



## Overview 2014

Deryk Whyte, Director, AraFlow Ltd

**AraFlow is a leader in Intelligent Transport Systems (ITS) consultancy, traffic management and traveller information services.**

**Our expertise, systems and services offer our clients innovative and practical ITS solutions enabling them to deliver smarter, safer and more efficient transport systems, today and into the future.**

Supporting smart transport planning and management, AraFlow's Intelligent Transport Systems (ITS) consultancy services and leased hardware record, measure and analyse traffic data. We can help you create safer, more efficient traffic. Find out how >>

Working with clients including infrastructure planners, and transport managers, AraFlow offers innovative, cost effective solutions. We are experienced in integrated ITS, traffic management and traveller information services. Follow us on LinkedIn >>

AraFlow leases ITS hardware and integrates our exclusive technology that uses Bluetooth and mobile networks to monitor, record and analyse anonymous traffic data. Our leased ITS hardware could help you, learn how >>

Our service is growing and our systems are evolving, get in touch to find out the latest, or connect with us to receive our ITS news. Sign up for the ITS newsletter >>



## ▶ Network Monitoring Sensors ◀

# How?

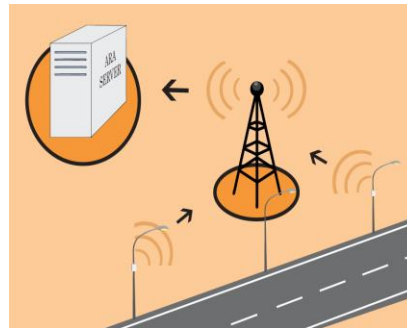
- Collect unique Mac addresses from everyday devices
  - Using Bluetooth
- Data is collected anonymously
  - Utilise a hashing algorithm
  - Fully compliant with NZ, Australian and International privacy laws



# How?

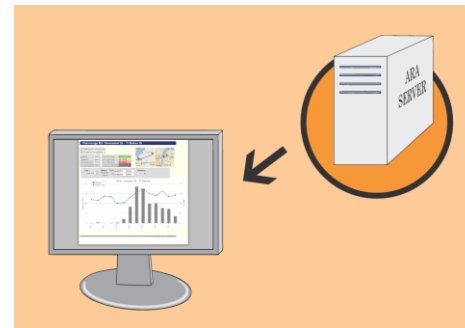


We read Mac addresses using small roadside sensors



Sending these to our servers for matching, quality checking, data cleaning and analysis

Provide data services to our clients via a web portal/interface



# How?

- IP56 plastic box containing
- mobile communications modem/antenna
- Bluetooth detector
- data storage and a battery.
- sensor dimensions (H x W x D) 380mm x 300mm x 120mm, weighing 7kg.



- Solar powered or mains – 10 day battery life on continuous real time data reporting
- 1.5 watts power consumption
- Installation height 2.5 to 3m
- 30 to 45 minutes to install





AraFlow Standard Client Portal





### Welcome to AraFlow Traffic Monitoring

Username:

Password:

Please enter your username and password to log in

login

## Araflow Traffic Monitoring

Welcome Deryk Whyte (Deryk)

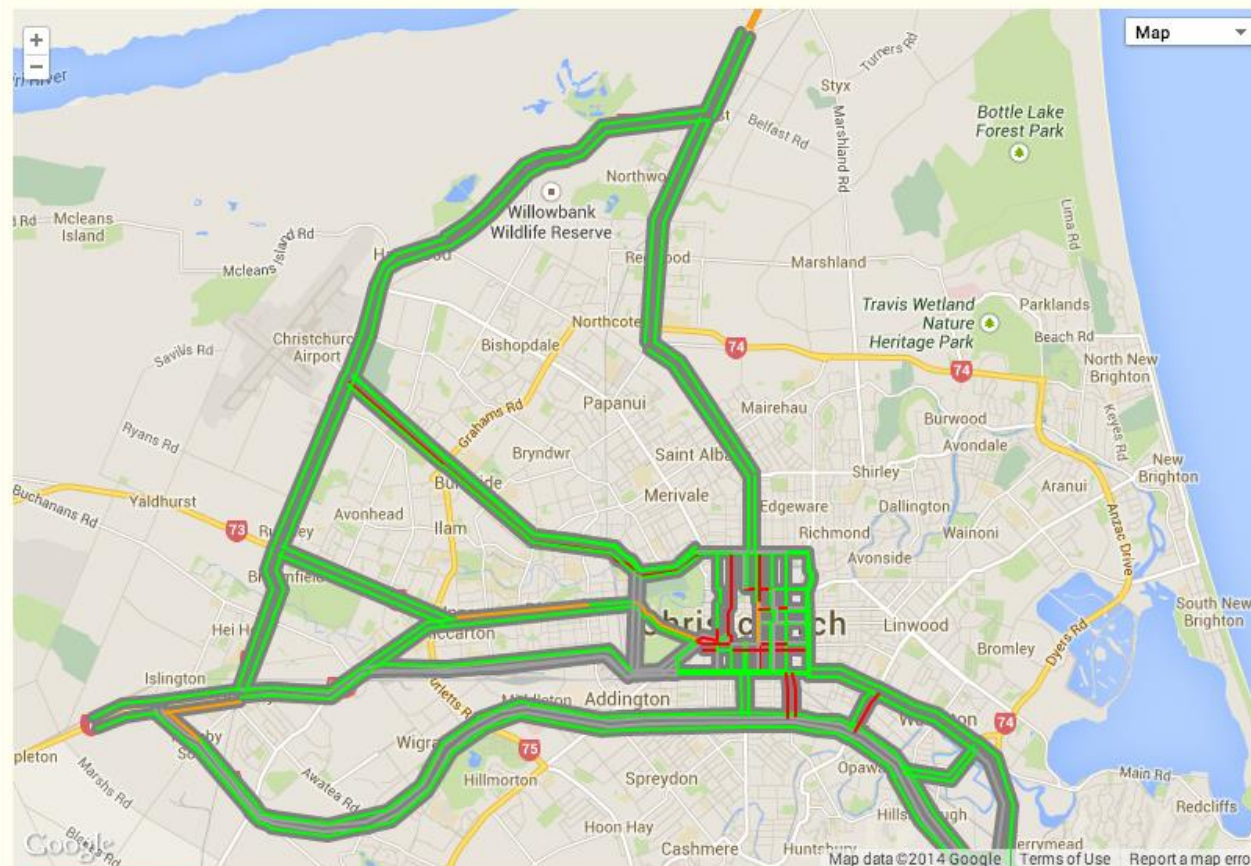
[logout](#)
[< back](#) | [> Map](#) | [Route](#) |

[English](#) | [繁中](#) | [簡中](#)

### Christchurch - Christchurch

Please hover over the route your are interested in. Click to get detailed information.

Route	Dir	Date/Time	JrnyTime	JrnySpeed	Matches
-	-	-	-	-	-



auto update is active 25/04 13:39 NZST

Travel Condition 66% of speedlimit and faster 65% to 50% of speedlimit 49% to 16% of speedlimit slower than 15% of speedlimit

## Araflow Traffic Monitoring

 Welcome Deryk Whyte (Deryk)  
[logout](#)
[< back](#) | [> Map](#) | [Route](#) | > Johns Rd/Clearwater Ave to Johns Rd/Sawyers Arms Rd

[English](#) | [繁中](#) | [简中](#)

### Christchurch / Johns Rd/Clearwater Ave to Johns Rd/Sawyers Arms Rd

Location A: Sensor 002 (SH1 Johns Rd/Clearwater Ave)  
 Location B: Sensor 004 (SH 1 Johns Rd, north of Sawyers Arms Rd/Johns Rd R/A)

Distance	2025m
Speedlimit	80km/h
std. Journey Time	2m12s
std. Journey Speed	55km/h

65% and over	37km/h and over
49%..66%	28km/h..36km/h
15%..50%	10km/h..27km/h
below 16%	below 9km/h



