Attachment 1

Using Data for Behaviour Change

Changing departure time and mode choice using data

Auckland Transport
An Auckland Council Organisation

Executive Summary

- Our challenge
  - Auckland's roads are highly congested at peak times
  - Could data be used to change driver behaviour, and reduce congestion?
- Our solution
  - We displayed journey time (JT) data to motorists along Onewa Road
  - We also ran a communications campaign to promote it
- Our results
  - 10% of drivers who saw the JT signs changed how they commuted
  - Bus patronage increased by 3.5%. Peak hour car journey times fell by 4%
- Our conclusion
  - Our Onewa Road trial was a success
  - CCTV and JT has since been installed on other heavily congested roads
  - AT are investigating other locations where this technology could be used

Our challenge – The Why

- Auckland's roads are highly congested at peak times
- One of Auckland Transport's goals is to shift people out of private vehicles onto different modes of transport. Why?
  - To reduce the need for expensive capital infrastructure roading projects (or delay them)
  - To improve our customers' journey times and satisfaction

Our purpose – The Trial

- To test if we could use data to:
  - Reduce congestion on Onewa Road by encouraging residents to change their transport behaviour
- To identify if we encourage car commuters to:
  - Switch from travelling by private car to using bus services
  - Use a ride-share/car-pool option instead
  - Change their travel departure times
- To run the trial for a short period and quickly assess success / failure:
  - The Onewa Road trial was run from 30 July to 26 August, 2018

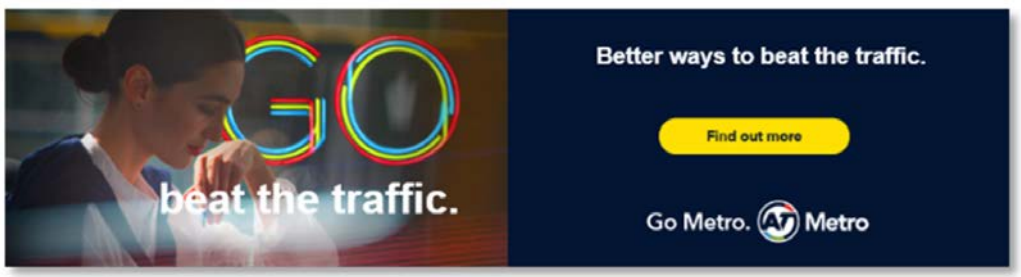
Congestion on Onewa Road

Our solution – The Campaign

- AT's marketing, customer insights, and communications teams collaborated to:
  - Create and distribute material that promoted our Onewa Road trial and its objective
  - Information about our trial was shared with residents via letterbox leaflets, online advertisements, social media and bus stop adverts

Letterbox leaflet

- Promotional content included:
  - Better ways to beat the traffic
  - Making the Onewa Road commute easier



Online advertisement

Our solution – The Role of Technology

- CCTV vehicle journey time data captured via video analytics was published to motorists via variable messages signs (VMS) on the roadside
- The concept is called ‘Using (CCTV) Data to Change Behaviour’, also known as UDBC

Location Overview

Portable VMS signs were located at three points along Onewa Road

Our solution – The Technical Details

- Video analytics were used to measure point-to-point journey times for UDBC:
  - Car number plates were captured via CCTV Automatic Number Plate Recognition (ANPR) cameras
  - Logic algorithms calculated travel times between points / camera locations using the CCTV images
  - Derived real-time travel information was pushed to the VMS
  - Data and messages displayed on the VMS related to the current time and each sign's individual location along the Onewa Road corridor

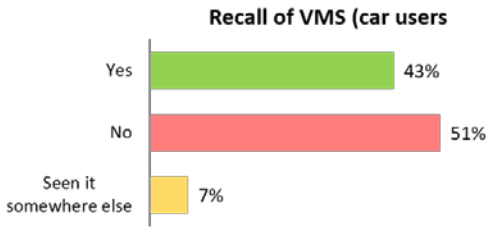
Trailer-mounted VMS – in action on Onewa Road

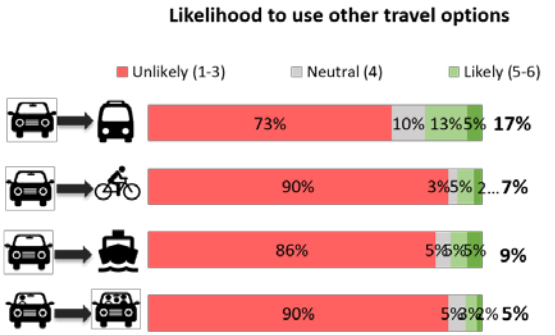
Messages displayed on VMS were alternated

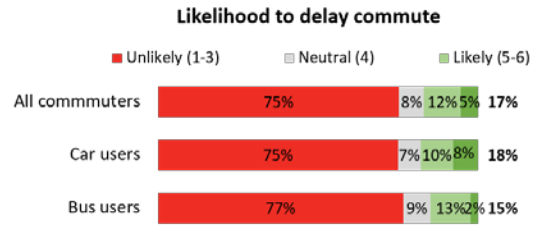
Our results – The Analysis

Key points:

- 43% of respondents recalled seeing the VMS, versus 26% who recalled seeing the advertising campaigns
- One in ten of those who saw the signs said they did something different to their commute, i.e. acted on the message
- Bus patronage increased 3.5% in the trial period compared to the same period the year before
- Peak T1 lane journey time during the trial fell ~4% to 23.4 minutes, from 24.5 minutes in June
- Early morning (7:00am) T1 lane journey time increased to 13.0 minutes, from 11.3 minutes in June







Our results – The Analysis

Our conclusion – The Future

Our original challenge:

- Could data be used to change driver behaviour, and reduce congestion?

Our UDBC trial was a success:

- Our analysis showed that UDBC did lead to some behavioural change
- This in turn led to congestion improvements on Onewa Road

Our opportunity:

- We have installed CCTV and journey time technology on 3 other heavily congested roads ready for future projects: Esmonde Road, Manukau Road / Pah Road, and Constellation Drive
- We are investigating other locations where this technology could be used, e.g. Tamaki Drive

Esmonde Road Analytics