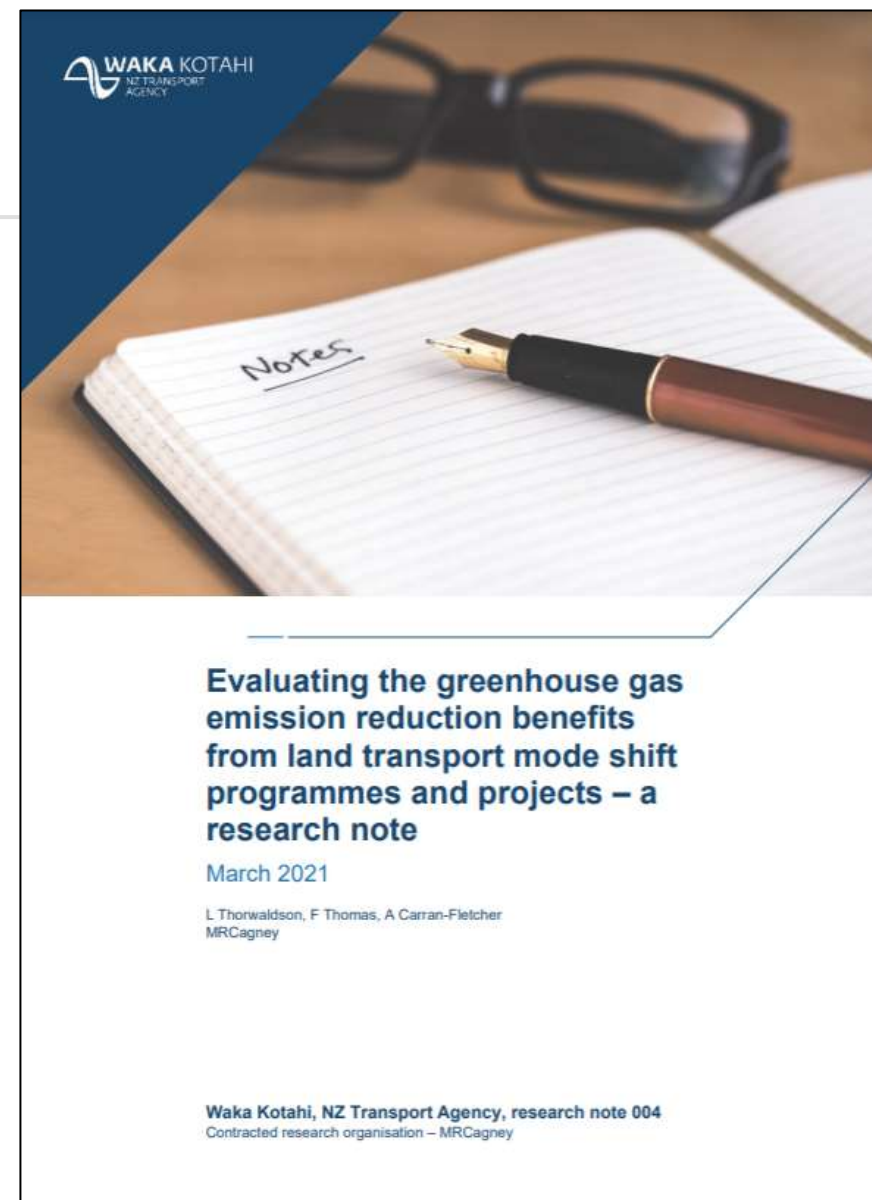


Emission Impossible? Measuring transport's GHG impacts

Transport Group Conference
May 2021

Introduction

- Our research approach
- Case study highlights
- Relevance to New Zealand



Approach

Part 1: Are
reductions being
measured?