Type:	Direction:	From:	To:	Period:	
Table	<input checked="" type="radio"/> A => B <input type="radio"/> B => A	25/04/2014 00:00	26/04/2014 00:00	1 hour	<a href="#">Update</a>

Date/Time	Journey Time	Journey Speed	Matches	Count
<a href="#">25/04 00:00</a>	1m43s	70km/h	2	24
<a href="#">25/04 01:00</a>	1m48s	67km/h	4	20
<a href="#">25/04 02:00</a>	2m04s	58km/h	8	18
<a href="#">25/04 03:00</a>	2m07s	57km/h	3	19
<a href="#">25/04 04:00</a>	2m43s	44km/h	15	30
<a href="#">25/04 05:00</a>	2m17s	53km/h	15	53
<a href="#">25/04 06:00</a>	2m36s	46km/h	18	45
<a href="#">25/04 07:00</a>	2m08s	56km/h	19	89
<a href="#">25/04 08:00</a>	2m29s	48km/h	31	111
<a href="#">25/04 09:00</a>	2m20s	51km/h	49	183
<a href="#">25/04 10:00</a>	2m13s	54km/h	53	212
<a href="#">25/04 11:00</a>	2m08s	56km/h	73	235
<a href="#">25/04 12:00</a>	2m16s	53km/h	55	194
<a href="#">25/04 13:00</a>	2m13s	54km/h	12	44

## Araflow Traffic Monitoring

Welcome Deryk Whyte (Deryk)

[logout](#)
[< back](#) | [> Map](#) | [Route](#) | [> Johns Rd/Clearwater Ave to Johns Rd/Sawyers Arms Rd](#)
[English](#) [繁中](#) [简中](#)

### Christchurch / Johns Rd/Clearwater Ave to Johns Rd/Sawyers Arms Rd

Location A: Sensor 002 (SH1 Johns Rd/Clearwater Ave)

Location B: Sensor 004 (SH 1 Johns Rd, north of Sawyers Arms Rd/Johns Rd R/A)

Distance	2025m
Speedlimit	80km/h
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65% and over	37km/h and over
49%..66%	28km/h..36km/h
15%..50%	10km/h..27km/h
below 16%	below 9km/h



Type:

Direction: ☒ A => B ☐ B => A

From: 25/04/2014 00:00  
 To: 26/04/2014 00:00

- 1 min
- 5 min
- 10 min
- 15 min
- 30 min
- ✓ 1 hour
- 3 hour
- day

Date/Time	Journey Time	Journey Speed	Matches	Count
<a href="#">25/04 00:00</a>	1m43s	70km/h	2	24
<a href="#">25/04 01:00</a>	1m48s	67km/h	4	20
<a href="#">25/04 02:00</a>	2m04s	58km/h	8	18
<a href="#">25/04 03:00</a>	2m07s	57km/h	3	19
<a href="#">25/04 04:00</a>	2m43s	44km/h	15	30
<a href="#">25/04 05:00</a>	2m17s	53km/h	15	53
<a href="#">25/04 06:00</a>	2m36s	46km/h	18	45
<a href="#">25/04 07:00</a>	2m08s	56km/h	19	89
<a href="#">25/04 08:00</a>	2m29s	48km/h	31	111
<a href="#">25/04 09:00</a>	2m20s	51km/h	49	183
<a href="#">25/04 10:00</a>	2m13s	54km/h	53	212
<a href="#">25/04 11:00</a>	2m08s	56km/h	73	235
<a href="#">25/04 12:00</a>	2m16s	53km/h	55	194
<a href="#">25/04 13:00</a>	2m13s	54km/h	12	44

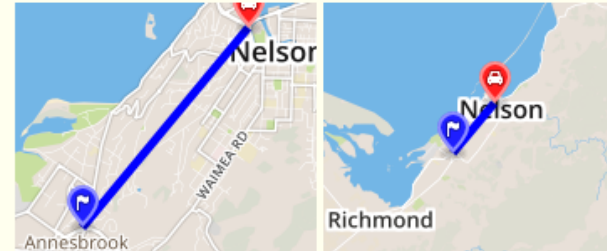


< [back](#) > [Project](#): Blenheim, Nelson and Richmond > [Map](#) | [Route](#)

## Blenheim, Nelson and Richmond / 201 - 203

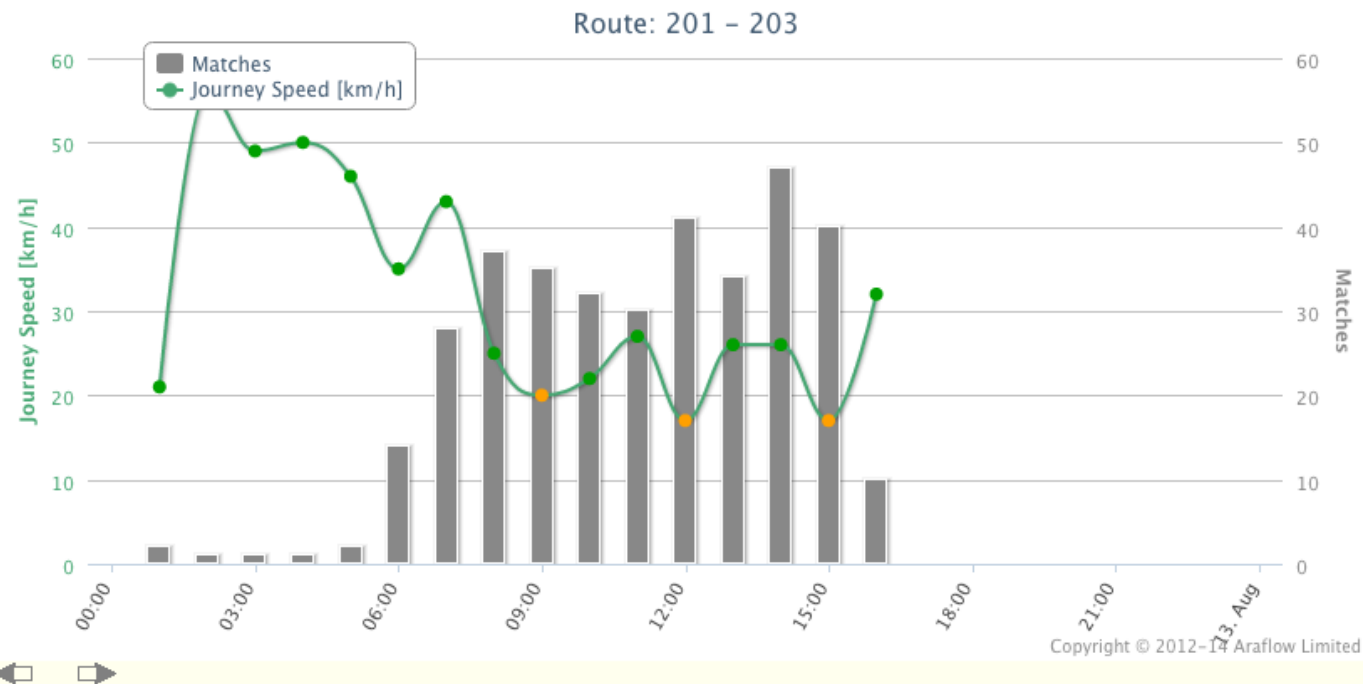
**Location A**: Sensor 201 Haven Rd R/A  
**Location B**: Sensor 203 Annesbrook Dr/Whakatu Dr R/A

Distance	: 5450m	74% and over	: 21km/h and over
Speedlimit	: 50km/h	49%..75%	: 14km/h..20km/h
std. Journey Time	: 12m06s	24%..50%	: 7km/h..13km/h
std. Journey Speed	: 27km/h	below 25%	: below 6km/h



Map data © OpenStreetMap contributors, Imagery © Mapbox

Type:  Direction: ☒ A => B ☐ B => A From: 12/08/2015 00:00 To: 13/08/2015 00:00 Period: 1 hour



