

Using Data for Behaviour Change

Changing departure time and mode choice using data



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

Improving travel times on Onewa Road

We know that travel on Onewa Road can be frustrating at times - particularly during the morning and afternoon peaks. At Auckland Transport, we're trying to make this better by improving the frequency of bus services and promoting alternative transport options.

So if the Onewa Road traffic bit much, read below and make your commute a whole lot easier.

What are your travel options?

GO Ferry

For many people living close to Birkenhead the ferry is a great way to get into town. Plus, you can easily take bikes on the ferry, so you could ride to the wharf and then to your destination on the other side.

GO Bus

Taking the bus has already proven to be a smart choice for commuters, with 3,000 locals traveling down Onewa Road on the bus every weekday morning. Plus, with bus services on Onewa Road leaving every 10 minutes.

GO via time-travel

By travelling down Onewa Road before 7am or after 7am, and returning home outside of peak, you could save yourself as much as 25 minutes per day in travel time. That's 2 full hours per week or about 2 1/2 weeks a year saved in time spent on the road getting to and from work.**

GO share a ride

Ride-share, or carpooling, is a social way to go. Get to know your neighbours better by teaming up for a ride into work or back home. Even better, team up and travel to work off-peak. You only need three people in a car to use the T3 bus lane during peak, so ride-sharing can save you a lot of time getting down (and up) Onewa Road. By splitting the cost, you'll also save heaps of money in fuel and parking.

GO mix it up

Variety is the spice of life and it can make your working week go quicker if you try different travel options. You might take the ferry on Monday, go in late on Tuesday, share a ride into town with friends on Wednesday and take the bus on other days. Select the options that suit your lifestyle and work situation.

in the know.

Making your Onewa Rd commute easier.

Go Metro. AT Metro

Letterbox leaflet

Better ways to beat the traffic.

beat the traffic.

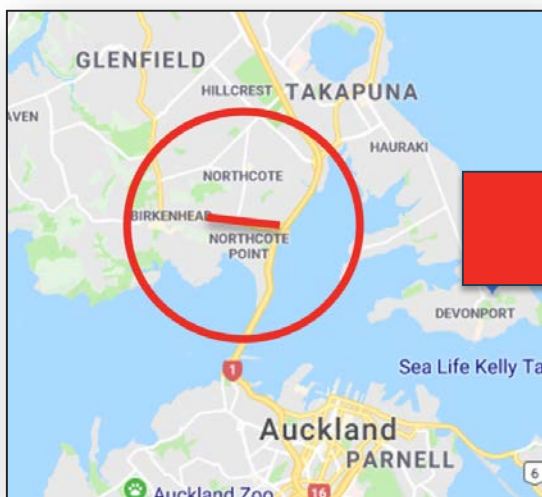
Find out more

Go Metro. AT Metro

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

A close-up of a VMS message. The text is orange on a black background. It reads: "NOW 23", "1HR AGO 11", and "IN 1HR 10".

A close-up of a VMS message. The text is orange on a black background. It reads: "SHIFT YOUR TRAVEL TIME".

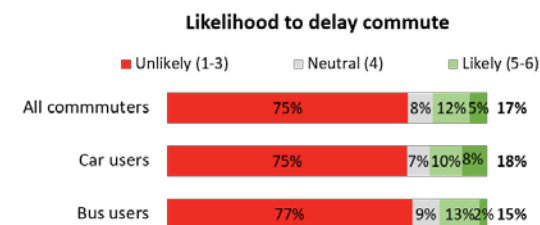
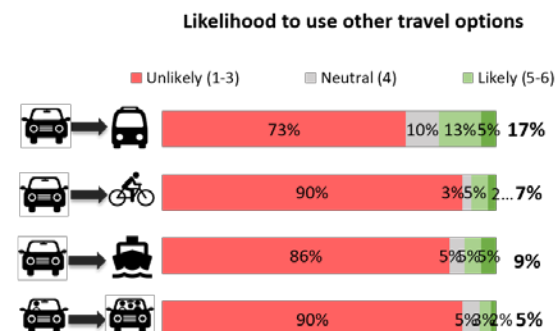
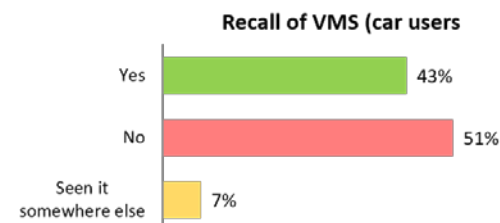
A close-up of a VMS message. The text is orange on a black background. It reads: "USE THE T3:", "BUS", and "RIDESHARE".

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



T1 (dark blue) lane has high congestion, journey times 8x freeflow

T3 lane (green, light blue) has relatively little congestion, journey times 2x freeflow

T1 is nearly normal by 9:15am

T1 congestion starts building at 6:30am

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



plateRead	plateType	country	state	subRead	vehicleType	plateTypeCode
JB2631	Regular	NZ				
6KF80	Regular	NZ			personalised	
DZT556	Regular	NZ				

Esmonde Road Analytics