

Propensity to Cycle Tool

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Content



The Problem



PCT tool



Application

Planning problem

A Short History of Traffic Engineering

In industrialised cities:

Before 1920: the compact city

Walking and cycling are the dominant modes of transport. Public transport has an important role in getting people from A to B.

1920 - 1950

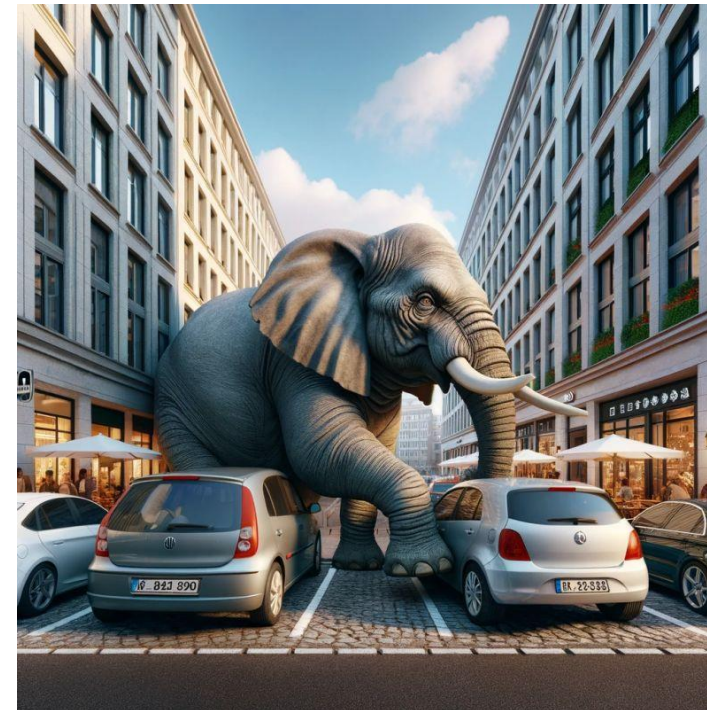
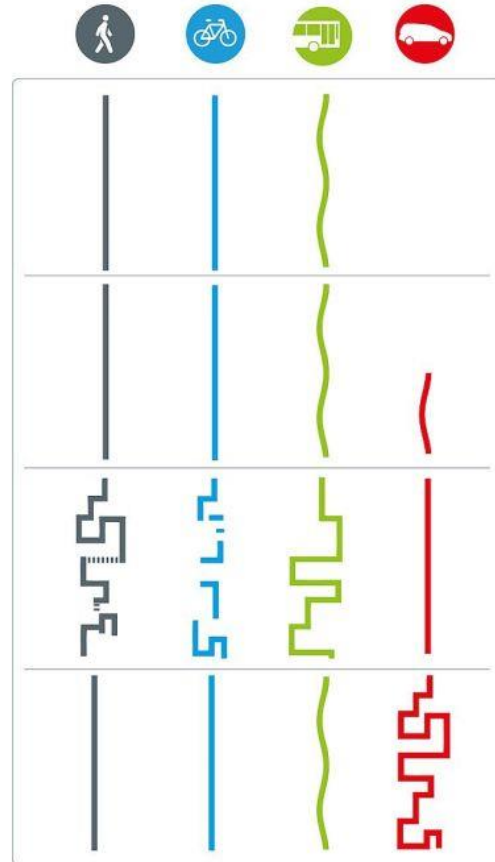
Walking, cycling and public transport are still the most common modes of travel. The car appears in the city and has to adapt to the built up structure.

