

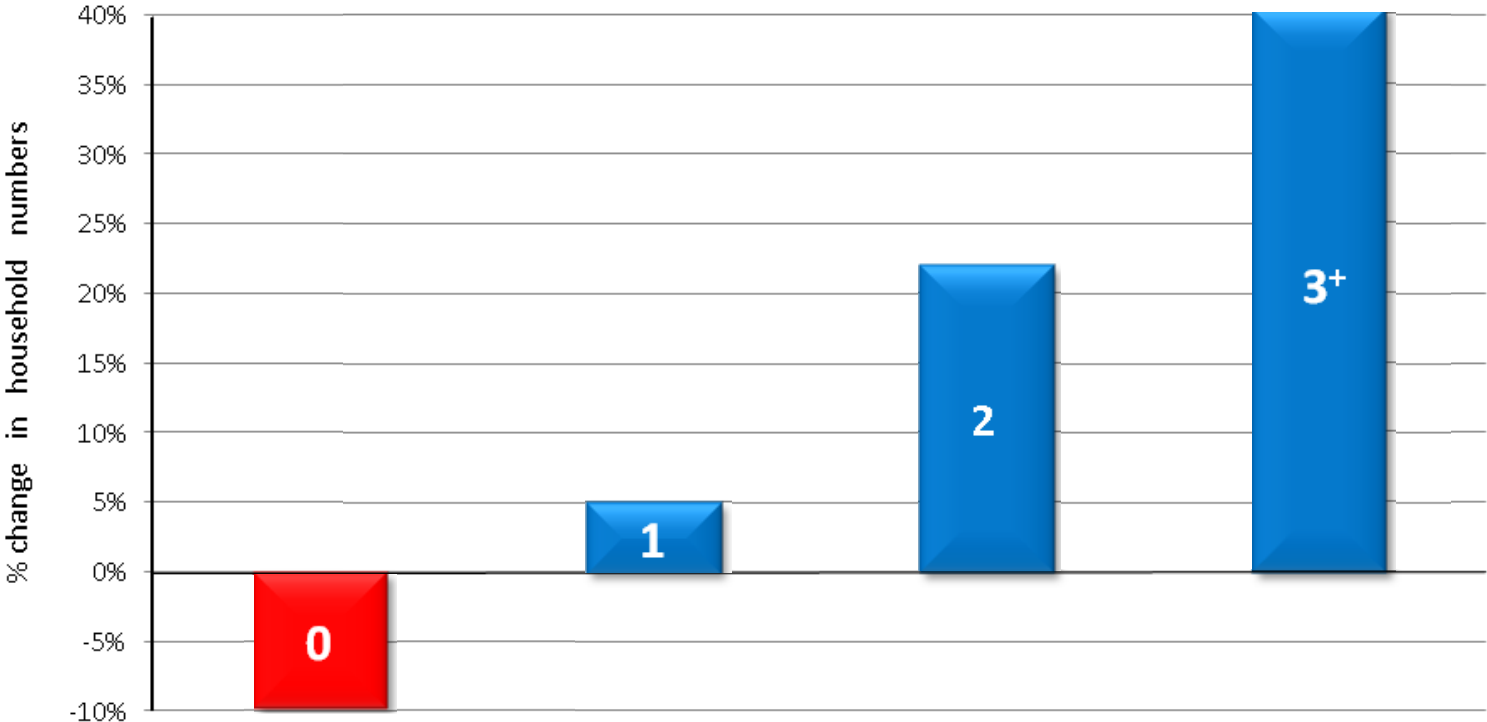


Transforming Construction Delivery ^{on Roads} ^

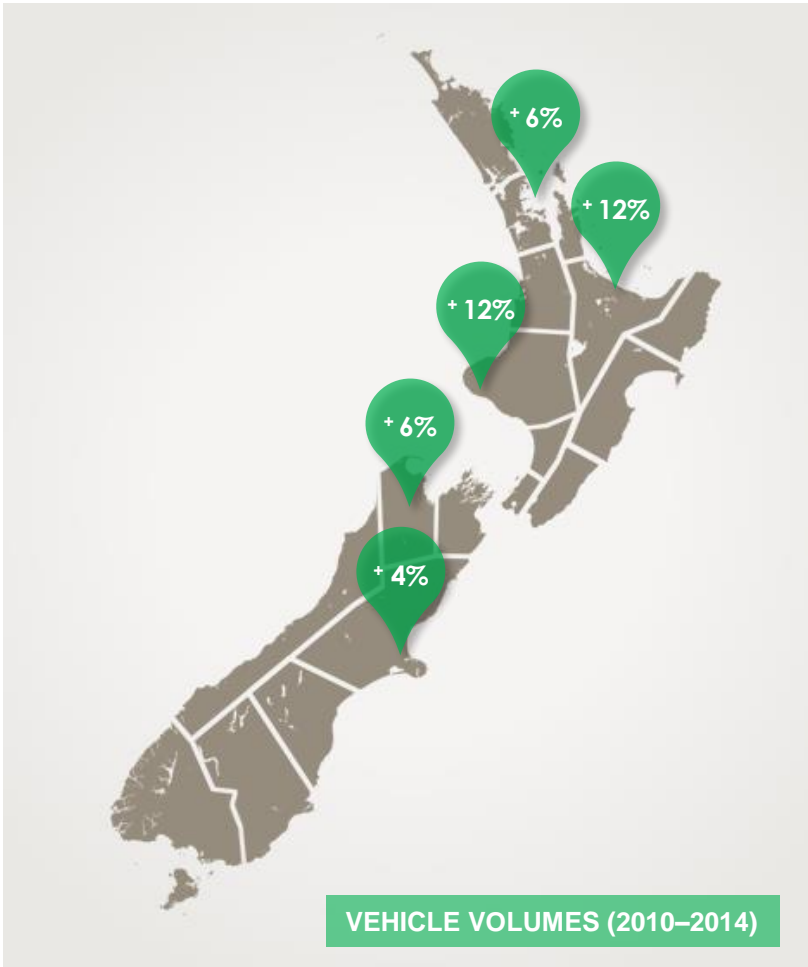