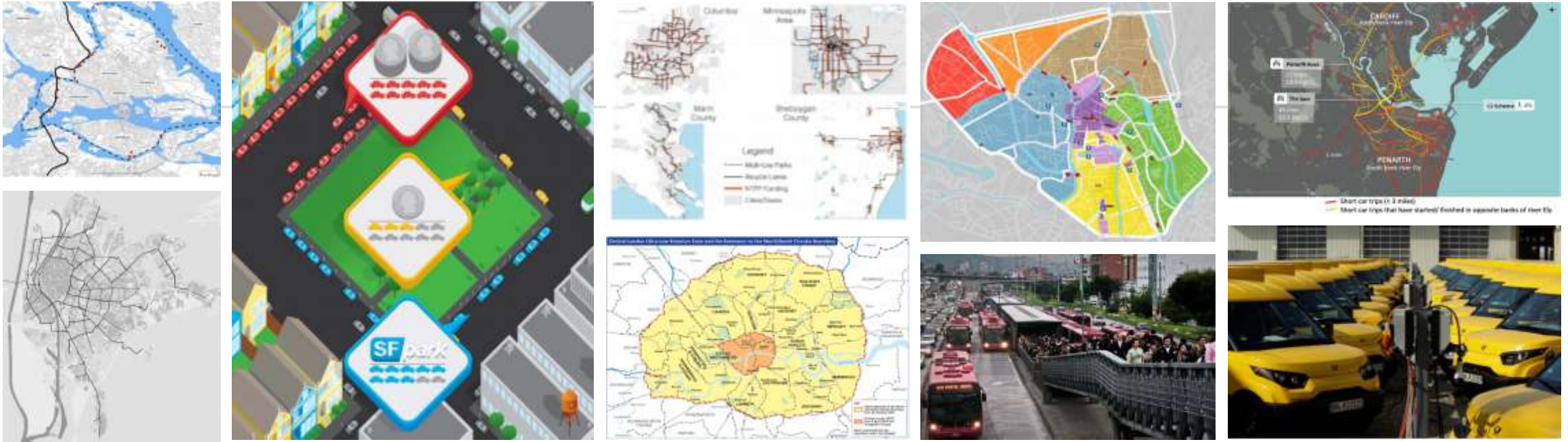
Approach

Part 1: Are reductions
being measured?

YES!

(but VKT is the key)

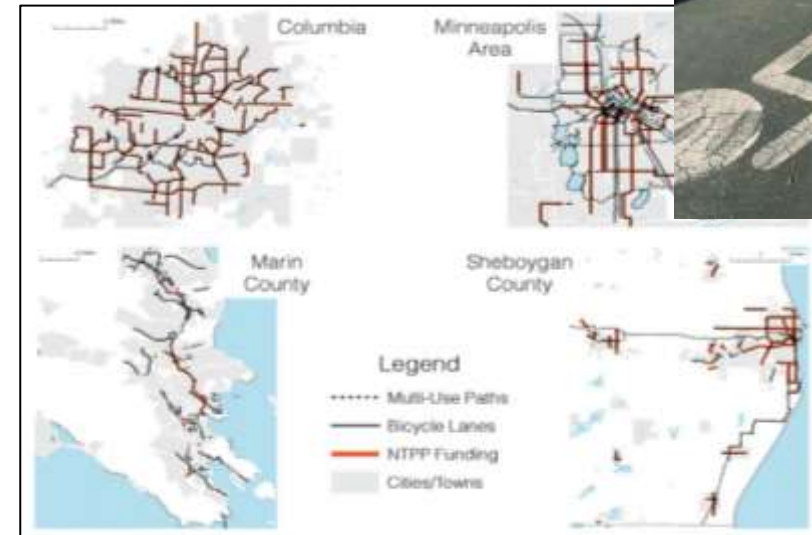
Part 2: What
are the
results?



16 Case Studies

Investment Types:

- Bus Rapid Transit
- Integrated transport and landuse Planning
- Transit Oriented Development
- Congestion Pricing
- Rapid cycle network rollout
- Demand responsive parking
- Parking cash out
- Urban logistics
- Walking and cycling programmes
- Commute Trip Reduction programmes



Key findings



- Varied measurement methods

Key findings



- Varied measurement methods



- Many interrelated factors affecting outcomes

Key findings



- Varied measurement methods



- Many of the case studies come from the United States



- Many interrelated factors affecting outcomes

Key findings



- Varied measurement methods



- Many of the case studies come from the United States



- Many interrelated factors affecting outcomes



- No New Zealand or Australian case studies

Case Studies

- What was the project?
- How did they measure emissions reductions?
- How can this inform New Zealand's decarbonization efforts?