From 1950: the car-oriented city

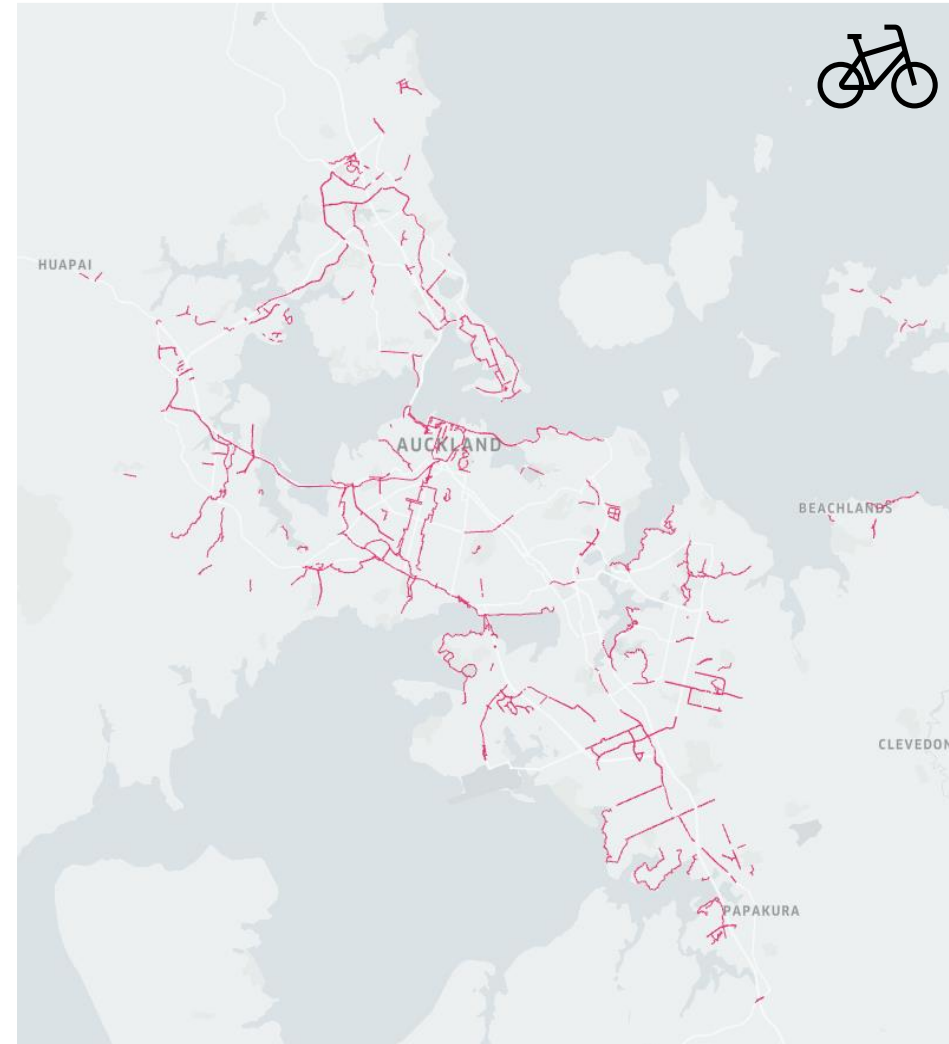
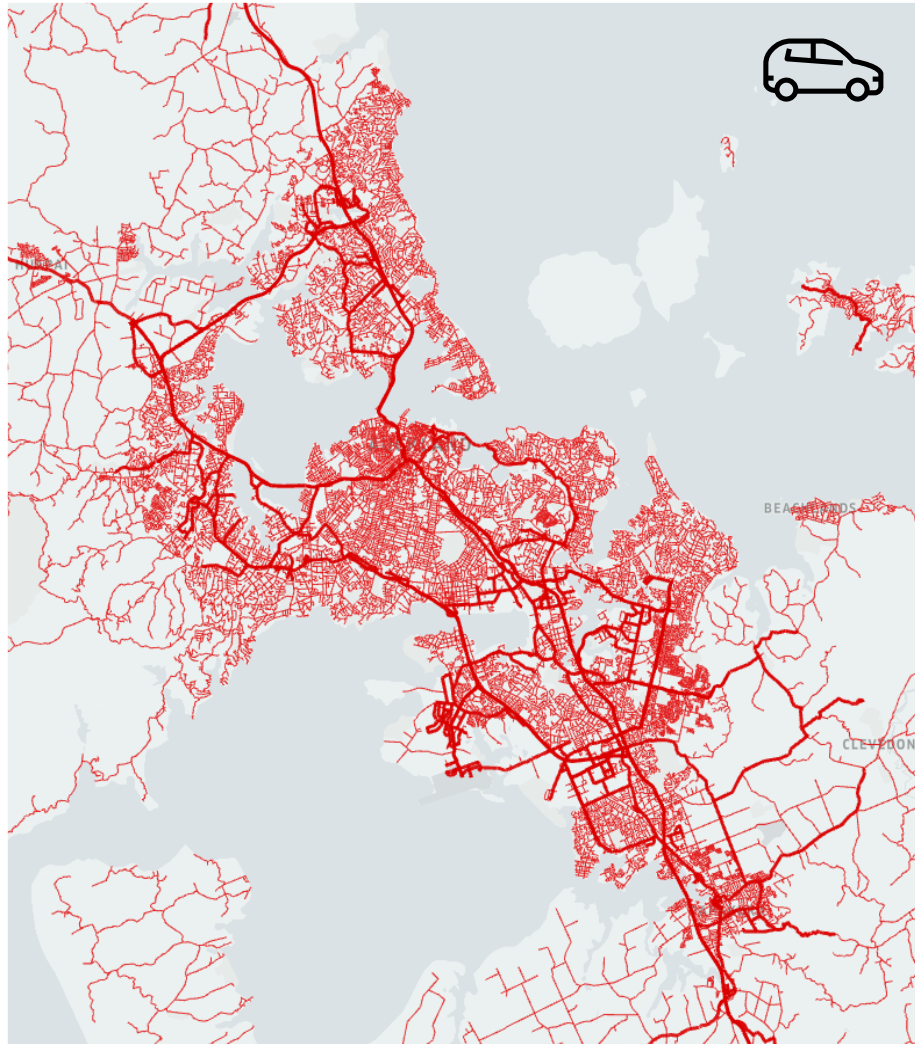
The car is prioritised in planning. Every other mode of transport is subordinated to the car and has to adapt.

Planning for the livable city

In order to achieve a livable environment the sustainable modes of transport need to be prioritised.



The grid



Good quality cycleways attract cyclists but unless they are connected to where people live and work, they will not increase mode shift within a city

Fair distribution of road space



Photo Credit: Melanie Skelany

Insufficient data



'You can't justify a bridge by the number of people swimming across a river'

~ Brent Toderian

Propensity to Cycle Tool



Highline, New York



Williamsburg Bridge, New York



Cycle super highway, London



Cycling in Seville

There are some great examples of smart, innovative cycling and walking schemes happening across the world, right now. We have lots to learn from and aspire to.



