

# Subnational Baseline for VKT and GHG.

## Transport Knowledge Hub

21 November 2022

Vicky Li (Beca)

**make  
everyday  
better.**

# Agenda

- Why?
- How?
- What Now?
- What Next?



# Emission Reduction Plan

## The Government is committing to four transport targets

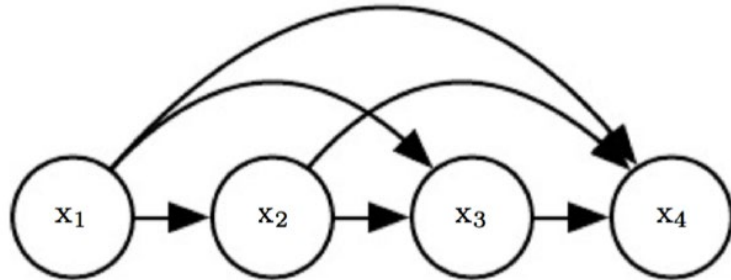
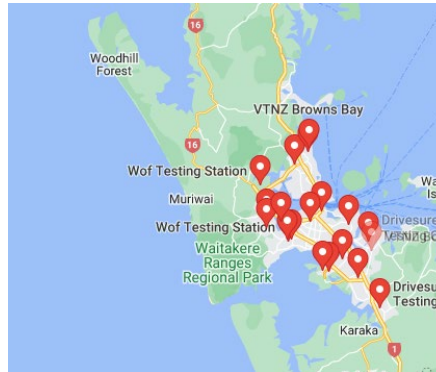
The Government has set four transport targets that will support these focus areas and align with achieving the sector sub-targets for transport.<sup>2</sup> This is approximately equivalent to a 41 per cent reduction in transport emissions by 2035 from 2019 levels.<sup>3</sup>

- ▶ **Target 1** – Reduce total kilometres<sup>4</sup> travelled by the light fleet by 20 per cent by 2035 through improved urban form and providing better travel options, particularly in our largest cities.
- ▶ **Target 2** – Increase zero-emissions vehicles to 30 per cent of the light fleet by 2035.
- ▶ **Target 3** – Reduce emissions from freight transport<sup>5</sup> by 35 per cent by 2035.
- ▶ **Target 4** – Reduce the emissions intensity of transport fuel by 10 per cent by 2035.

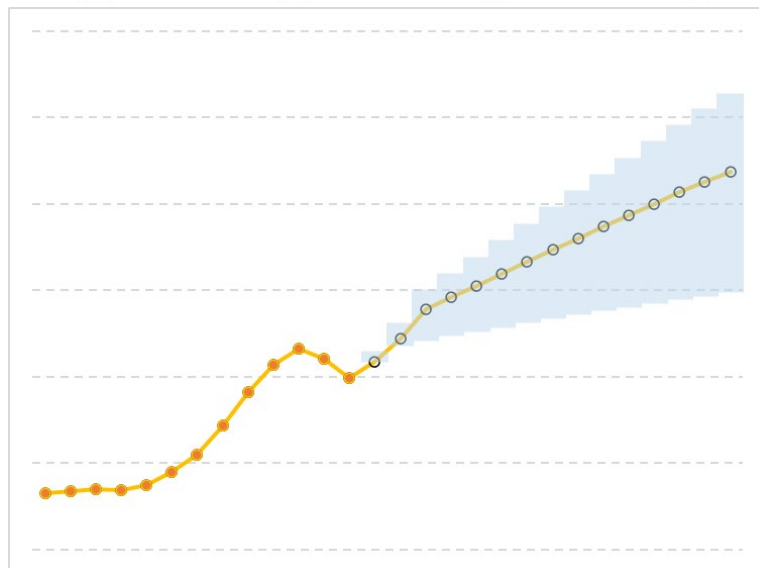




How do we define these “largest cities”?



How do we disaggregate VKT to these cities?