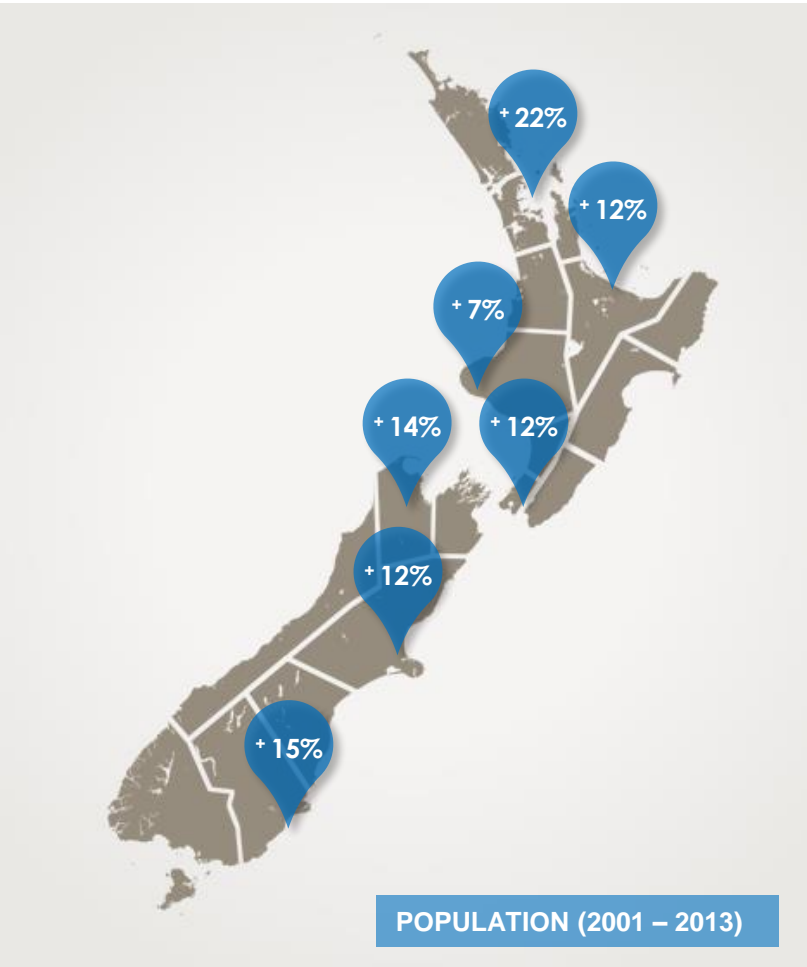
Using Real Time Wireless Journey Monitoring Technology

The data tells us...