Cargo bikes, Copenhagen



Malmö

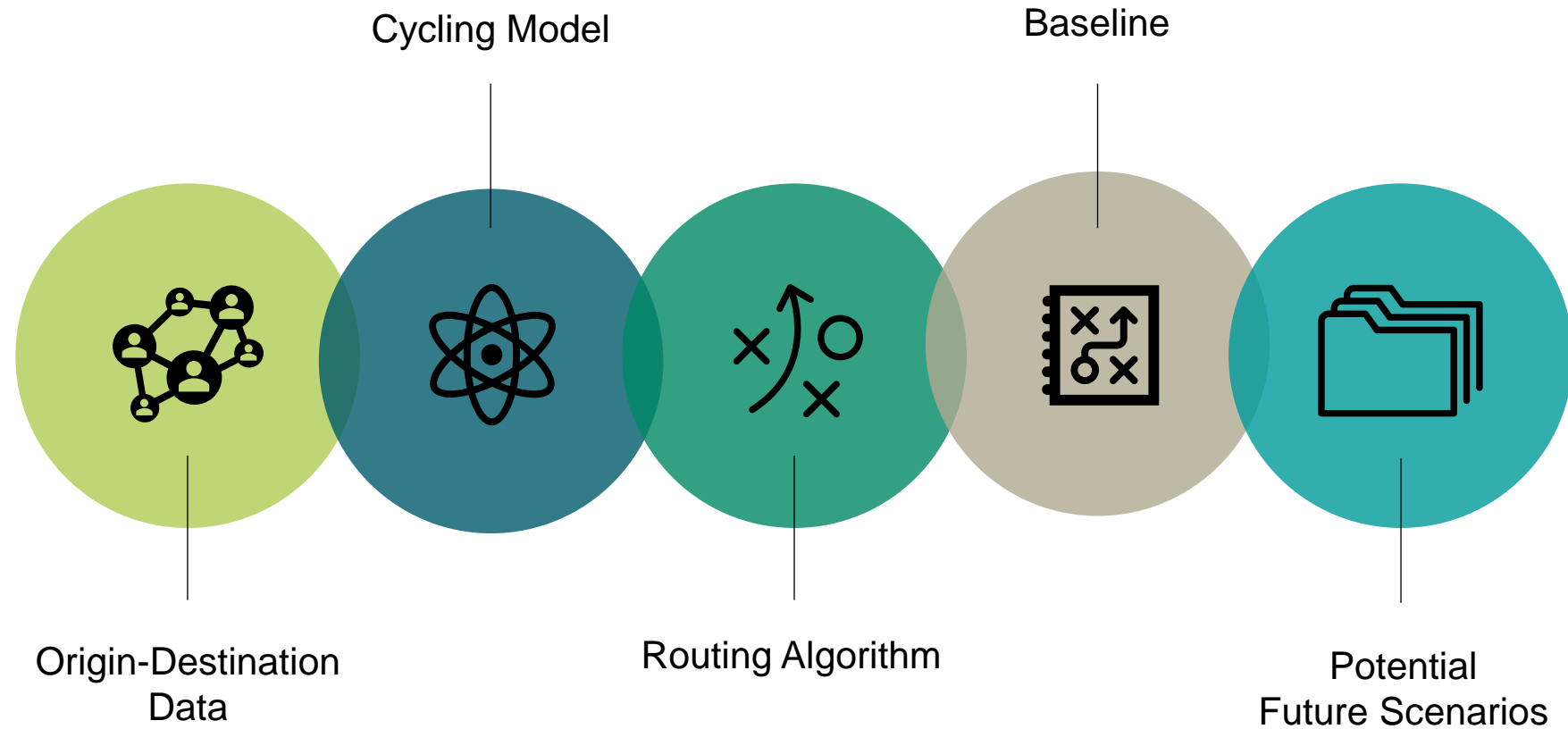


London



Sykestrømen, dedicated cycling bridge, Copenhagen

PCT Approach



Inputs and Process

1

Geographical Areas and Centroids (SA2)

Cycling Network (OSM)

Census 2018
Origin-Destination Data

Baseline
Propensity

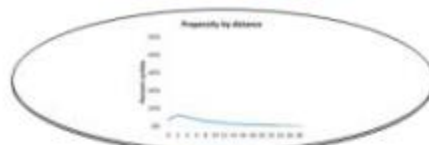
Baseline 2018
Cycling Data

Routing Algorithm
(CycleStreets)