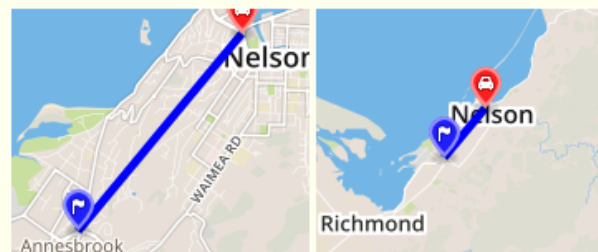
< [back](#) > [Project](#): Blenheim, Nelson and Richmond > [Map](#) | [Route](#) |

## Blenheim, Nelson and Richmond / 201 - 203

**Location A**: Sensor 201 Haven Rd R/A  
**Location B**: Sensor 203 Annesbrook Dr/Whakatu Dr R/A

Distance: 5450m  
 Speedlimit: 50km/h  
 std. Journey Time: 12m06s  
 std. Journey Speed: 27km/h

74% and over	21km/h and over
49%..75%	14km/h..20km/h
24%..50%	7km/h..13km/h
below 25%	below 6km/h



Map data © OpenStreetMap contributors, Imagery © Mapbox

Type:

Timegraph

Direction:

☒ A => B

☐ B => A

From: 12/08/2015 00:00

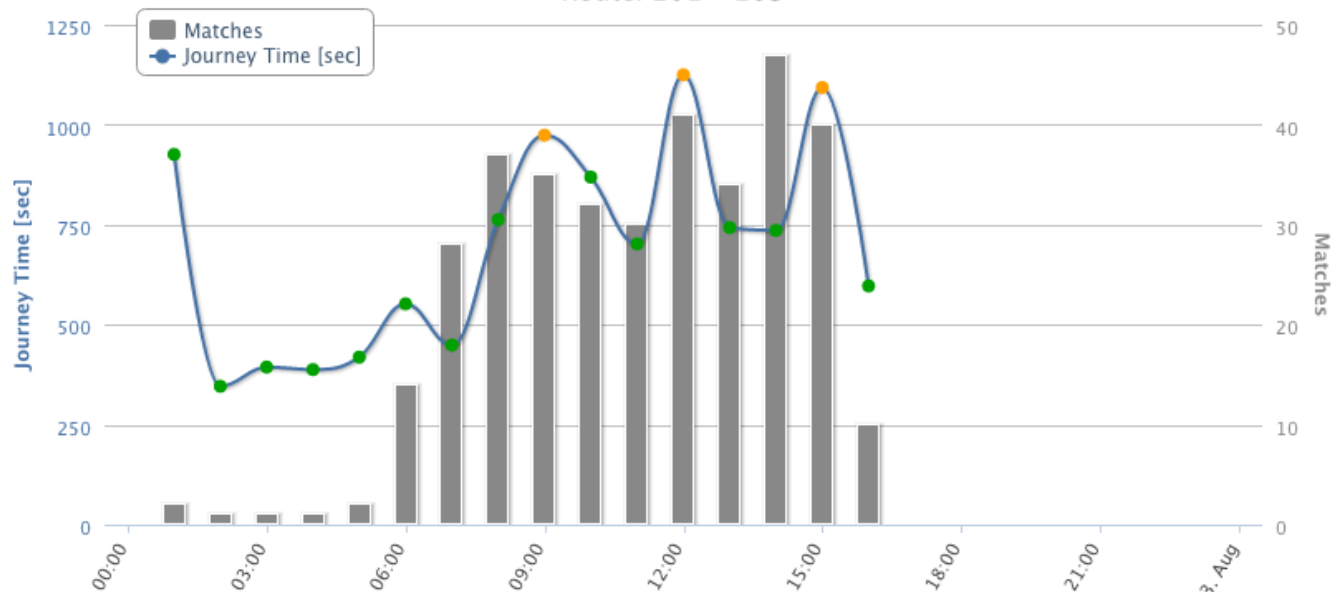
To: 13/08/2015 00:00

Period:

1 hour

[Update](#)

### Route: 201 - 203



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## HMI VMS Control - email Notifications

Area:

Route:

Name:

email:

[Reset](#)

46 matching

Area	Route ▲	Dir	Name	email	Level	delete/edit
SH76 A->B	Barrington St/Christchurch Sth Motorway to Colombo St/Brougham St	A->B	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 B->A	Barrington St/Christchurch Sth Motorway to Colombo St/Brougham St	B->A	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH1 B->A	Carman Rd/Buchanans Rd to Carmen Rd/Main South Rd	B->A	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH1 A->B	Carman Rd/Buchanans Rd to Carmen Rd/Main South Rd	A->B	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 A->B	Colombo St/Brougham St to Waltham Rd/Brougham St	A->B	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 B->A	Colombo St/Brougham St to Waltham Rd/Brougham St	B->A	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 B->A	Curletts Rd/Christchurch Sth Motorway to Barrington St/Christchurch Sth Motorway	B->A	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 A->B	Curletts Rd/Christchurch Sth Motorway to Barrington St/Christchurch Sth Motorway	A->B	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 A->B	Ensors Rd/Broughams St to Garlands Rd/Opawa Rd	A->B	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 B->A	Ensors Rd/Broughams St to Garlands Rd/Opawa Rd	B->A	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 B->A	Garlands Rd/Opawa Rd to Port Hills Rd/Tunnel Rd Interchange	B->A	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 A->B	Garlands Rd/Opawa Rd to Port Hills Rd/Tunnel Rd Interchange	A->B	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 A->B	Halswell Jct Rd/Christchurch Sth Motorway to Curletts Rd/Christchurch Sth Motorway	A->B	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 B->A	Halswell Jct Rd/Christchurch Sth Motorway to Curletts Rd/Christchurch Sth Motorway	B->A	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 A->B	Halswell Jct Rd/Shands Rd to Halswell Jct Rd/Christchurch Sth Motorway	A->B	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 B->A	Halswell Jct Rd/Shands Rd to Halswell Jct Rd/Christchurch Sth Motorway	B->A	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 B->A	Halswell Jct Rd/Shands Rd to Halswell Jct Rd/Springs Rd	B->A	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎
SH76 A->B	Halswell Jct Rd/Shands Rd to Halswell Jct Rd/Springs Rd	A->B	Sean Lewis	Sean.Lewis@ccc.govt.nz	black 400%	✖ ✎

## Araflow Traffic Monitoring

Welcome Deryk Whyte (Deryk)  
[logout](#)[< back](#) > [Map](#) | [Route](#) | [Heatmap Report](#) | [JT Dashboard](#) | [Origin/Destination Report](#) | [4 Routes Report](#) |

### 4 Routes Report

Route/Dir:	please select a route		<a href="#">Show</a>
Dates:	From: 05/08/2015	To: 12/08/2015	<a href="#">Export</a>
Times:	From: 07:00	To: 09:00	<a href="#">Reset</a>
Weekdays:	<input checked="" type="checkbox"/> Mon <input checked="" type="checkbox"/> Tue <input checked="" type="checkbox"/> Wed <input checked="" type="checkbox"/> Thu <input checked="" type="checkbox"/> Fri <input type="checkbox"/> Sat <input type="checkbox"/> Sun		

Copyright © 2012-14 Araflow Limited

System time: 12.Aug 16:26:50 NZST

gecko-140728 - prod-gecko-chch - 28/07/2014 15:05:25

## Araflow Traffic Monitoring

Welcome Deryk Whyte (Deryk)  
[logout](#)[< back](#) > [Map](#) | [Route](#) | [Heatmap Report](#) | [JT Dashboard](#) | [Origin/Destination Report](#) | [4 Routes Report](#) |

### 4 Routes Report

Route/Dir:	<div><input checked="" type="checkbox"/> please select a route 1: Airport - City 2: City - Airport 3: Barrington St - Innes Rd 4: Innes Rd - Barrington St 5: Hornby - City 6: City - Hornby 7: Belfast - City 8: City - Belfast</div>		<a href="#">Show</a>
Dates:	12/08/2015		<a href="#">Export</a>
Times:	09:00		<a href="#">Reset</a>
Weekdays:	<input checked="" type="checkbox"/> Fri <input type="checkbox"/> Sat <input type="checkbox"/> Sun		