# Considerations

- Data availability
  - Continuity
  - Granularity
  - Coverage
- Integrate-ability
  - Many-to-one collapsible boundaries
  - Consistent assumptions
- Update-ability
  - Feature projections

Why		How		What Now		What Next	
Data Sources	Dataset	Continuity	Granularity	Coverage			
Waka Kotahi	TMS	2012 – 2022	Links	Localised sites			
	RAMM	2002 – 2020	TLAs	Nation-wide			
	Projected VKT	2002 to 2050	Nation	Nation-wide			
	Emission Model	2001 to 2050	N/A	N/A			
	Emission Dataset	2019 and 2020	Links	Nation-wide			
Ministry of Transport	Quarterly Observed VKT	2002 Q1 to 2021 Q2	11 regions	Nation-wide			
	Regional Observed VKT	2012/13 to 2018/19	14 regions	Nation-wide			
	Projected VKT	5-year increments (2022/23 to 2057/58)	14 regions	Nation-wide			
	Emission Model	2001 to 2055	Nation	Nation-wide			
Local Government Transport Models	Auckland, Christchurch, Wellington	AKL: 2018, 2038	Links	Urban-centres			
		CHC: 2018, 2038					
		WLG: 2013, 2036					
Statistics New Zealand	Census	5-year increments (2018 to 2058)	SA2s	Nation-wide			

Why

How

What Now

What Next

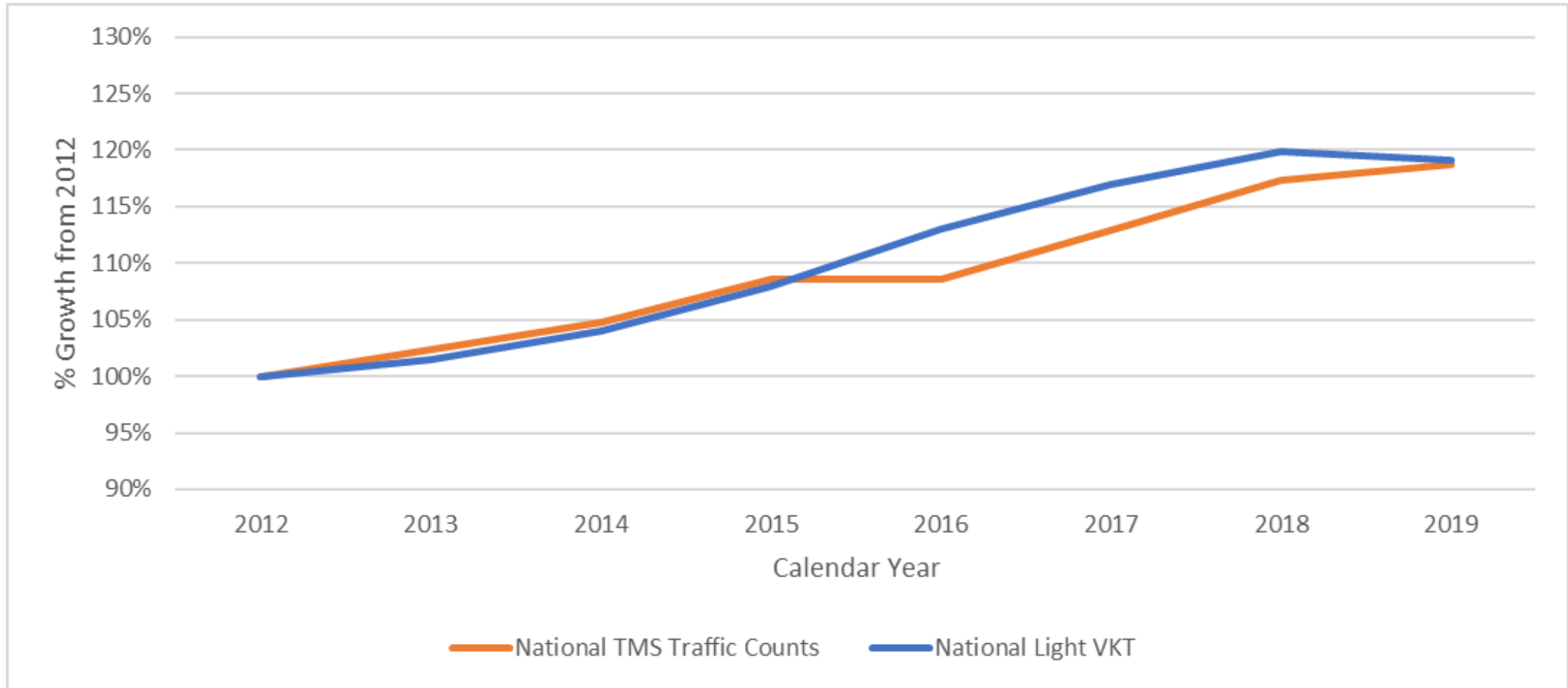
Design Principles	Transport Models	Region	FUA	TLA	Spatial Areas
Reflect material differences in travel patterns of likely type of intervention	Y		Y		Y
Account for future urban areas expected within 2035 horizon	Y			Y	Y
Align with definitions used in common, long running forecasts	Y	Y		Y	Y
Align with jurisdictional boundaries that may have different responses				Y	Y
Align with existing policy definitions	Y			Y	Y
Align with purpose of the work and ability to readily update the assessments		Y		Y	Y
Align with transport models to allow transfer for forecasting data in needed	Y	Y		Y	Y