Baseline
Routing

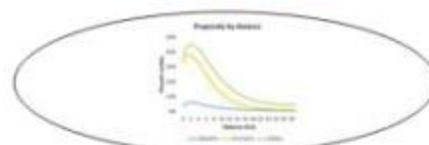
Baseline Scenario

2



Future Scenario Development

3



Retain Core
Mobility Data

Apply Go Dutch
Propensity To NZ Data

Calculate
Scenario Demand

Rerun Routing Algorithm
With Scenario Demand

Produce Routing
Scenario Outputs

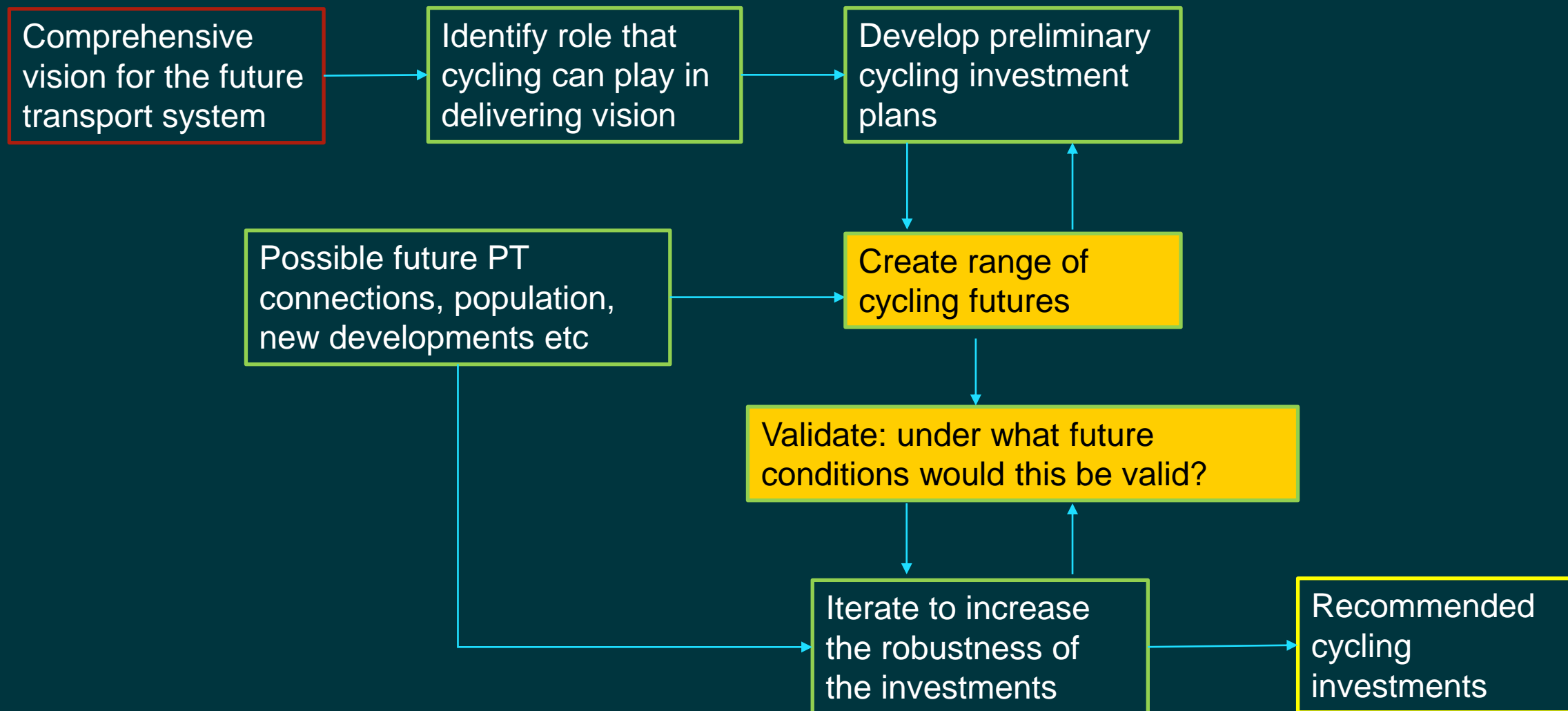
4

Scenario
Inputs

5

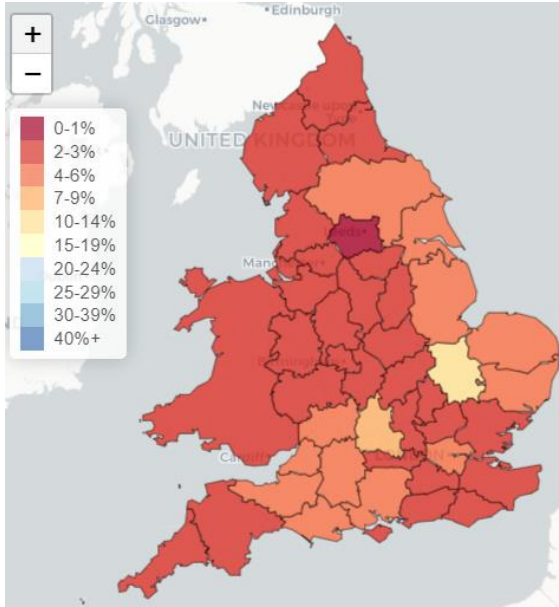
Scenario