Copyright © 2012-14 Araflow Limited

System time: 12.Aug 16:26:50 NZST

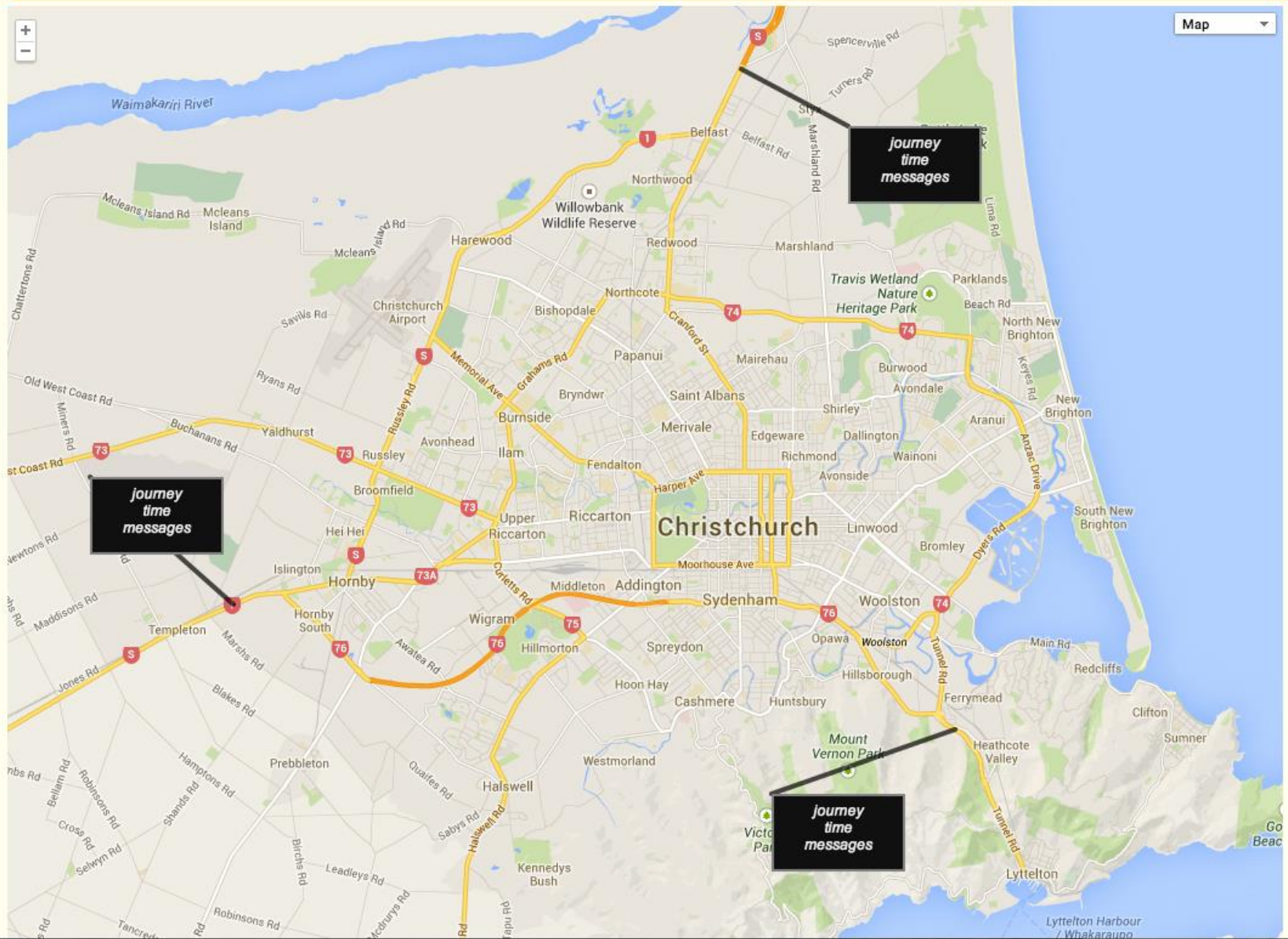
gecko-140728 - prod-gecko-chch - 28/07/2014 15:05:25





▶ Client Specific Services - VMS Management ◀

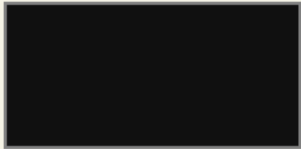
## HMI VMS Control



## HMI VMS Control - Incident Message

### VMS 1: Belfast, Southbound (Roadside)

Preview:

**Create Message**

Saved Messages

Free-Text Message

Event Type: Event Location: Impact: 

Save Message

Remove Message from Sign

Cancel

Time on Sign: 30min 

Post Message to Sign

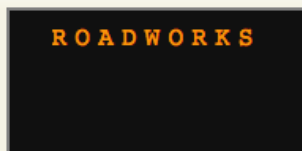
## HMI VMS Control - Incident Message

Welcome Deryk Whyte (Deryk)

[logout](#)

### VMS 1: Belfast, Southbound (Roadside)

Preview:



Create Message

Saved Messages

Free-Text Message

Event Type:

Event Location:

Impact:

- ✓ ROADWORKS
- CRASH
- FLOODING
- SURFACE WATER
- BREAKDOWN
- INCIDENT
- SIGNALS FAULT

[Remove Message from Sign](#)[Cancel](#)

Time on Sign: 30min

[Post Message to Sign](#)

## HMI VMS Control - Incident Message

### VMS 1: Belfast, Southbound (Roadside)

Preview:

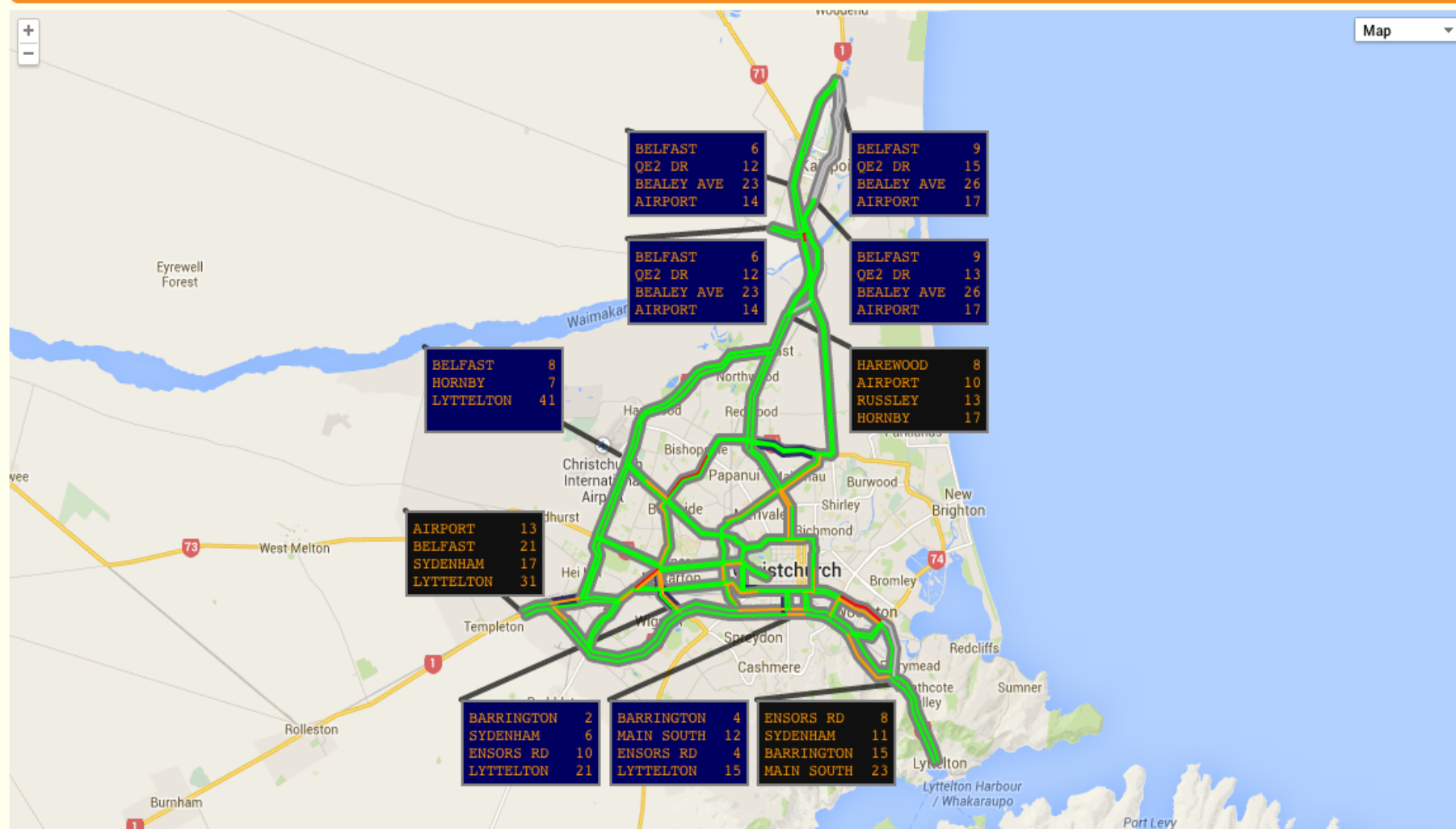
ROADWORKS  
AT RUSSLEY  
EXPECT DELAYS

[Create Message](#)[Saved Messages](#)[Free-Text Message](#)Event Type: Event Location:  Impact: [Save Message](#)[Remove Message from Sign](#)[Cancel](#)Time on Sign: [Post Message to Sign](#)



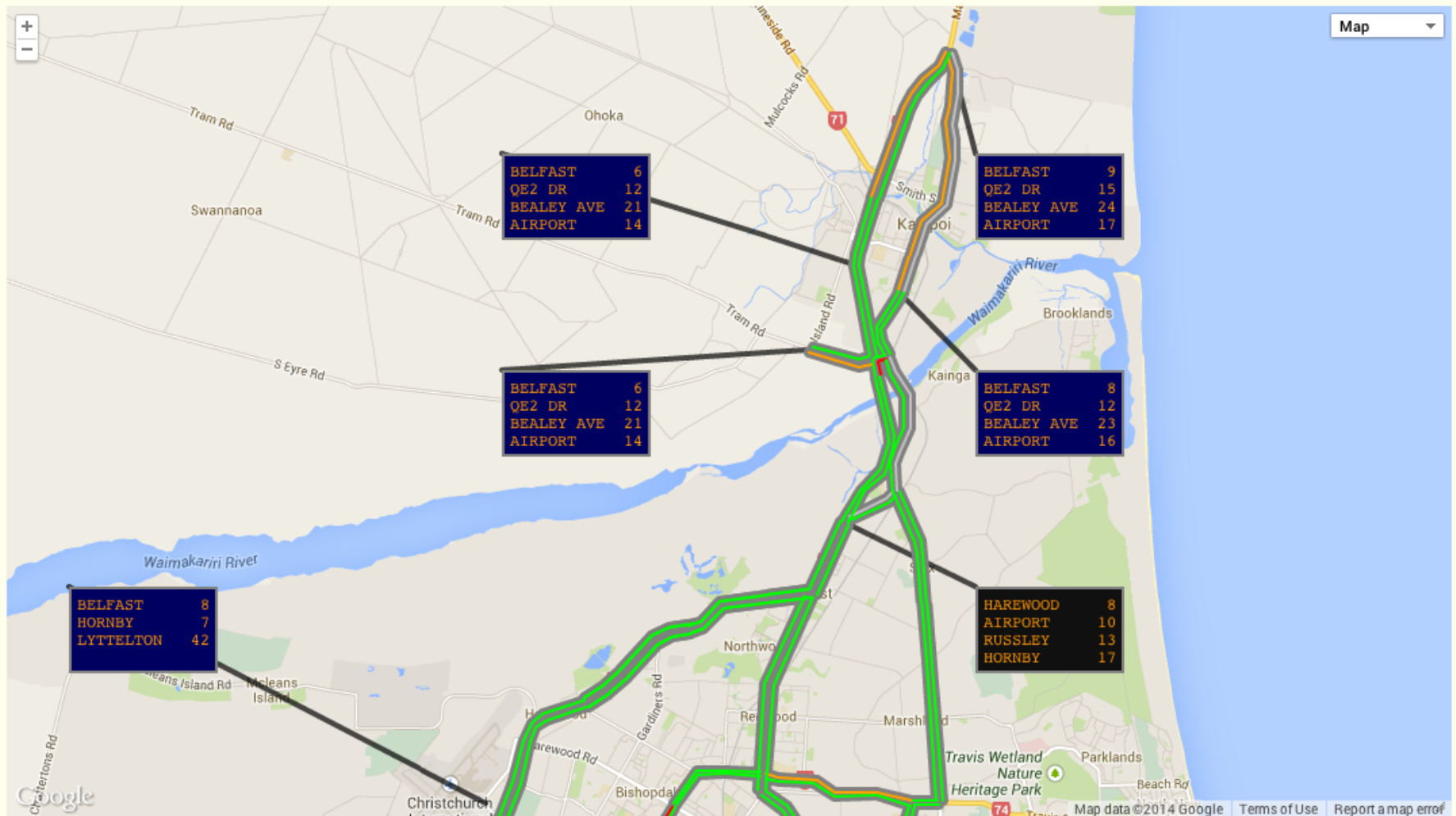
## ▶ Client Specific Services - Journey Time ◀

