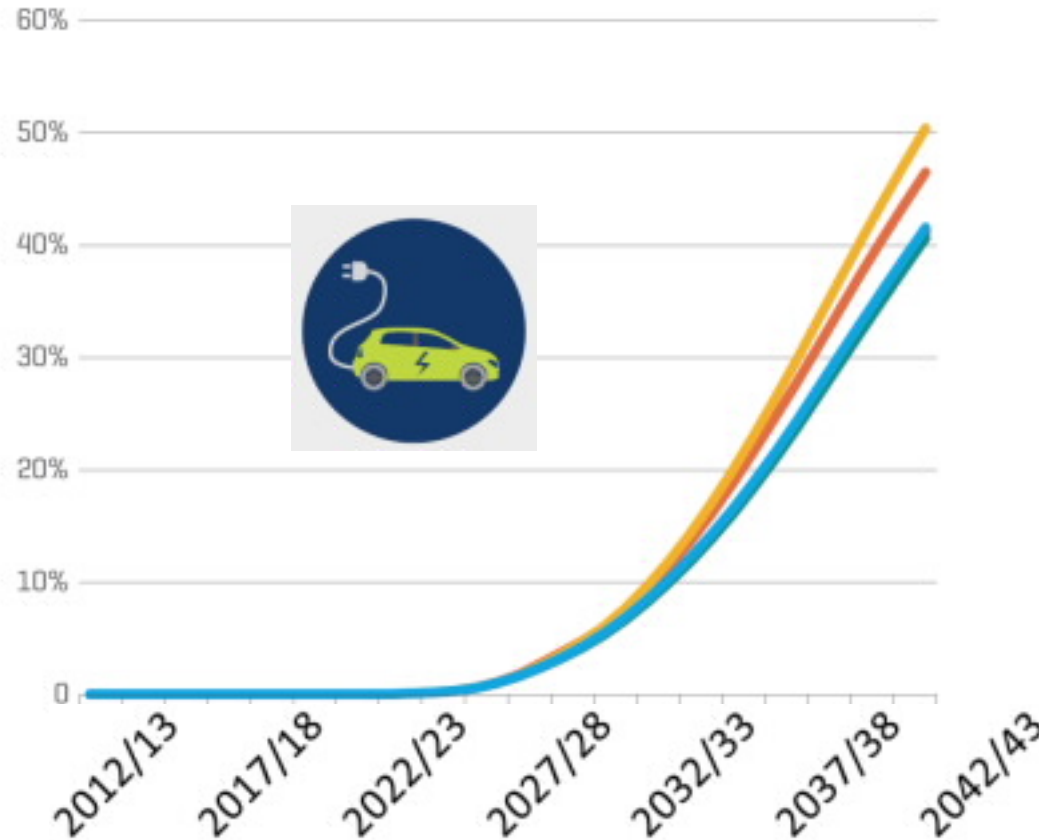


Health Impacts by Scenario in 2042/43 Compared to 2012/13

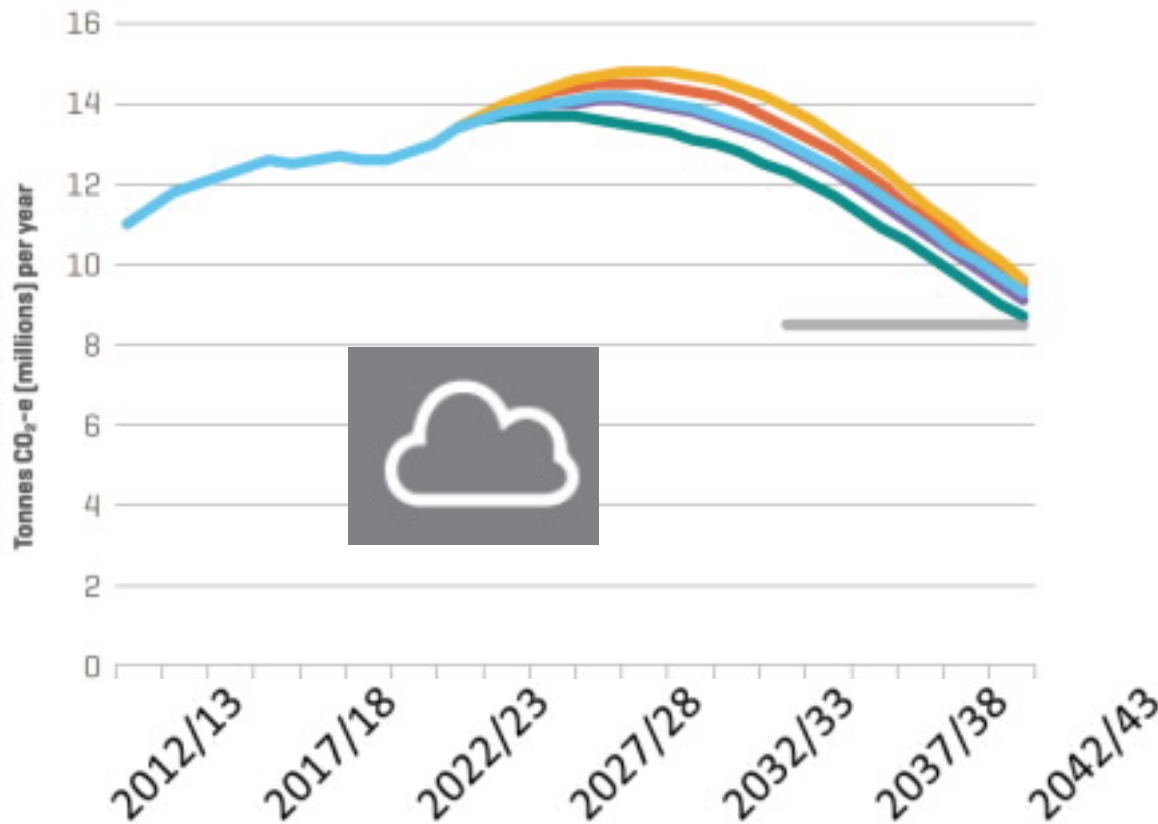


	Change in the number of deaths	Change in the number of years of life lost
B Base Case	+58	+608
Staying Close to the Action	-266	-4,147
Metro-Connected	-79	-1,552
Golden Triangle	+35	+227
@Home in Town and Country	+131	+1,362

Comparison Across Scenarios: Electric Vehicles as Percent of Fleet



Comparison Across Scenarios: Road Transport Emissions



Base Case	Staying Close to the Action
Metro-Connected	Golden Triangle
@Home in Town and Country	30% reduction compared with 2005

Where to From Here?



The project does not end with publication of *Future State* document:

“Start of a conversation” – begin stakeholder consultation process

Closer cooperation with NZTA and their Long-Term Strategic Vision

Continually improve the models

Produce updated and improved editions of the Outlook publications