Outputs

The 'Vision & Validate' Process

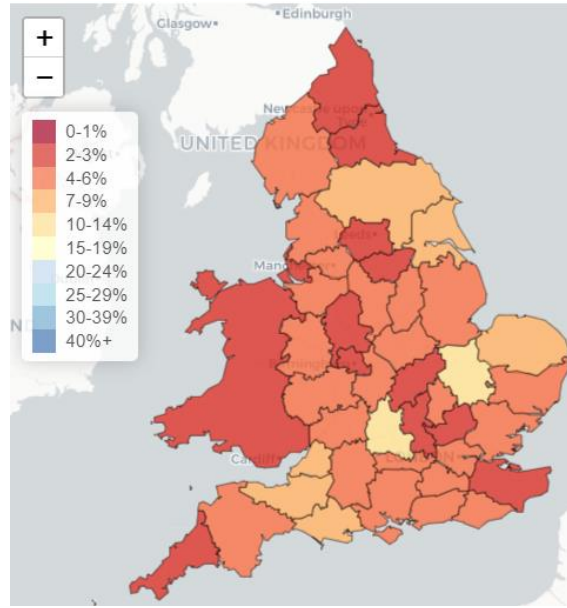


Scenarios- what if

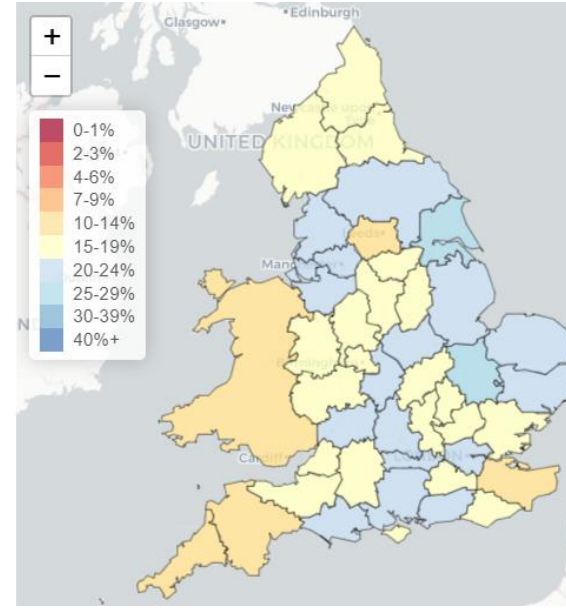
Baseline



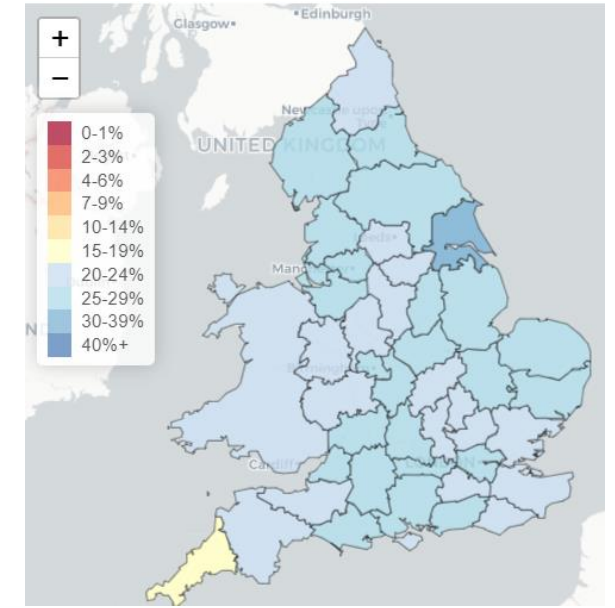
Gender Equality



Go Dutch

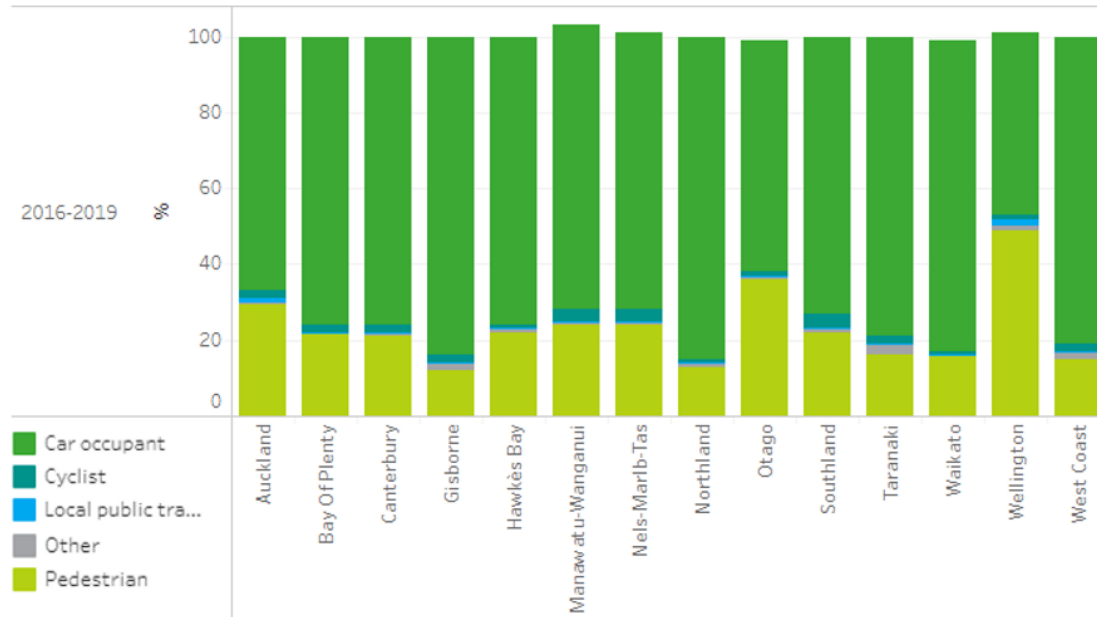


Ebike



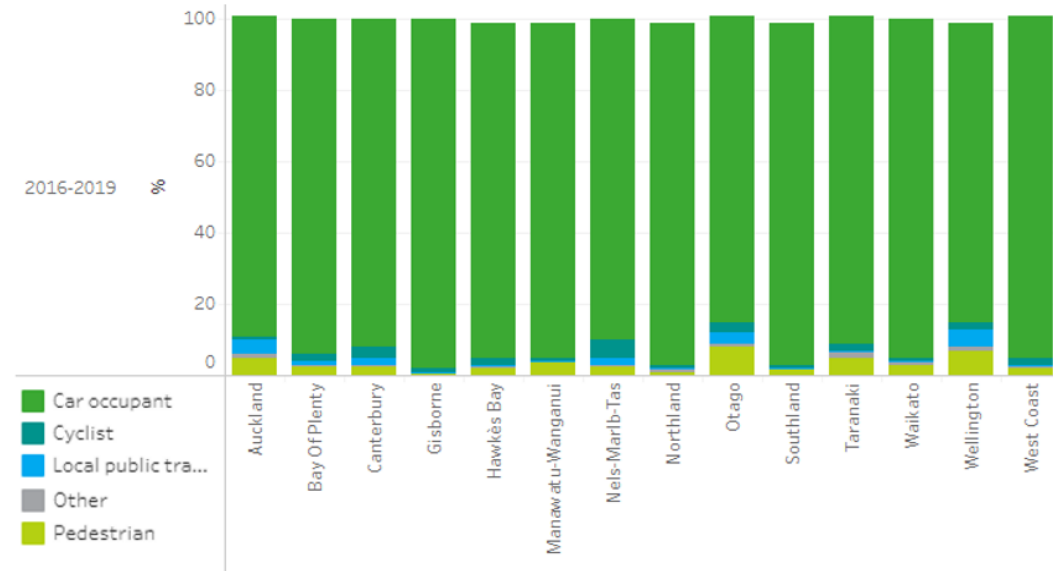
Latent Demand opportunities

Mode share of very short trips (<2km) by region.