Boulder, Colorado

1996: No long-term growth in vehicle travel over 1994 levels

- Public transport (bus)
 - Increased frequencies and services
- Active mode
 - Cycle facilities on 95% of arterial streets
- Parking management
 - Reducing drive alone rates

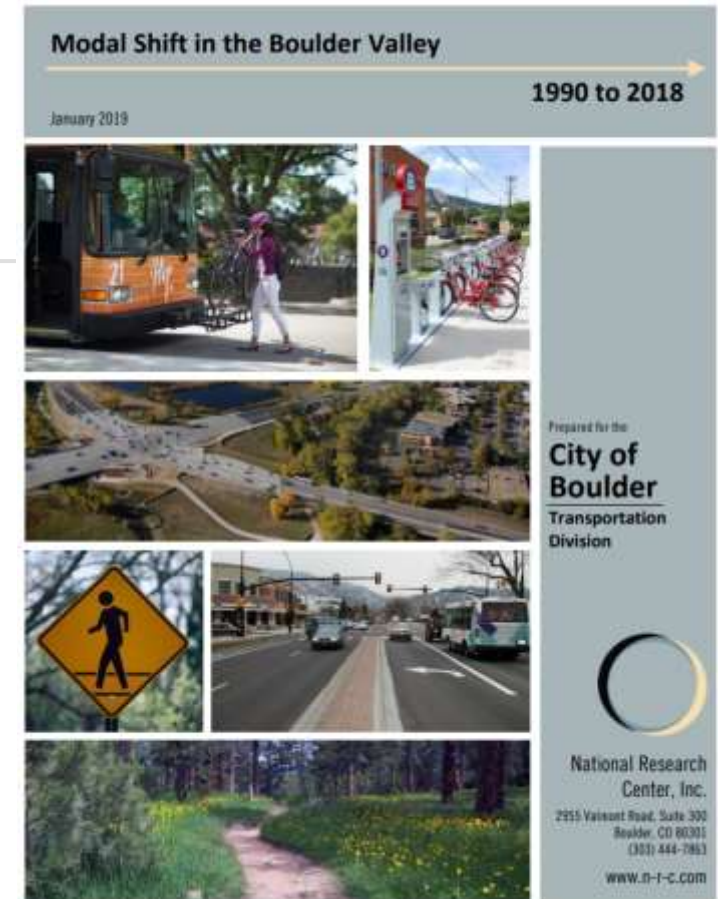
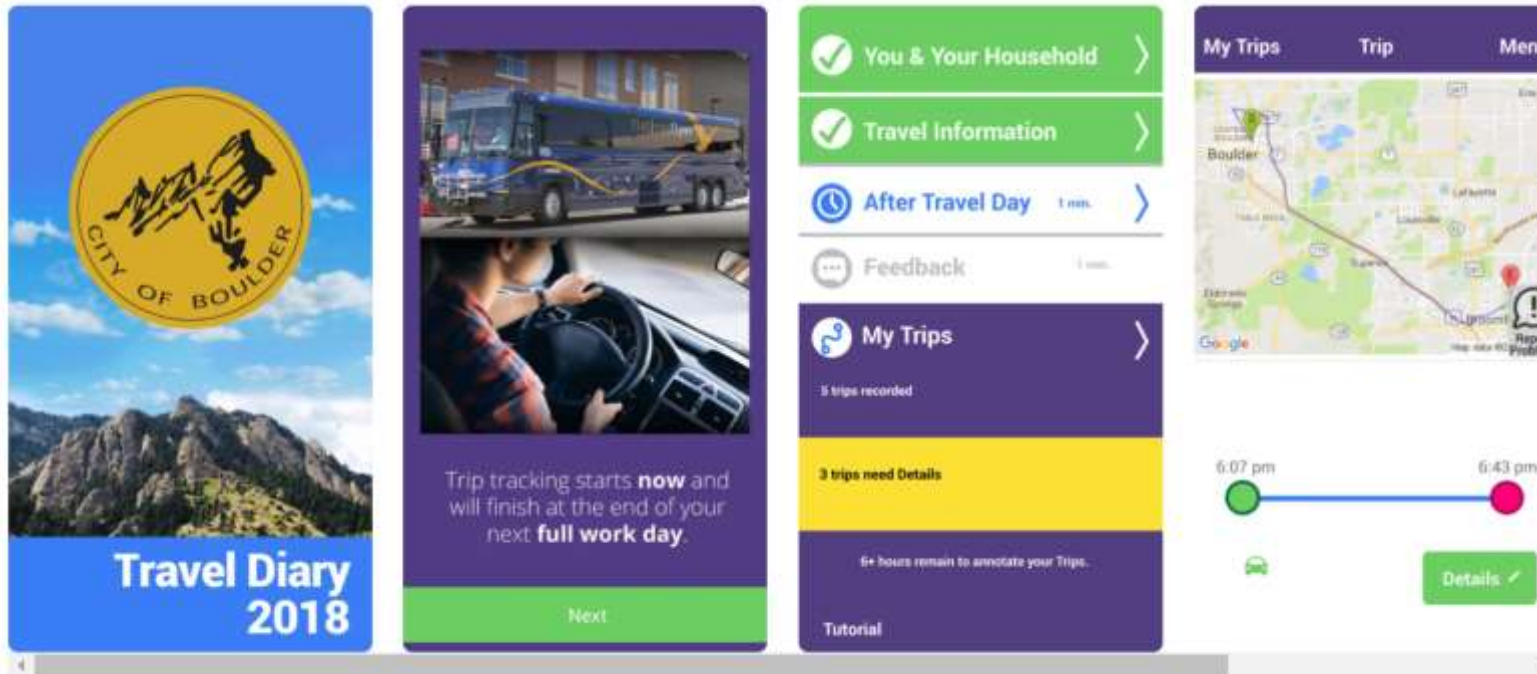