# Feature Assessment

- Fulltime Employment
- Working Age Population
- Petrol Elasticity
- Historical RAMM
- Transport Model Outputs

# Feature Assessment



Why

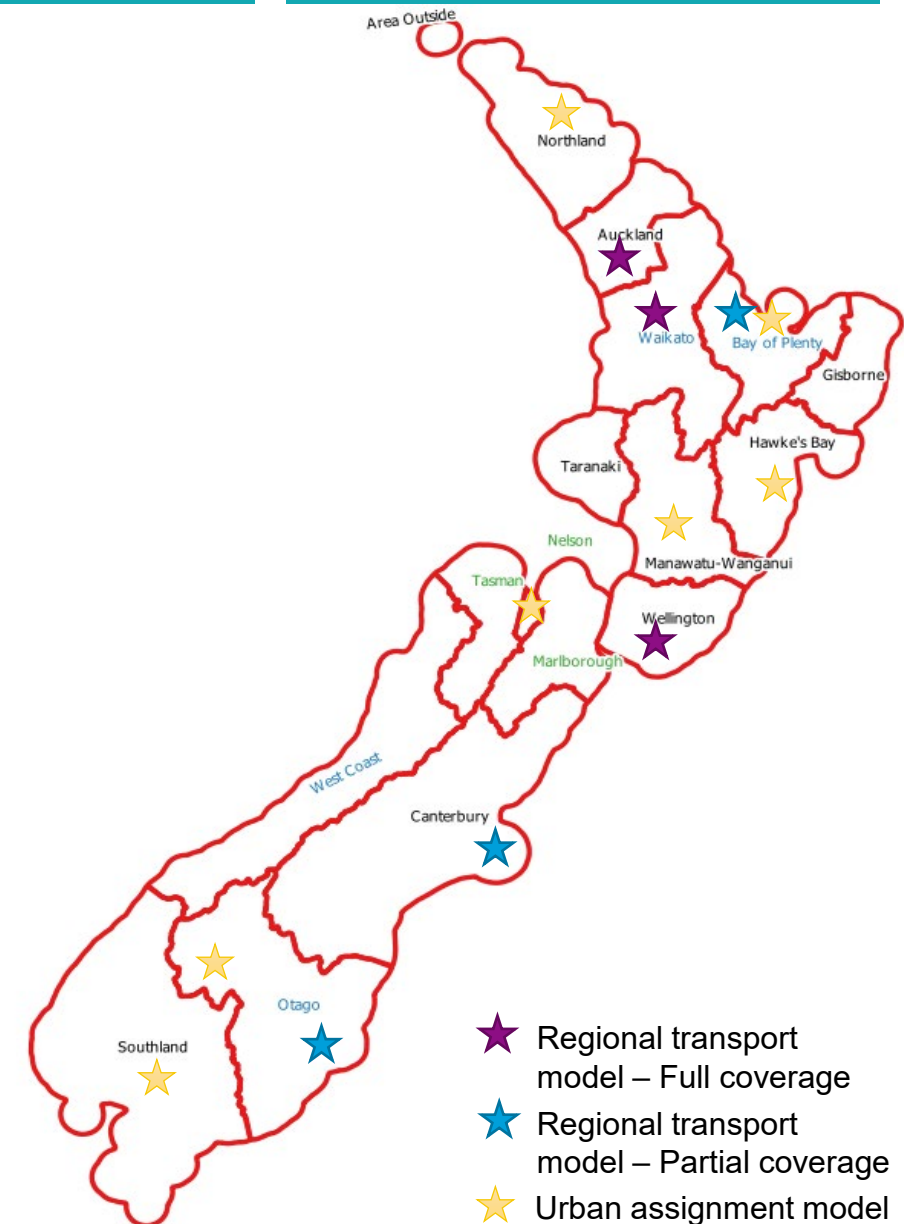
How

What Now

What Next

# Feature Assessment

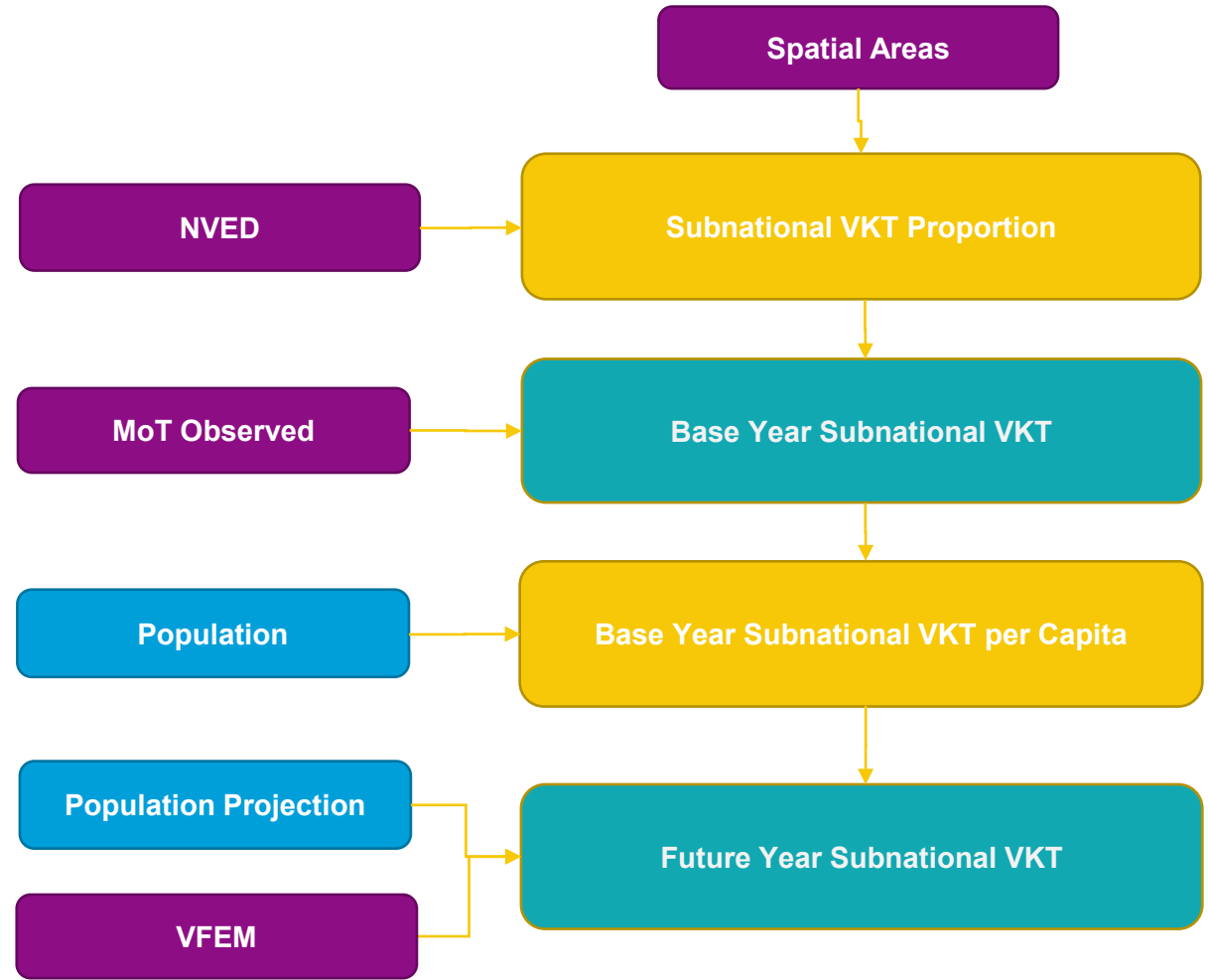
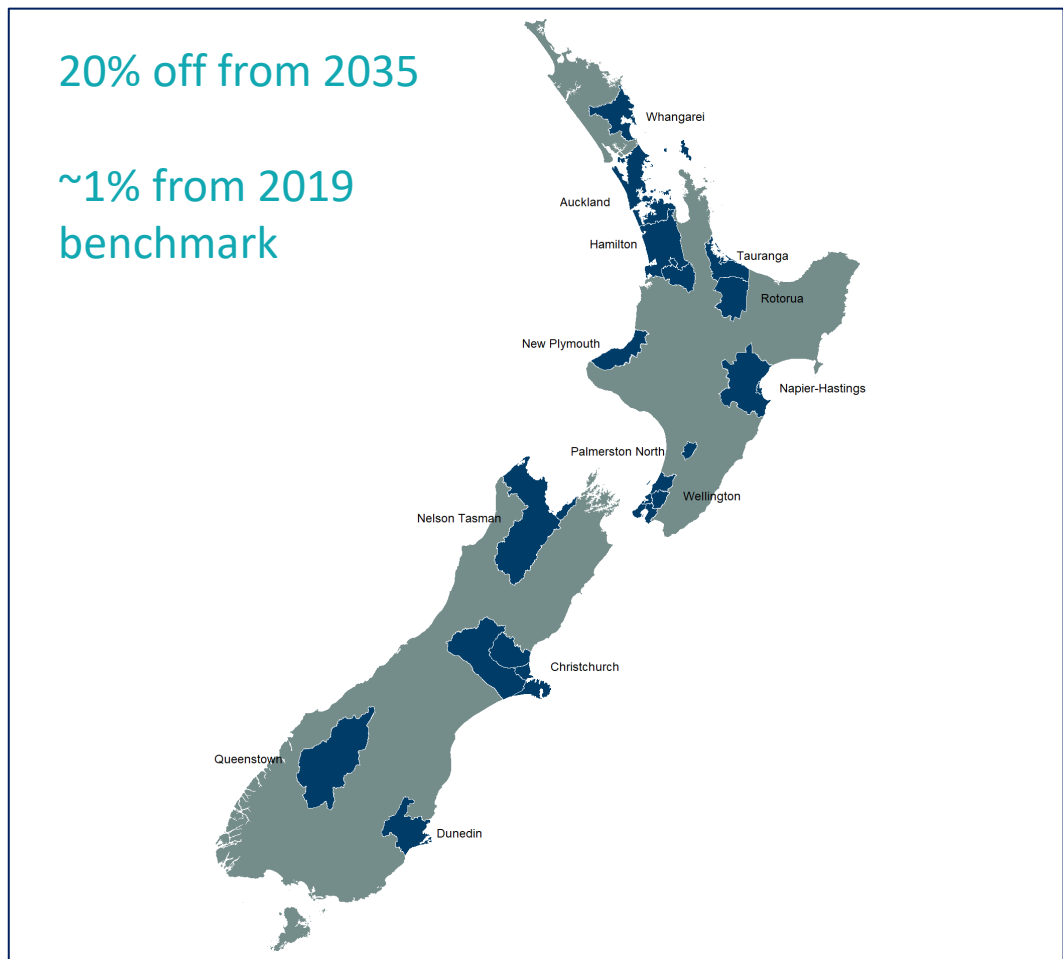
	Auckland	Christchurch	Wellington
<b>Inputs Considered</b>	Household (by type), Employment (by type), Population (by age), School Roll (by type), Air Passenger, Special Services (e.g. hospitals and parks)		
<b>Model Base</b>	2018	2018	2013
<b>Model Future</b>	2038	2028 / 2038	2036
<b>Modelled Periods</b>	AM, IP, PM	AM, IP, PM, ON	AM, IP, PM



# Feature Assessment

- Fulltime Employment
- Working Age Population
- Petrol Elasticity
- Historical RAMM
- Transport Model Outputs

# Adopted Methodology



# Future Improvement Opportunities

- Additional Features:
  - Transport model outputs
- Increase complexity on national level adjustment factors

**Thank you!**