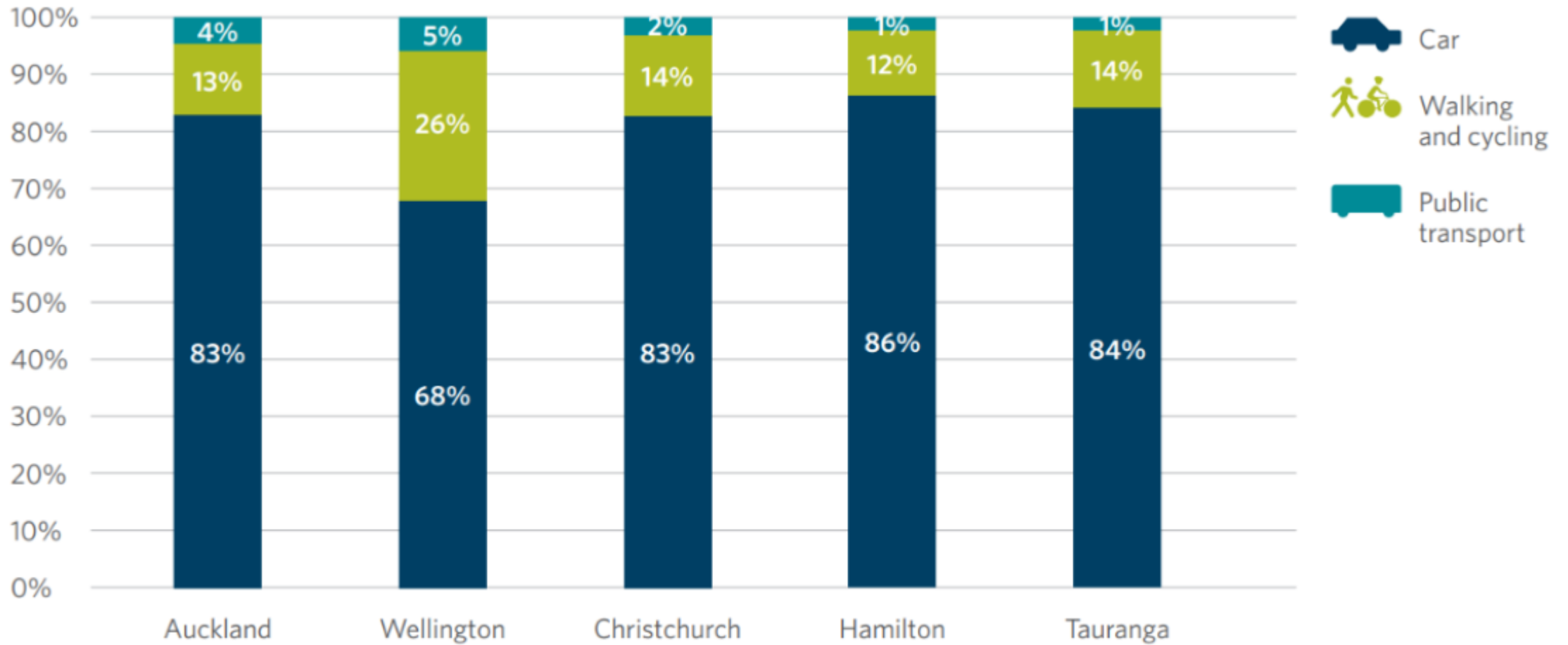
<2km

Mode Share of short trips (2-5km) by region.



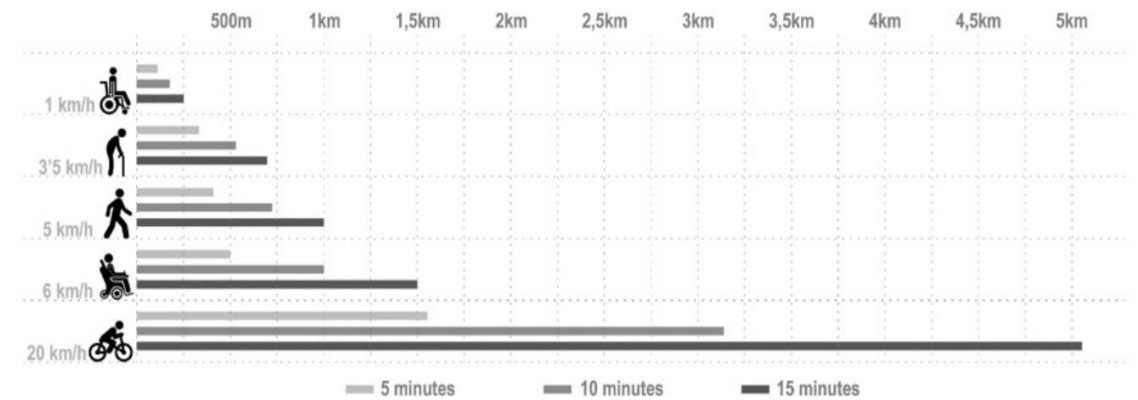
2-5 km

Study area



SOURCE: New Zealand Household Travel Survey data (2014-2018)