## HMI VMS Status Monitor





# HMI VMS Status Monitor

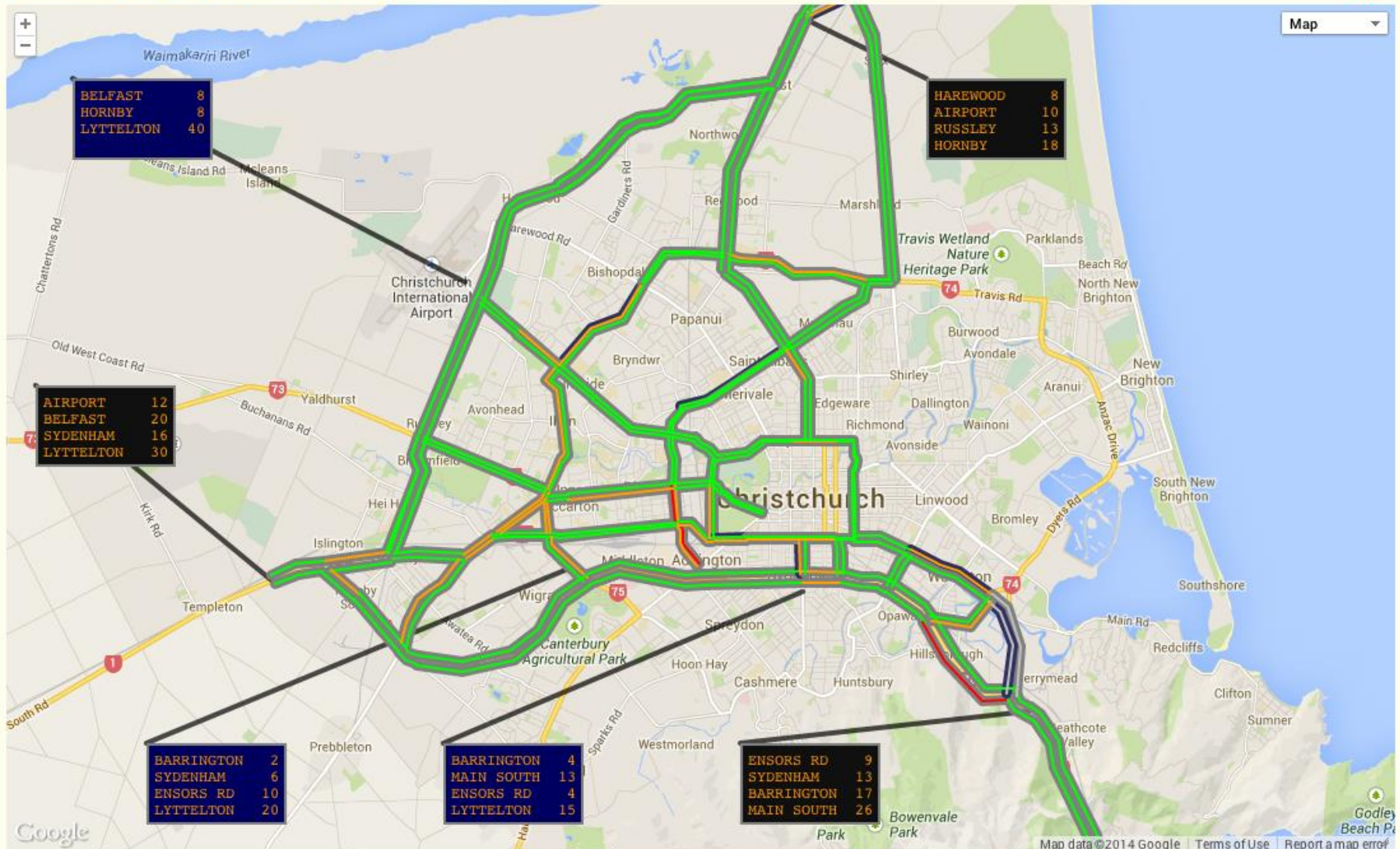


Travel Condition: 75% and above, 74% to 50%, 49% to 20%, below 19% of Std. Speed



# HMI VMS Status Monitor

Deryk Whyte - 08/08 10:56:39 NZST

[logout](#)


Travel Condition: 75% and above, 74% to 50%, 49% to 20%, below 19% of Std. Speed

# Transport for Christchurch

## Christchurch Transport Operations Centre Live Journey Times

powered by AraFlow Ltd

next update in 7sec

### 6:00am & 6:15am Broadcast

Lyttelton to Templeton	34min
Pineacres to Belfast	9min
Belfast to Airport	9min

### 6:30am & 6:45am Broadcast

Kaiapoi to Homebase	11min
Waimakariri Bridge to St Bedes	9min
Belfast to Airport	9min

### 7:00am & 7:15am Broadcast

St Bedes to Bealey Ave	10min
St Bedes to Memorial Ave	8min
Church Corner to Hagley Park	18min

### 7:30am & 7:45am Broadcast

Airport to Hornby	9min
Russley to Blenheim Rd	7min
Airport to Bealey Ave	14min

### 8:00am & 8:15am Broadcast

Cranford to Riccarton	14min
Lyttelton to Templeton	34min
Wigram to Hagley Park	16min

### 8:30am & 8:45am Broadcast

Bealey Ave to Moorhouse Ave	6min
Cranford to Riccarton	14min
Bealey Ave to Airport	15min

# Araflow Traffic Monitoring

Welcome Deryk Whyte (Deryk)

[logout](#)
[< back](#) > [Map](#) | [Route](#) | [Heatmap Report](#) | [JT Dashboard](#) | [Origin/Destination Report](#) | [4 Routes Report](#) |

## Origin/Destination report

Origin/Destination Group:

1: North to South

Date:

12/08/2015

Hour:

07:00-08:00

[Create Report](#)

Pineacres/Motorway SB/Main Nth	L202: 164=100.0%	L203: 122= 74.4%	L204: 98= 59.8%	L205: 93= 56.7%	L208: 25= 15.2%		
Pineacres/Motorway SB/Main Nth/Johns	L202: 164=100.0%	L203: 122= 74.4%	L204: 98= 59.8%	L205: 93= 56.7%	L002: 0= 0.0%		
Pineacres/Motorway SB/Marshland	L202: 164=100.0%	L203: 122= 74.4%	L204: 98= 59.8%	L205: 93= 56.7%	L207: 25= 15.2%	L209: 16= 9.8%	
Pineacres/Motorway SB/Marshland/QE2	L202: 164=100.0%	L203: 122= 74.4%	L204: 98= 59.8%	L205: 93= 56.7%	L207: 25= 15.2%	L209: 16= 9.8%	L208: 1= 0.6%
Pineacres/Motorway SB/Main Nth/QE2	L202: 164=100.0%	L203: 122= 74.4%	L204: 98= 59.8%	L205: 93= 56.7%	L207: 25= 15.2%	L208: 4= 2.4%	L209: 1= 0.6%
Pineacres/Williams/Main Nth/Marshland	L202: 164=100.0%	L201: 11= 6.7%	L206: 10= 6.1%	L207: 4= 2.4%	L209: 2= 1.2%		
Pineacres/Williams/Main Nth	L202: 164=100.0%	L201: 11= 6.7%	L206: 10= 6.1%	L207: 4= 2.4%	L208: 0= 0.0%		
Pineacres/Williams/Main Nth/QE2	L202: 164=100.0%	L201: 11= 6.7%	L206: 10= 6.1%	L207: 4= 2.4%	L208: 0= 0.0%	L209: 0= 0.0%	
Pineacres/Williams/Main Nth/Marshland/QE2	L202: 164=100.0%	L201: 11= 6.7%	L206: 10= 6.1%	L207: 4= 2.4%	L209: 2= 1.2%	L208: 0= 0.0%	
Pineacres/Williams/Main Nth/Tram	L202: 164=100.0%	L201: 11= 6.7%	L200: 2= 1.2%				
Pineacres/Williams/Main Nth/Motorway SB/Main Nth	L202: 164=100.0%	L201: 11= 6.7%	L205: 0= 0.0%	L208: 0= 0.0%			
Pineacres/Williams/Main Nth/Motorway SB/Main Nth/Johns	L202: 164=100.0%	L201: 11= 6.7%	L205: 0= 0.0%	L002: 0= 0.0%			
Pineacres/Williams/Main Nth/Marshland	L202: 164=100.0%	L201: 11= 6.7%	L205: 0= 0.0%	L207: 0= 0.0%	L209: 0= 0.0%		
Pineacres/Williams/Main Nth	L202: 164=100.0%	L201: 11= 6.7%	L205: 0= 0.0%	L207: 0= 0.0%	L208: 0= 0.0%		
Tram/Motorway SB/Main Nth	L200: 114=100.0%	L205: 65= 57.0%	L208: 19= 16.7%				
Tram/Motorway SB/Main Nth/Johns	L200: 114=100.0%	L205: 65= 57.0%	L002: 0= 0.0%				
Tram/Motorway SB/Main Nth/Marshland	L200: 114=100.0%	L205: 65= 57.0%	L207: 19= 16.7%	L209: 10= 8.8%			



## ▶ Client Specific Services – Data Feeds ◀

- JSON real time feed of data to the Transport for Christchurch web site
- Feed contains
  - the live journey time (updated every minute),
  - normal journey times (updated every 15 minutes calculated over the last 12 weeks);
  - and free-flow journey times

HOME > CURRENT CONDITIONS > TRAFFIC DASHBOARD [BETA]

## PM TRAFFIC DASHBOARD [BETA]

AM PEAK >

Welcome to the new Traffic Dashboard [Beta]! For more information about this dashboard and FAQs click [here](#).