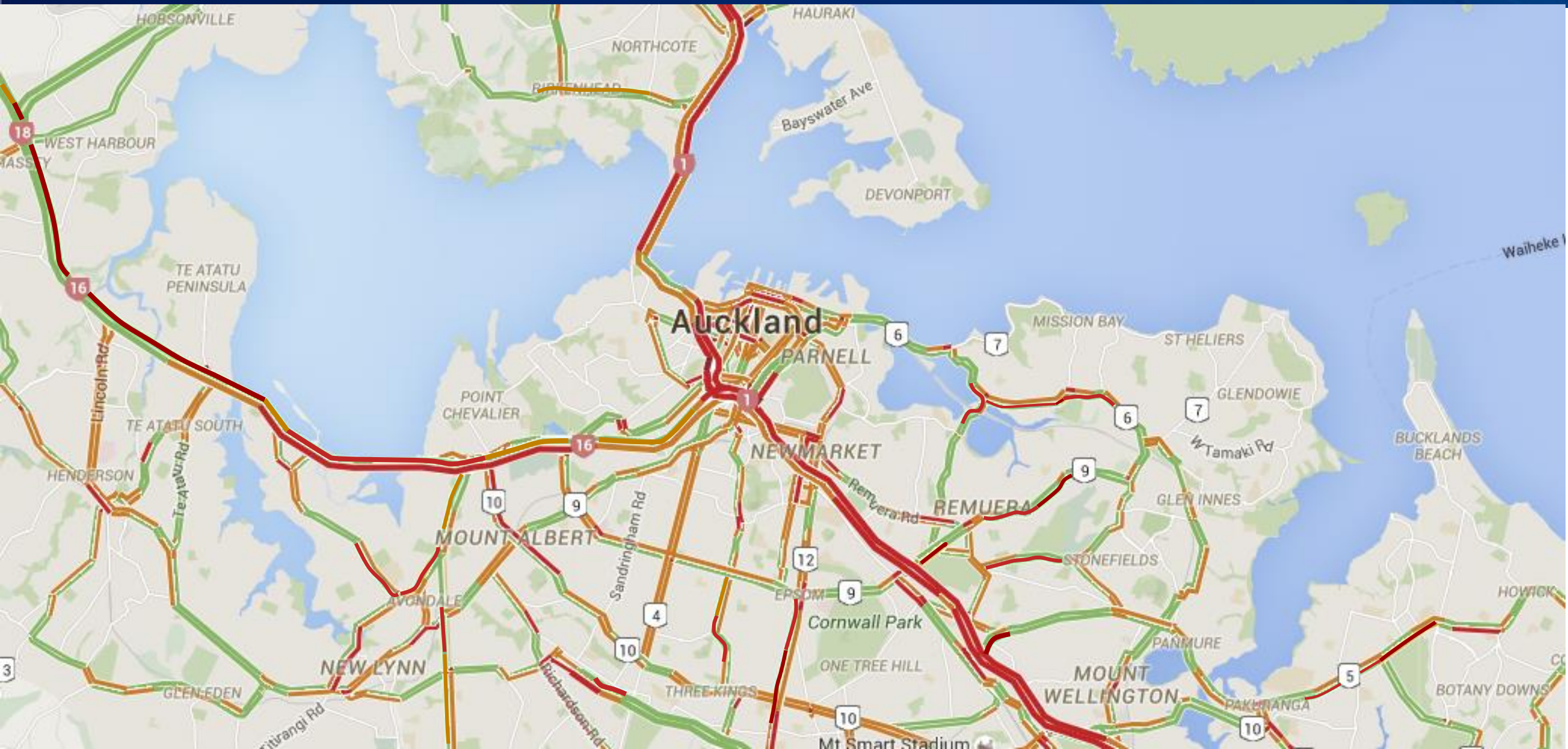
Household Motor Vehicle Ownership [2001-2013]



The data tells us...



Peak Time in Auckland



The industry tells us ...



Our priorities over the next three years

1. Putting customers at the heart of our business.
2. Making the most of urban network capacity.
3. Moving more freight on fewer trucks.
4. Safe speeds to reduce deaths and serious injuries.
5. Efficient road maintenance investment and delivery.

CoPTTM Principles

To ensure safe and efficient TTM, CoPTTM is based on the following fundamental principles:

- TTM must be consistent throughout New Zealand.
- All on-road activities must be carried out in accordance with a TMP that has been approved by the RCA or delegated person (refer to section [A7 Traffic management plans \(TMPs\)](#)).
- The safety of road users and road workers must be an integral part of all activities carried out on the road from planning the activity through to completion.
- Clear and positive guidance must be provided for road users approaching, travelling through and exiting the worksite.