Boulder, Colorado - EcoPass

- Annual transit pass – unlimited rides on local and regional services
- Bulk discount only available through
 - employers
 - university
 - neighbourhoods



Measurement Methodology

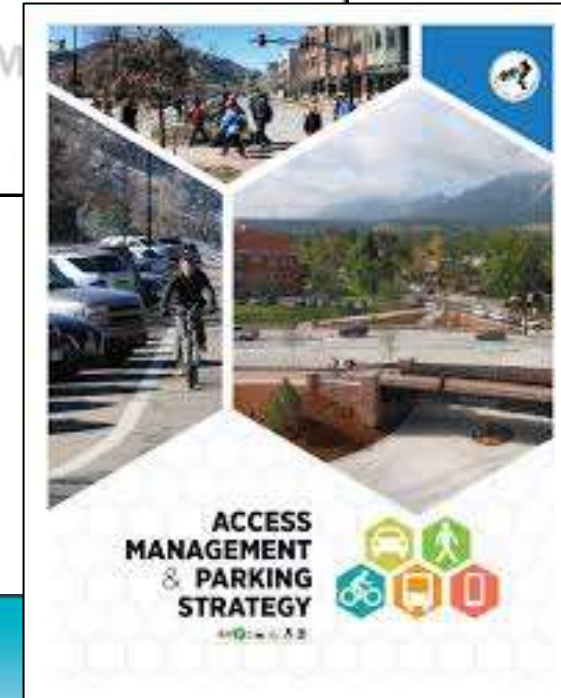


Boulder, Colorado - outcomes

- Returned VMT to 1994 levels by 2009
- By 2016 GHG emissions estimated to be 30% lower than without interventions
- 19% reduction in annual VMT per capita 1990 -2018
- EcoPass holders demonstrated comparatively 40-55% fewer emissions

Relevance to New Zealand

- Bulk public transport passes
 - Universities
 - Employers
 - Neighbourhoods
- Strong target setting and monitoring programmes
 - Measuring VKT
 - “If you don’t count it, it doesn’t count”