### Southern and Western Approaches

JOURNEY	<span>?</span> LIVE	<span>?</span> NORMAL	<span>?</span> FREE FLOW
<a href="#">CBD to Hornby via Blenheim Rd</a>	24 min	25 min	15 min
<a href="#">CBD to Hornby via Sthn Mwy</a>	18 min	19 min	12 min
<a href="#">CBD to Russley via Riccarton Rd</a>	27 min	19 min	12 min
<a href="#">CBD to Chch Airport via Memorial Ave</a>	14 min	14 min	12 min
<a href="#">CBD to Lyttelton via Ferry Rd</a>	19 min	16 min	13 min
<a href="#">CBD to Lyttelton via Brougham St</a>	22 min	17 min	12 min

### LATEST TRAFFIC UPDATES >

CAUTION: SH 8 Lindis Pass 8 hours ago

CAUTION: SH 73 Springfield To Arthurs Pass 16 hours ago

DELAYS: ⚠ Durham Street now Tuesday 28th July 22 hours ago

### ALSO IN THIS SECTION

[Journey Times](#) [Planned Roadworks](#)

[Traffic Cameras](#) [Incidents](#)

[Latest Traffic Updates](#)

[Traffic Dashboard \[Beta\]](#)

[About the Traffic Dashboard](#)

### Northern Approach



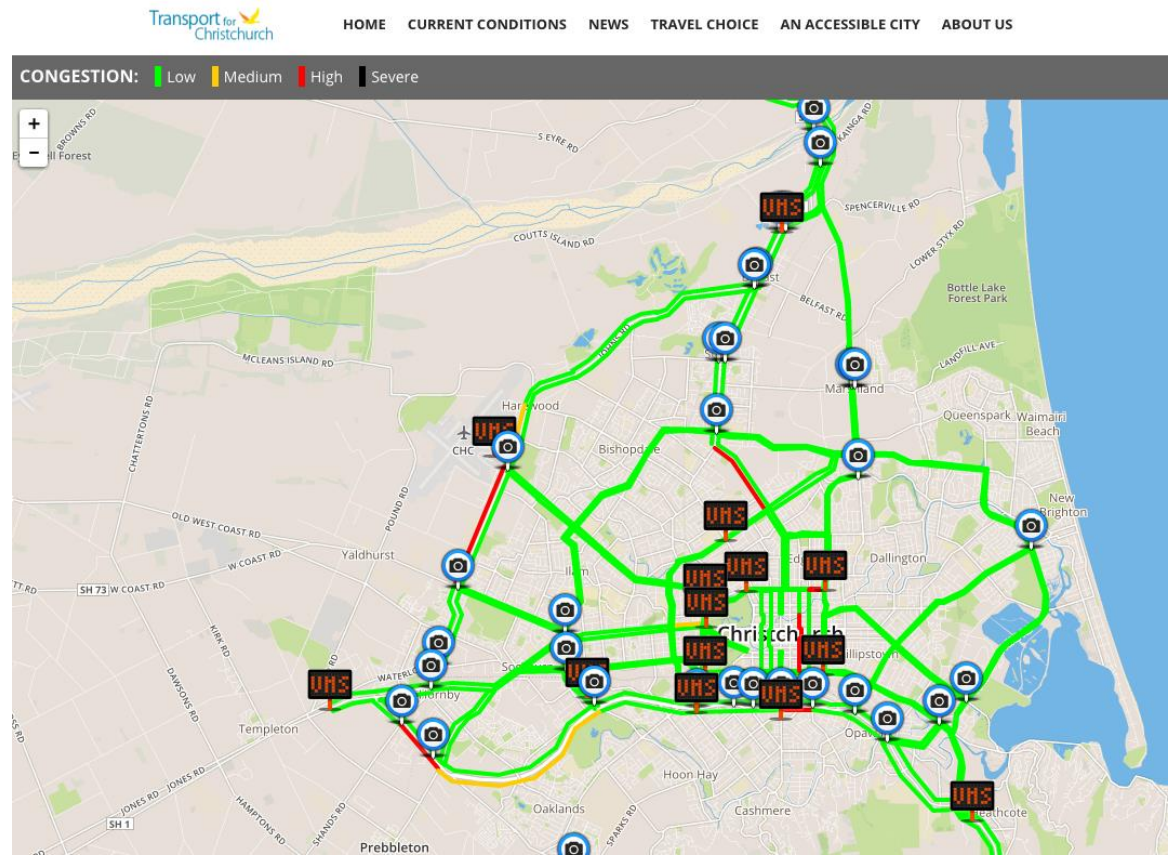
? ? ?

[www.tfc.govt.nz/current-conditions/traffic-dashboard/](http://www.tfc.govt.nz/current-conditions/traffic-dashboard/)



- GeoJSON real time feed of data to the Transport for Christchurch web site
- Feed contains
  - Live journey times for “virtual VMS”
  - Congestion mapping colouring
    - Green – low
    - Amber medium
    - Red – high
    - Black - severe

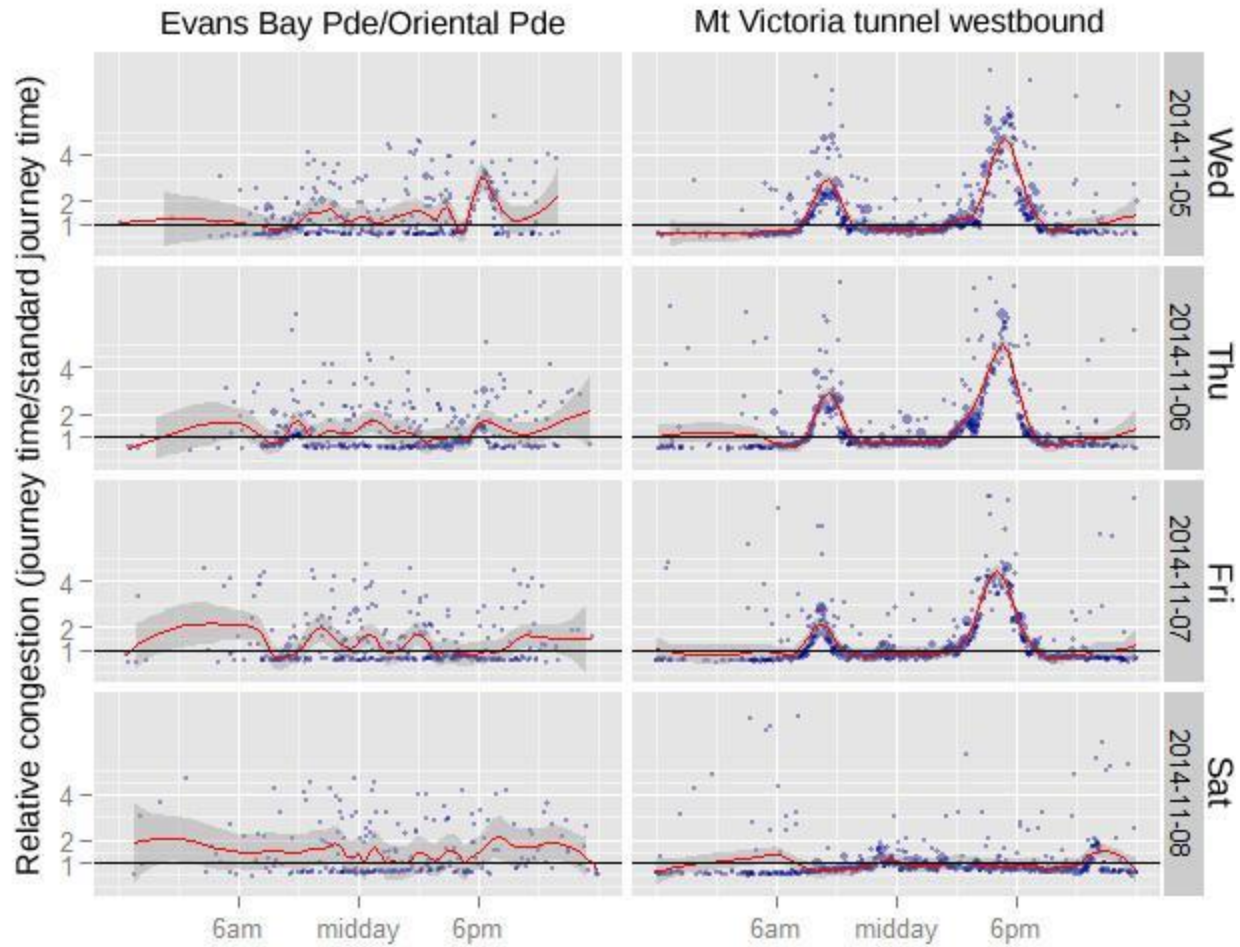
[www.tfc.govt.nz/current-conditions/journeytimes/](http://www.tfc.govt.nz/current-conditions/journeytimes/)