Activities on any road must be planned so as to cause as little disruption, delay or inconvenience to road users as possible without compromising safety. The length, width and duration of any TTM must be restricted to the minimum required for the safe operation of the activity.

Traffic chaos on Auckland's SH16 after major exit closed

Last updated 12:05, March 5 2016



Traffic chaos on Auckland's Northwestern Motorway on Saturday.

Auckland drivers heading to the zoo or St Lukes Mall could be in for traffic headaches. Cars were bumper-to-bumper heading west on the Northwestern Motorway on Saturday due to road works. The westbound St Lukes exit closed on Friday night as contractors rebuild and widen the off-ramp over the weekend. An extra right turning lane would be created onto St Lukes Rd with the aim of reducing traffic queues. It is the main motorway exit for Auckland Zoo, St Lukes Mall, Motat and Western Springs. The NZ Transport Agency is undertaking the work as part of the western ring route project which will linking up Auckland's major motorways. A NZTA spokesman urged drivers to plan their route before heading out. The exit was due to reopen on Monday at 5am.

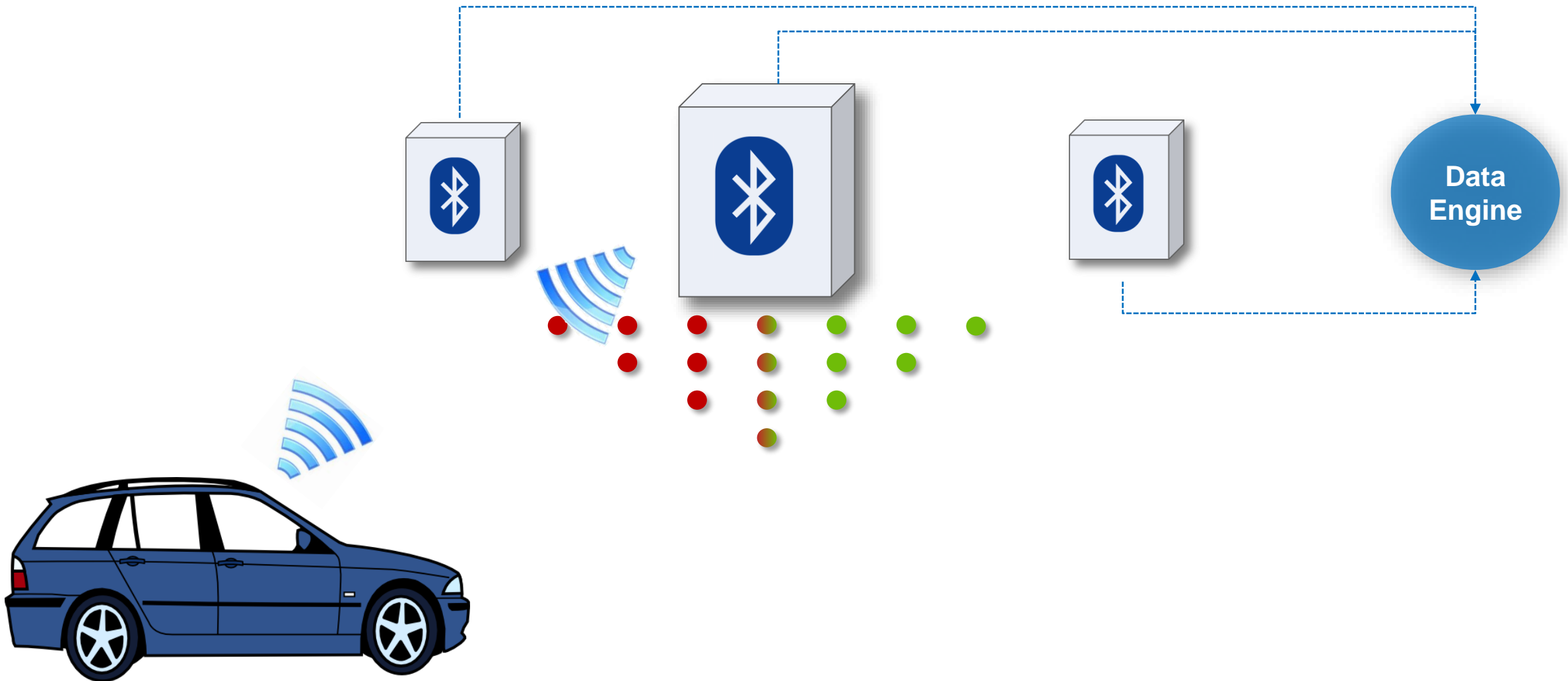


Wellington Absolutely Positively

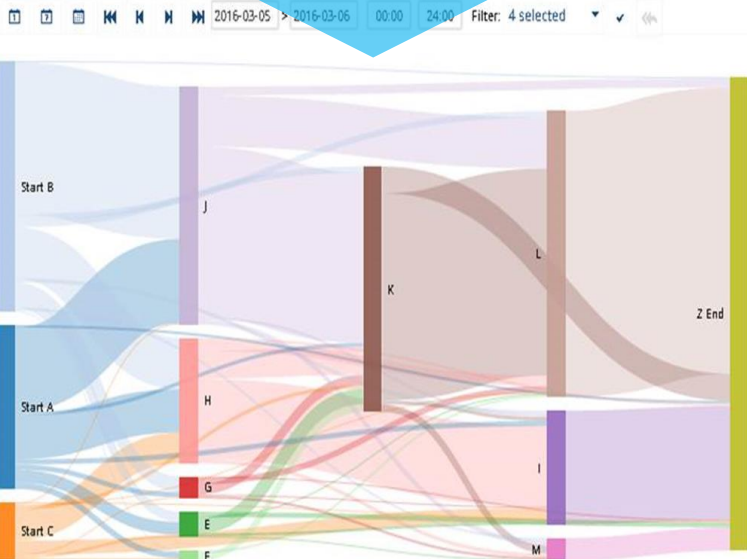
- Safety of the travelling public
- Safety of the workers
- Efficient utilization of the transport corridor for the work and the travelling public



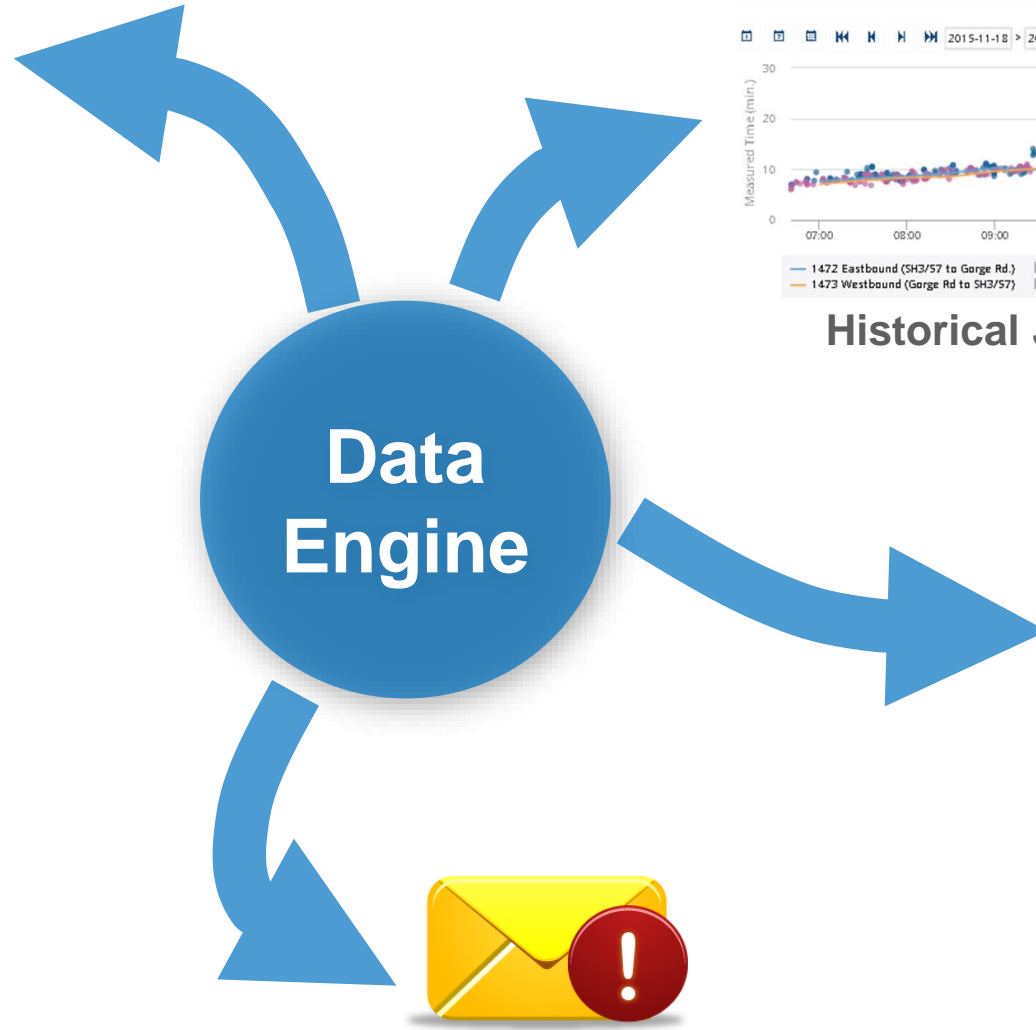
Real Time Wireless Journey Monitoring 101