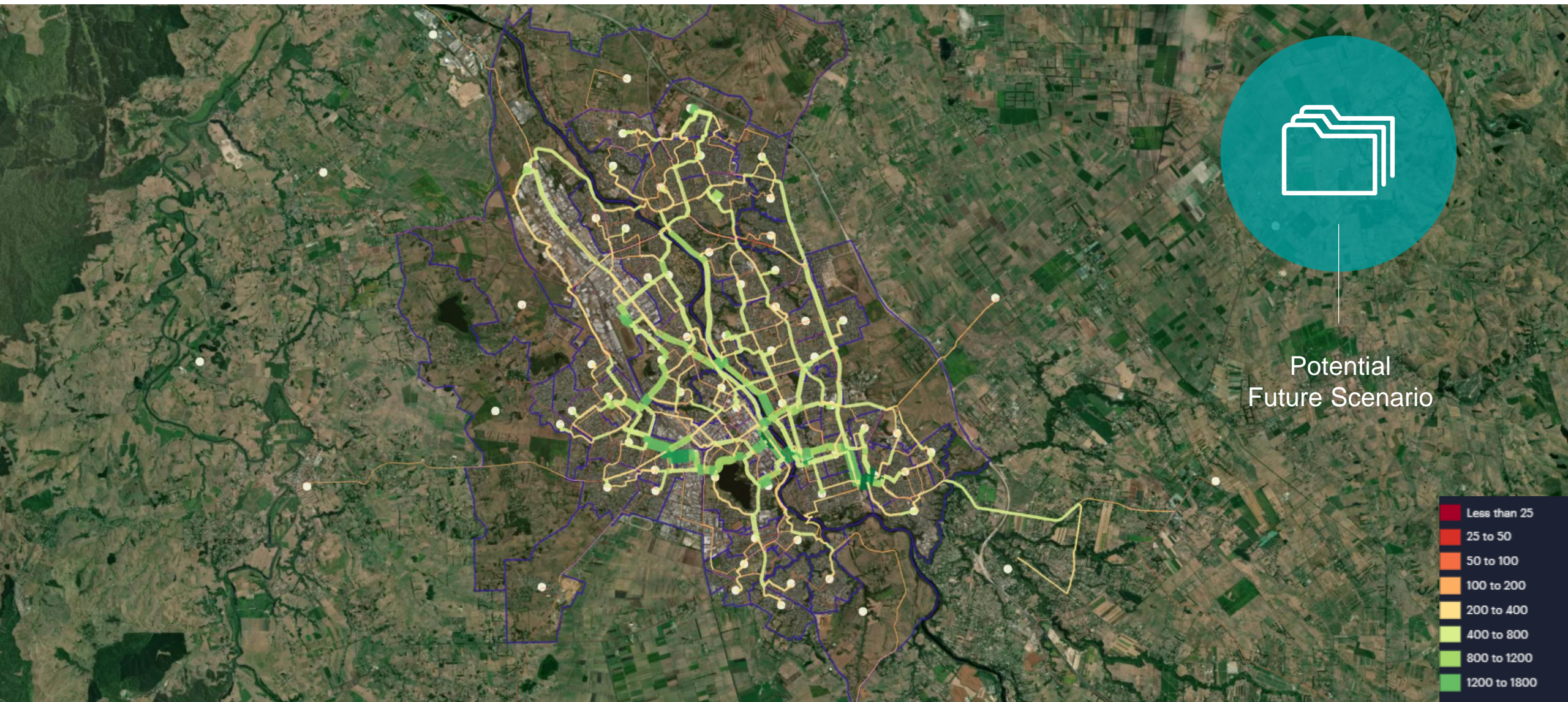
Distance profiling all demand (<5km)



Baseline Census 2018 (Work and Education) + Strava (HCC)

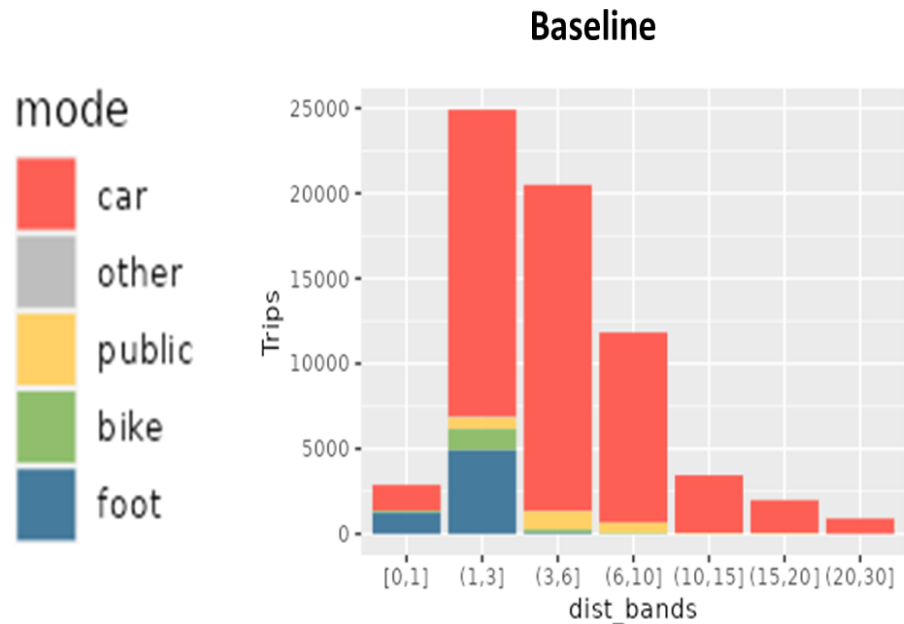


Ebike Fast Routes (using Census 2018 Data)