Cargo bikes for urban logistics

Cambridge, UK



Nuremburg, Germany



Brussels, Belgium



Cambridge, UK

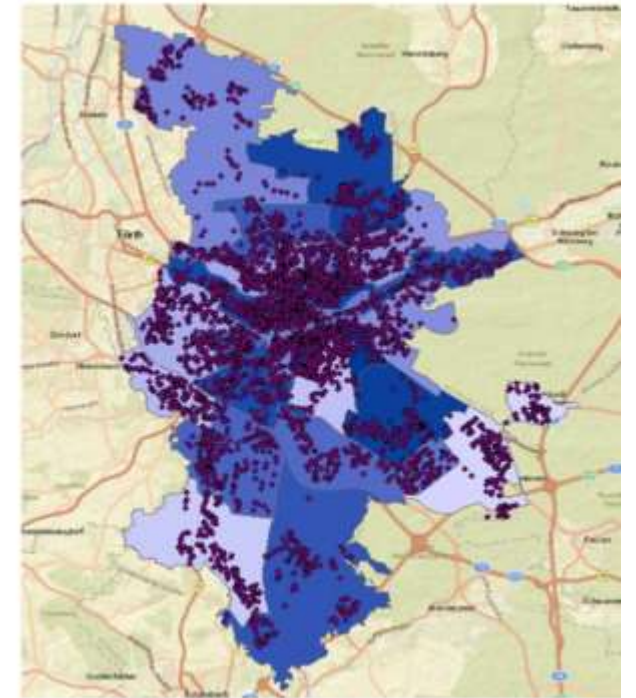
Saved an estimated 45 tonnes of CO₂



Nuremburg, Germany



Saved an estimated 56 tonnes of CO₂



Brussels, Belgium

24% reduction in CO₂ emissions

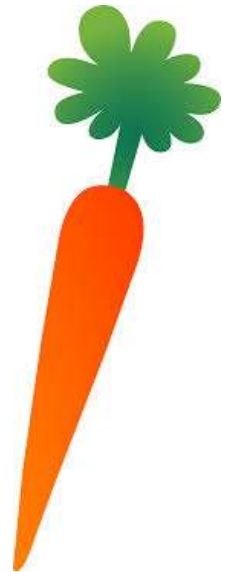


Policy levers

- Low emissions zones
- Vehicle size and weight restrictions
- Congestion charges
- Parking restrictions
- Time restrictions



- Coordinated pro-cycling policies
- Cycling infrastructure
- Micro-consolidation centres
- Cycle logistics friendly tenders



Relevance to New Zealand

- E-bike power regulations
- Infrastructure design
- Procurement
- Existing services



GO ECO goeco.org.nz

SAME DAY
ZERO EMISSIONS
PICK UP & DELIVERY

**Bike
Delivery
Service**

\$5 INC GST

FOR STANDARD
PICK UP AND
DELIVERY AROUND
THE CITY CENTRE

BOOK ONLINE **goeco.delivery**
Enquires to Felix@goeco.org.nz

The advertisement features a black background with yellow and white text. It includes a photo of a delivery person on a bicycle with a cargo box. The logo 'GO ECO' is prominent in the top left and middle right.



Case studies continued

California TOD Study

OR

Stockholm Congestion Pricing?

California TOD Study

- Household Travel Survey of 40,000 households across income groups.
 - **Extremely Low-Income (ELI)** – Households earning 30% or less of MFI
 - **Very Low-Income (VLI)** – Households earning 50% or less of MFI
 - **Low-Income (LI)** – Households earning 80% or less of MFI
 - **Moderate Income** – Households earning between 80% and 120% of MFI
 - **Higher Income** – Households earning more than 120% of MFI

Public Transport accessibility

- California Department of Housing and Community Development TOD Areas:
 - ¼ mile from frequent rail/ ferry station or frequent bus stop (10-min headways)
- High Quality Transit Areas (HQTAs):
 - ½ mile from any rail/ ferry station, or 15-min headway bus stop