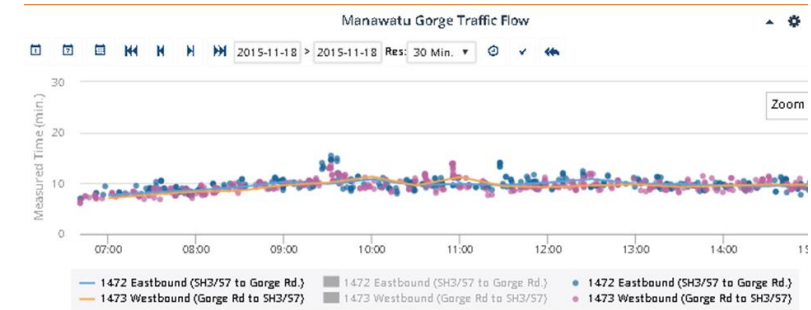
Real Time Wireless Journey Monitoring 101



Route Choice



Data Engine



Historical Journey Time Data



Live Journey Time Data

Real Time Alerts

Case Studies

#1: SH20A to Airport (Auckland)

#2: SH2 Bayfair to Baypark (Tauranga)



Case Study #1 – SH20A to Airport



“The SH20A to Airport project will improve trip reliability and safety along the key route to and from the airport and will support future growth in the area”

The Key Performance Challenge

Key Objective #2: Improve the network through managing the traffic impacts on our neighbourhood and on our streets

- Improving reliability to and from the airport;
- Ensuring closures are on and off on time;
- Unlock benefits early; and
- Minimising construction impact

Key Objective #3: Extend travel options through the messages we communicate

- Clear travel directions;
- Accessible information; and
- Reliable information



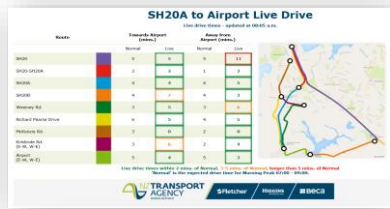
Case Study #1 - Traffic Key Results Journey