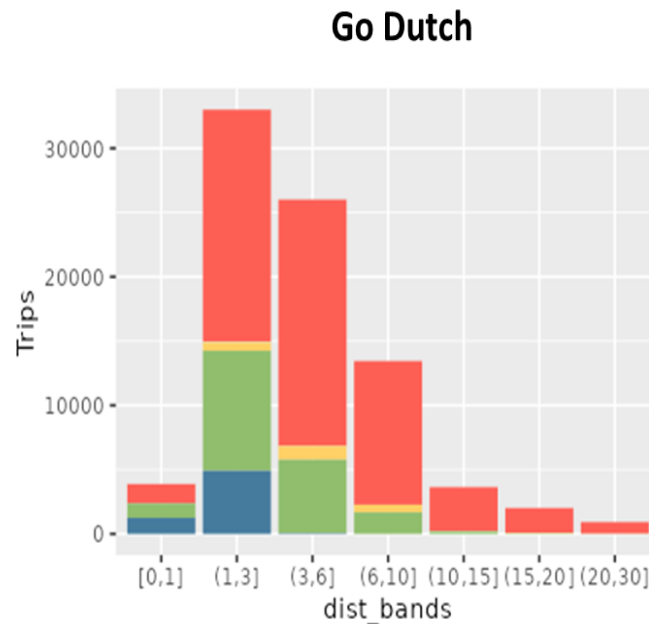


Key findings

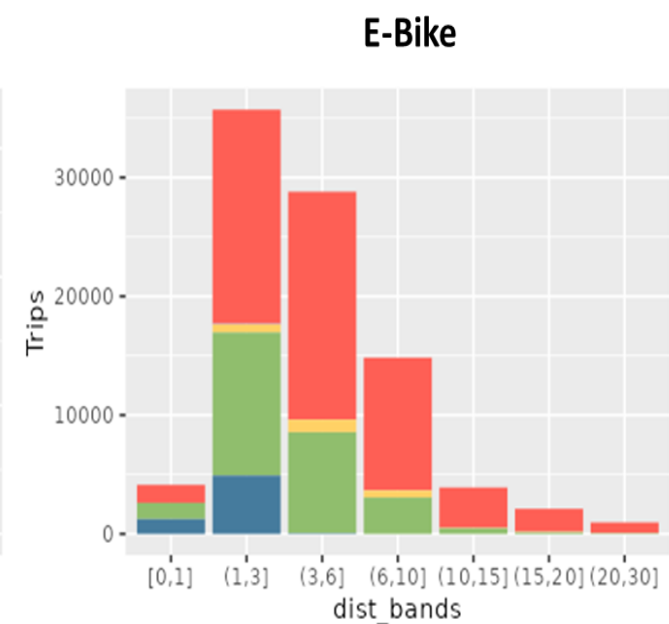
- Opportunities to understand the different scenarios of cycling uptake to transition to a low-emission and climate-resilient future.
- Useful throughout cycling network planning and investment lifecycle.
- It provides strategic and smaller-scale insights about prioritising high-quality cycling infrastructure.



2% cycle mode share



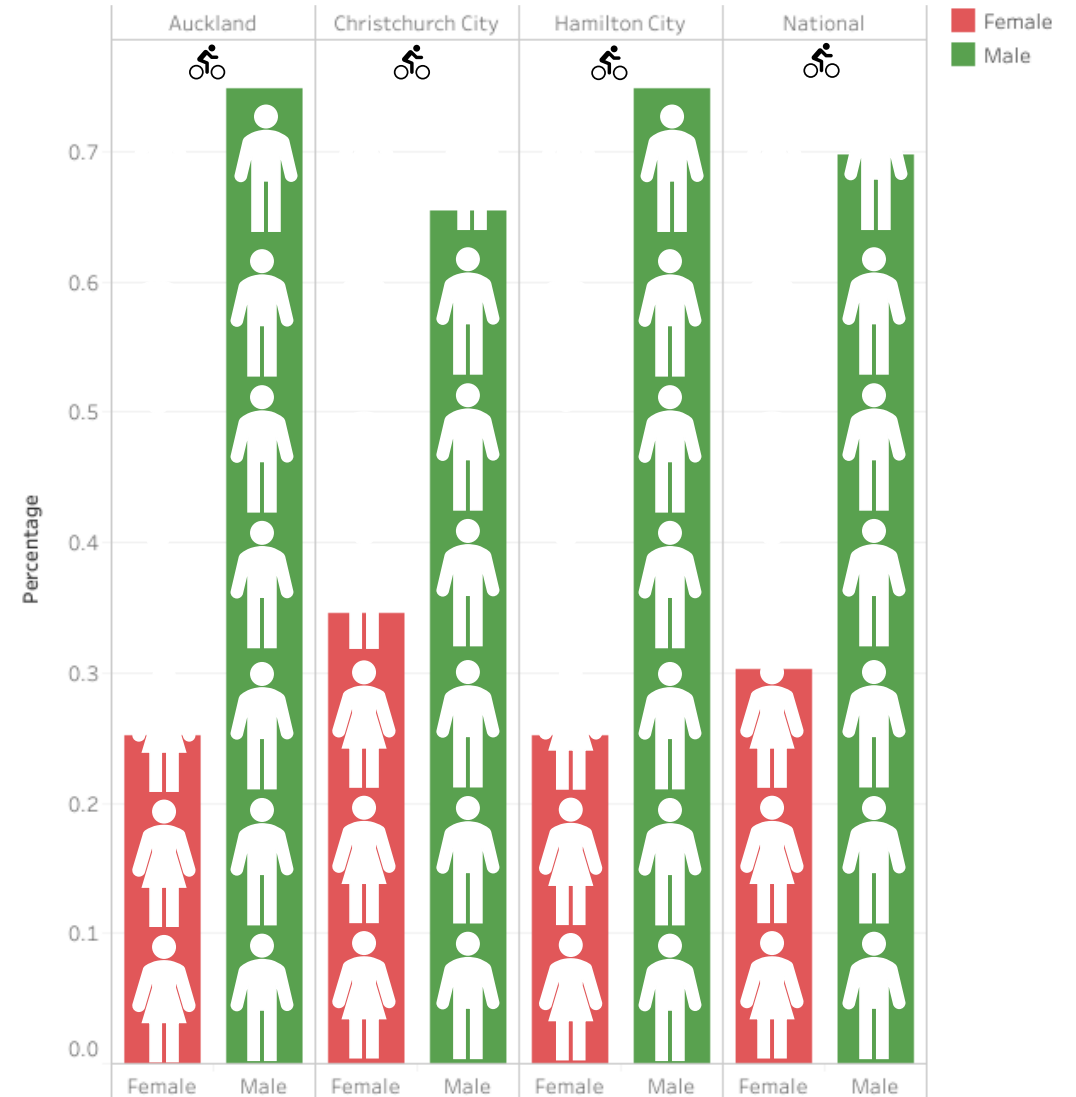
23% cycle mode share



33% cycle mode share

Potential Next Steps

- Individual level approach where age, gender, ethnicity, car ownership and area level of deprivation affect likelihood to switch to cycling
- “Gender equality” approach which assumes women become as likely as men are currently to cycle within each O-D pair
- Develop corresponding health and CO2 benefits for each scenario
- Expand to Auckland, Tauranga, Wellington and Christchurch or Nationwide



Make the change

- 👍 Provide the infrastructure, both push and pull
- 👍 Tapping into transport synergies
- 👍 Educate and inform
- 👍 Implement cycling policy



Thank you.