Measurement methodology

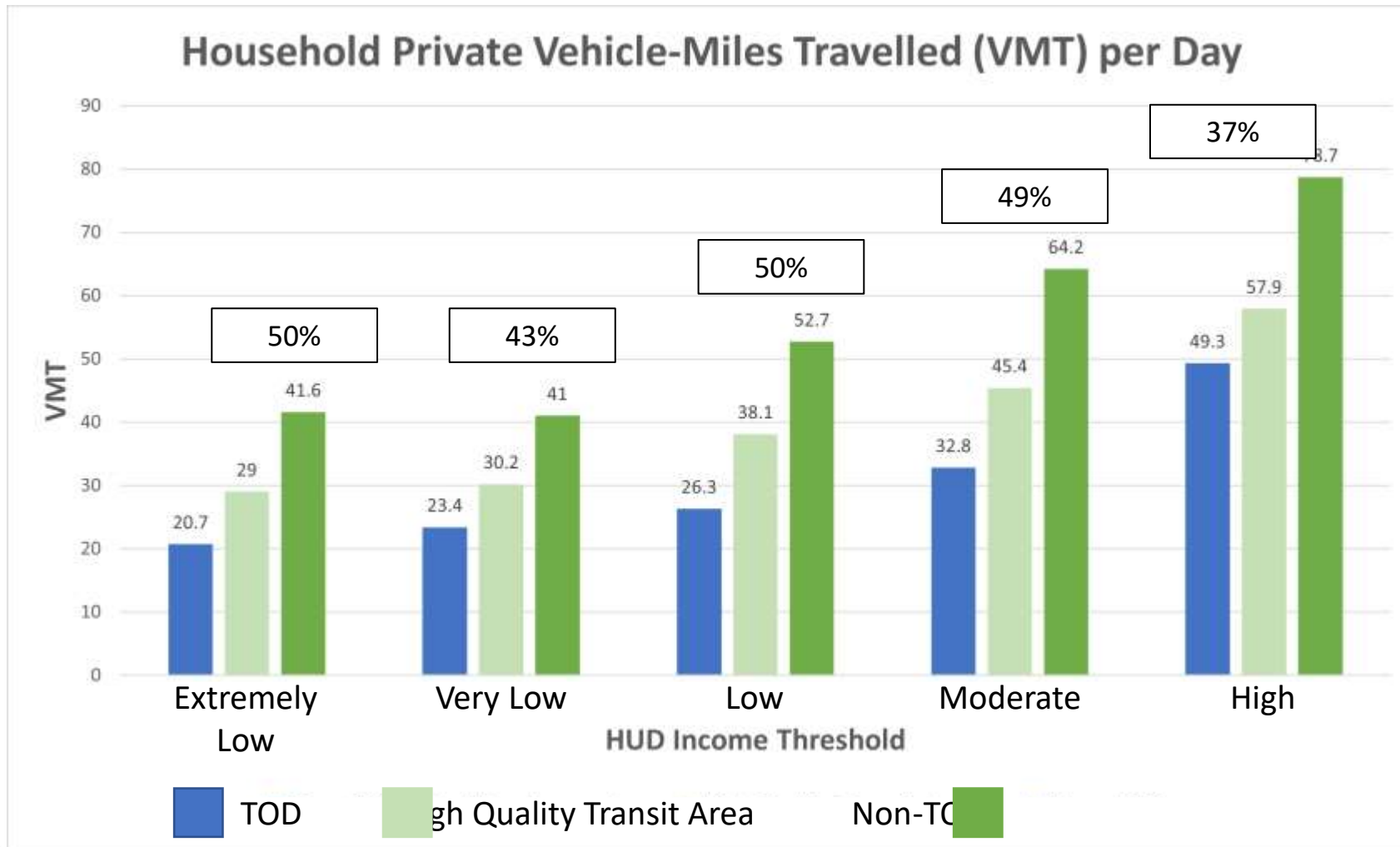


VMT FROM ONE-DAY TRAVEL
SURVEYS



BETWEEN FEBRUARY 2012 AND
JANUARY 2013

Outcomes



% difference non-TOD to TOD

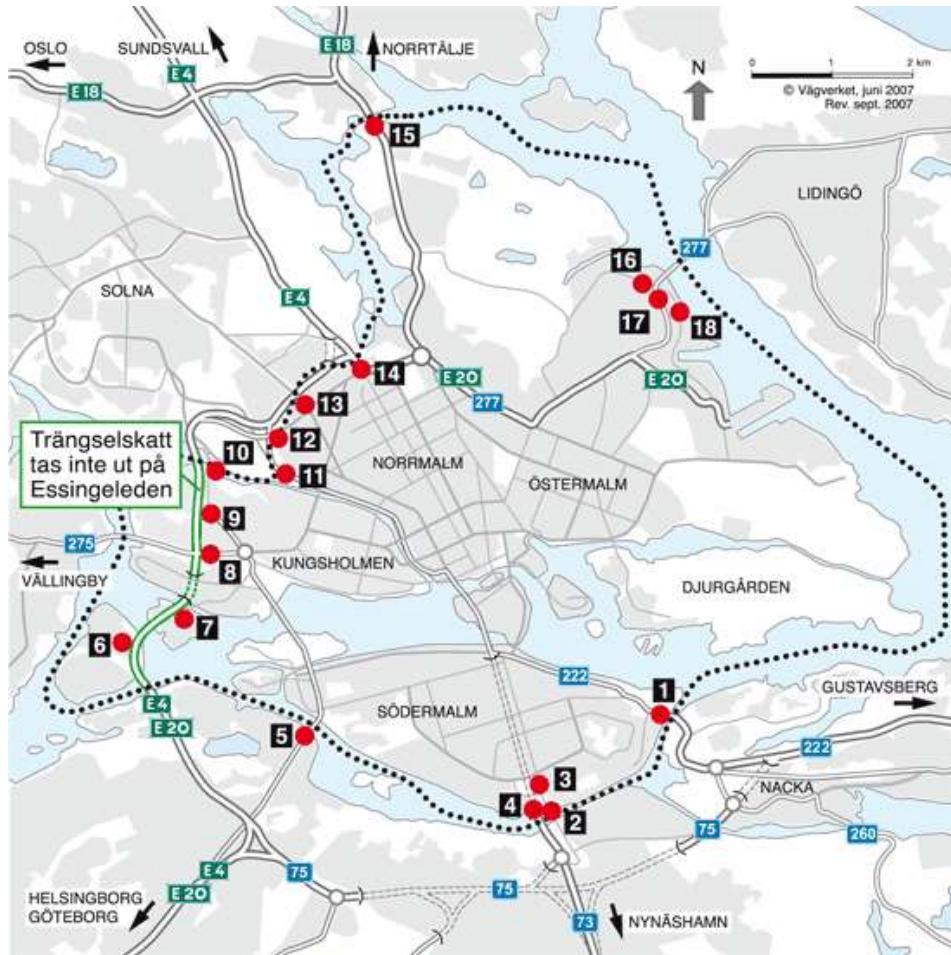
Relevance to New Zealand



Stockholm



What it was



Intervals Stockholm city centre as from 1 January 2020

Hours	Off-peak season tax amount in SEK	Peak season tax amount in SEK
6:00–6:29	15	15
6:30–6:59	25	30
7:00–8:29	35	45
8:30–8:59	25	30
9:00–9:29	15	20
9:30–14:59	11	11
15:00–15:29	15	20
15:30–15:59	25	30
16:00–17:29	35	45
17:30–17:59	25	30
18:00–18:29	15	20