Network Review
and Journey Time
Infrastructure Setup

Traffic Model Forecasts
+
Journey Time Base Lining

Key Results Measures

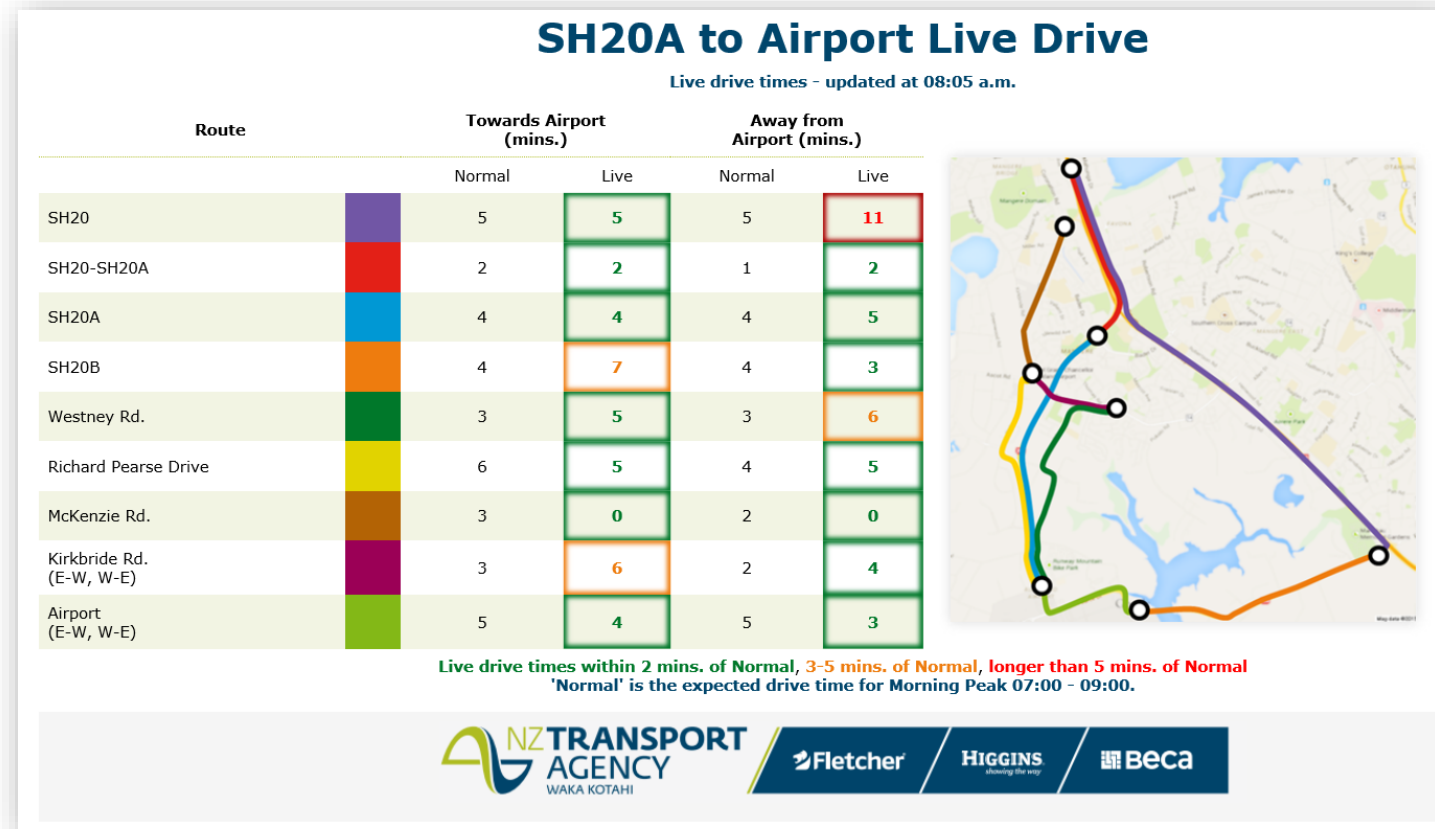
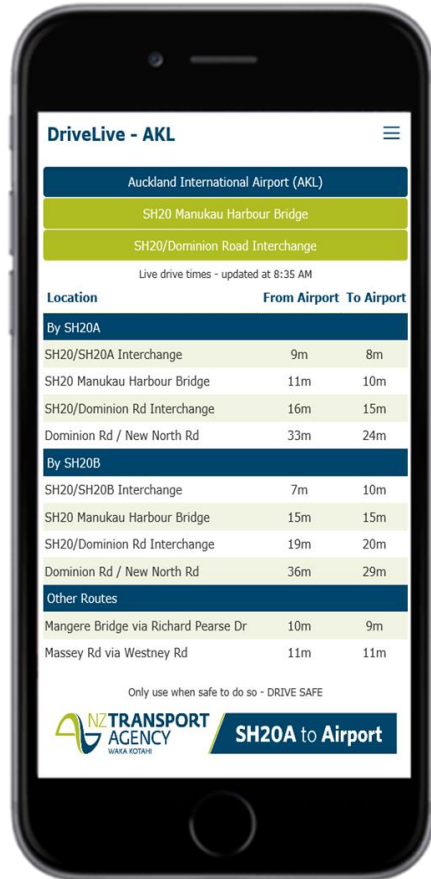
Performance	Breakdown	Step behind	Business As Usual	Step ahead	Breakthrough
Traffic delays	Greater than 5 minutes delay	3-4 minutes	2-3 minutes	0-1 minutes	Improvement in traffic flow



Connection Plan

- Data Management
- Communication to Public
- Reporting
- Feedback Loop e.g. hot spots or TMP design

Case Study #1 – Real Time Wireless Journey Use



Case Study #1 – The devil is in the detail

Contractual
Objective:

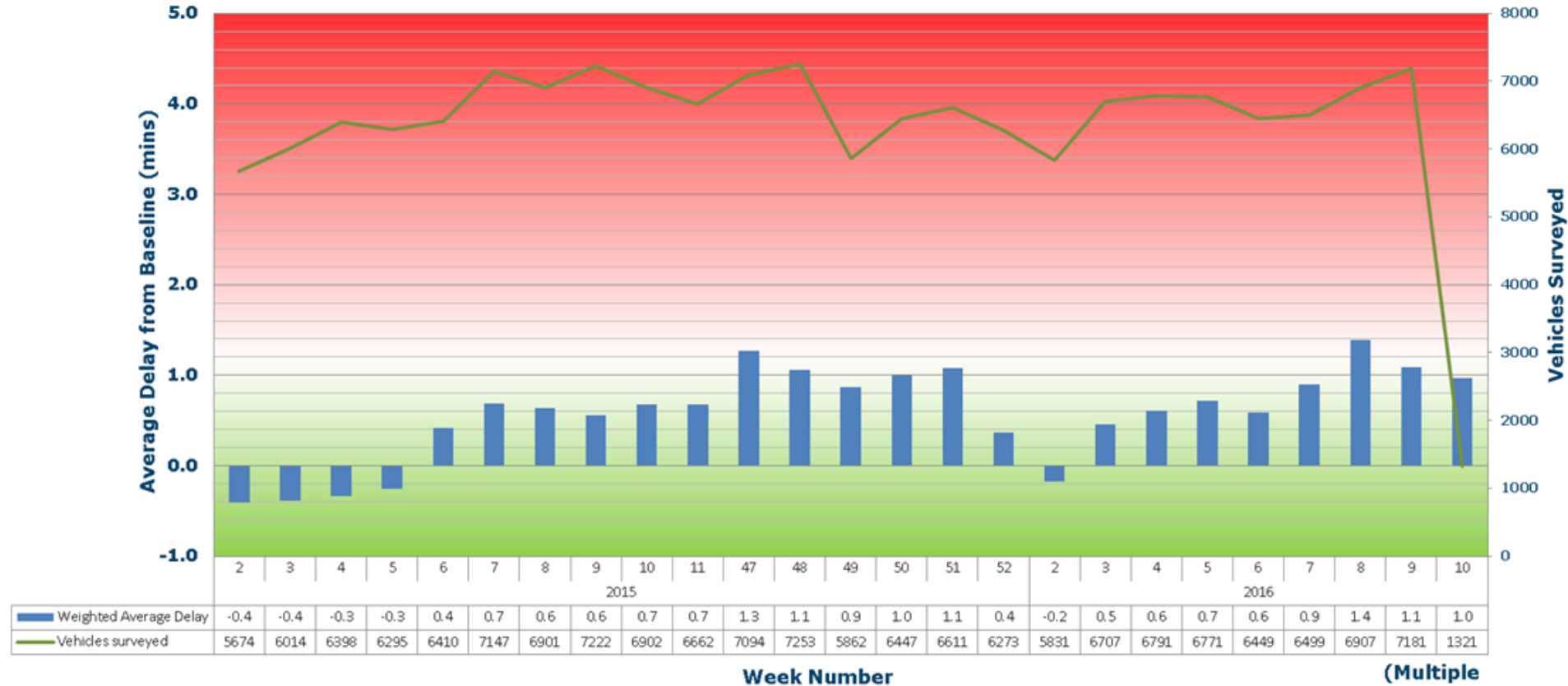
**‘Vehicles
won’t be
delayed by
more than 3
minutes’**

The Detailed questions	The Kirkbride Answers
Which Route?	4 of the 16 routes only
What flow?	Use weighted data
What time of Day?	7-9 am 11am-1pm and 4-6pm only
Over what period?	Use hourly data every hour
All vehicles?	Use Median vehicle that hour data
Which days ?	Mon-Fri
What delay is a fail?	Median > 1 min slower than pre-construction. Use the worst hour overall that week. Report Monthly

Case Study #1 - KPI Reporting

Journey Time Impact

Weekdays (7am-9am, 11am-1pm, 4pm-6pm) On SH20A /AKL and Kirkbride / Massey Rd.



Average Delay is the mean of all delays on the routes during the survey period. The mean is weighted in proportion to the journeys on each route. Baseline travel times measured over 6 week period before construction



SH20A to Airport

Case Study #2 – SH2 Bayfair to Baypark



Case Study #2 – Wireless Detection Infrastructure



Real time wireless journey monitoring technology enables intelligence of the road network to learn and involve all users of the road to deliver construction more smartly

Increasingly complex environments

Transforming Construction Delivery on Roads

No longer internally focussed for solutions but additional dimension can be achieved to learn from and involve road users

Big Data smart technologies can be used as an effective tool to transform the way we plan and work through real time wireless journey monitoring

Where will the future lead us? And how are we considering the marrying of possibilities through new technology and conventional processes?