Measurement methodology



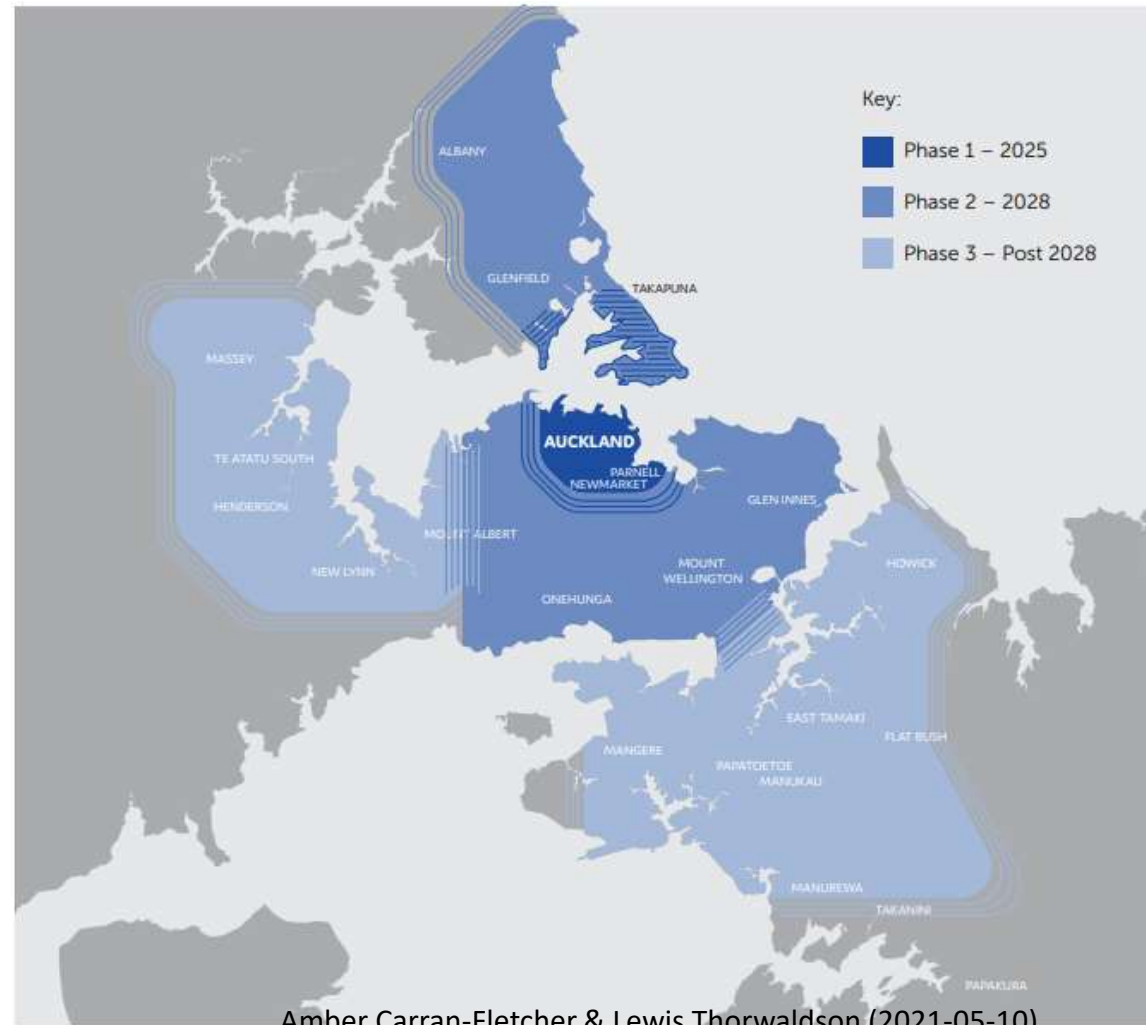
Outcomes



“Stockholmers,
where did you go?”

20% reduction in
traffic crossing the
cordon

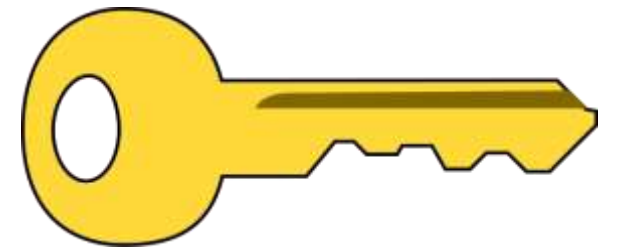
Relevance to New Zealand



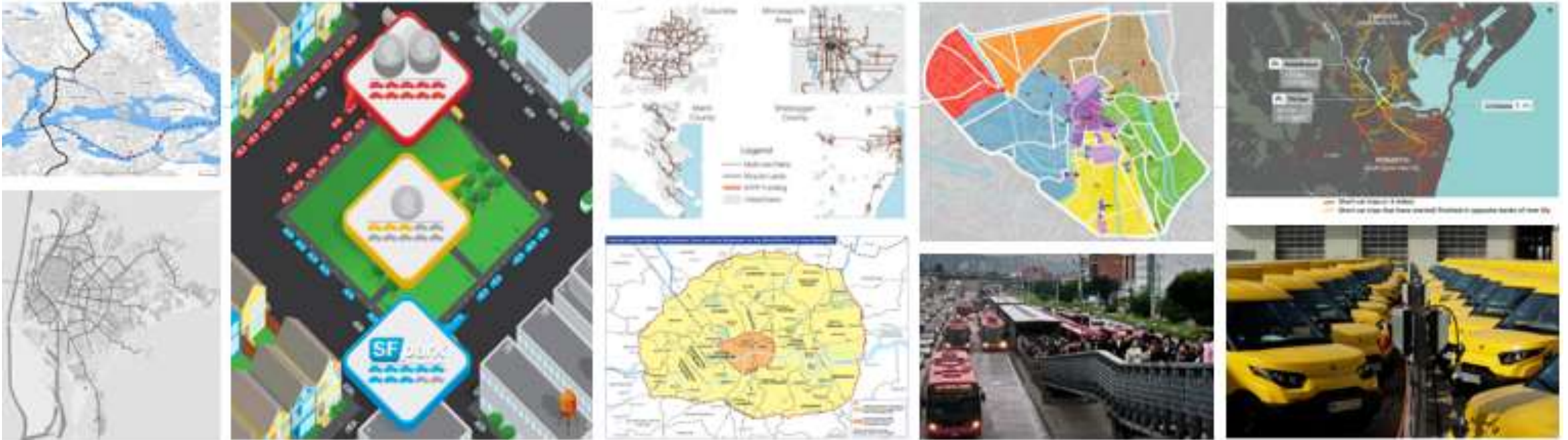
Indicative phases of Auckland congestion pricing scheme – The Congestion Question (2020)

In conclusion...

- Secondary research only
- Direct comparison difficult
- Measured results for such a wide range of interventions
- Tie funding to measurement
- And remember – Measuring VKT is the Key!



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