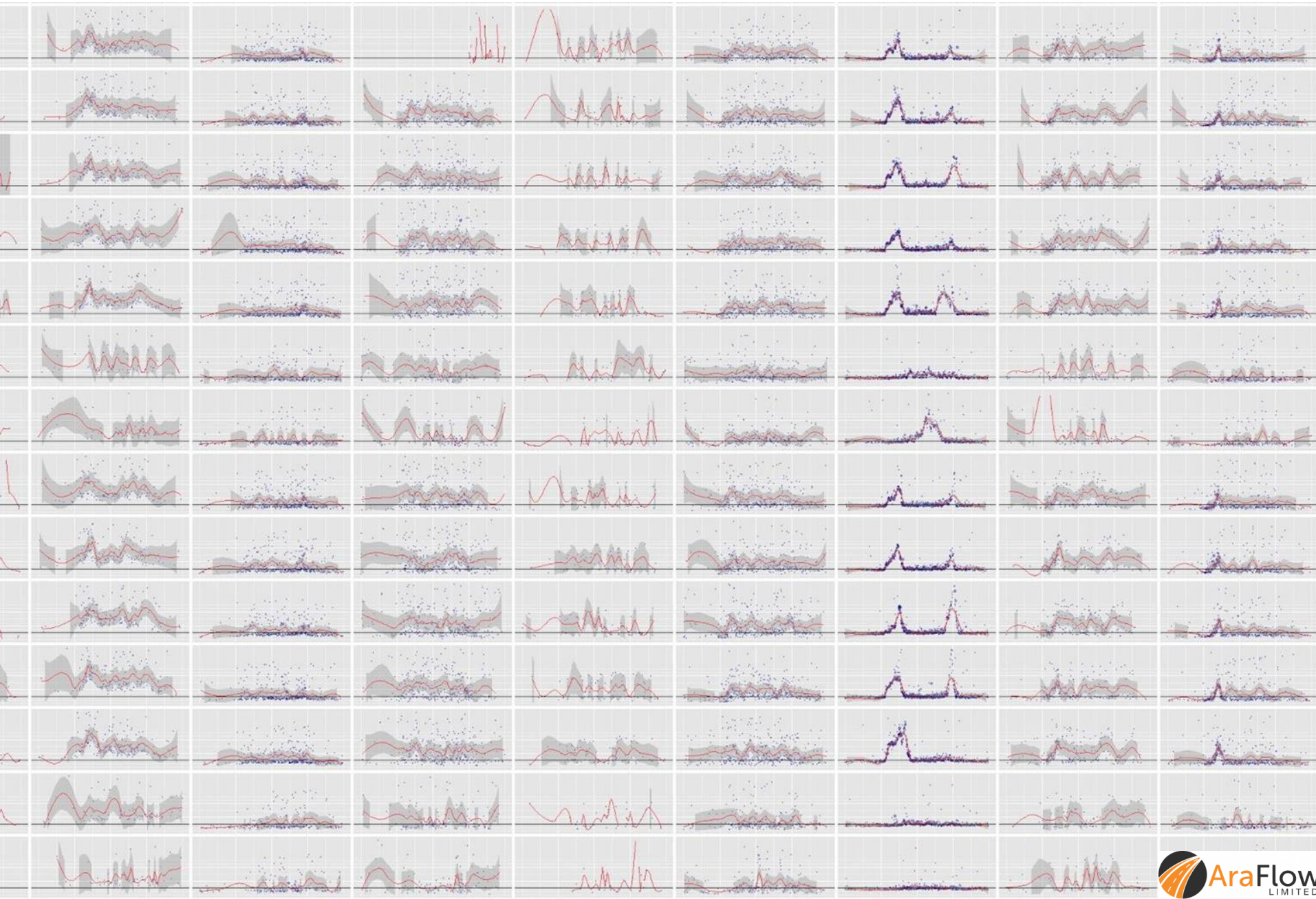
▶ Client Specific Services – Data Visualisation and Analysis ◀

# Underlying data analysis



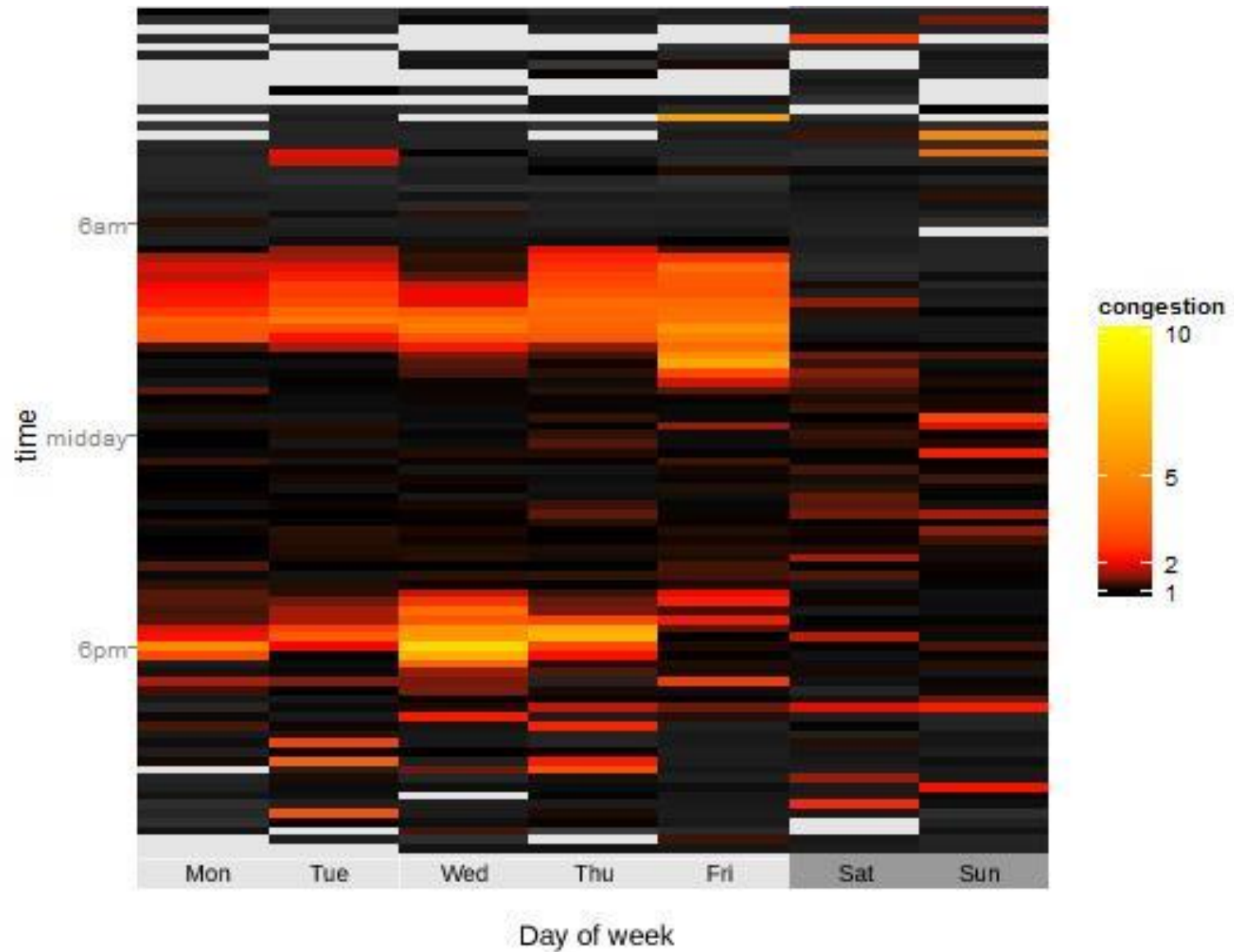


# Diversity of link behaviour



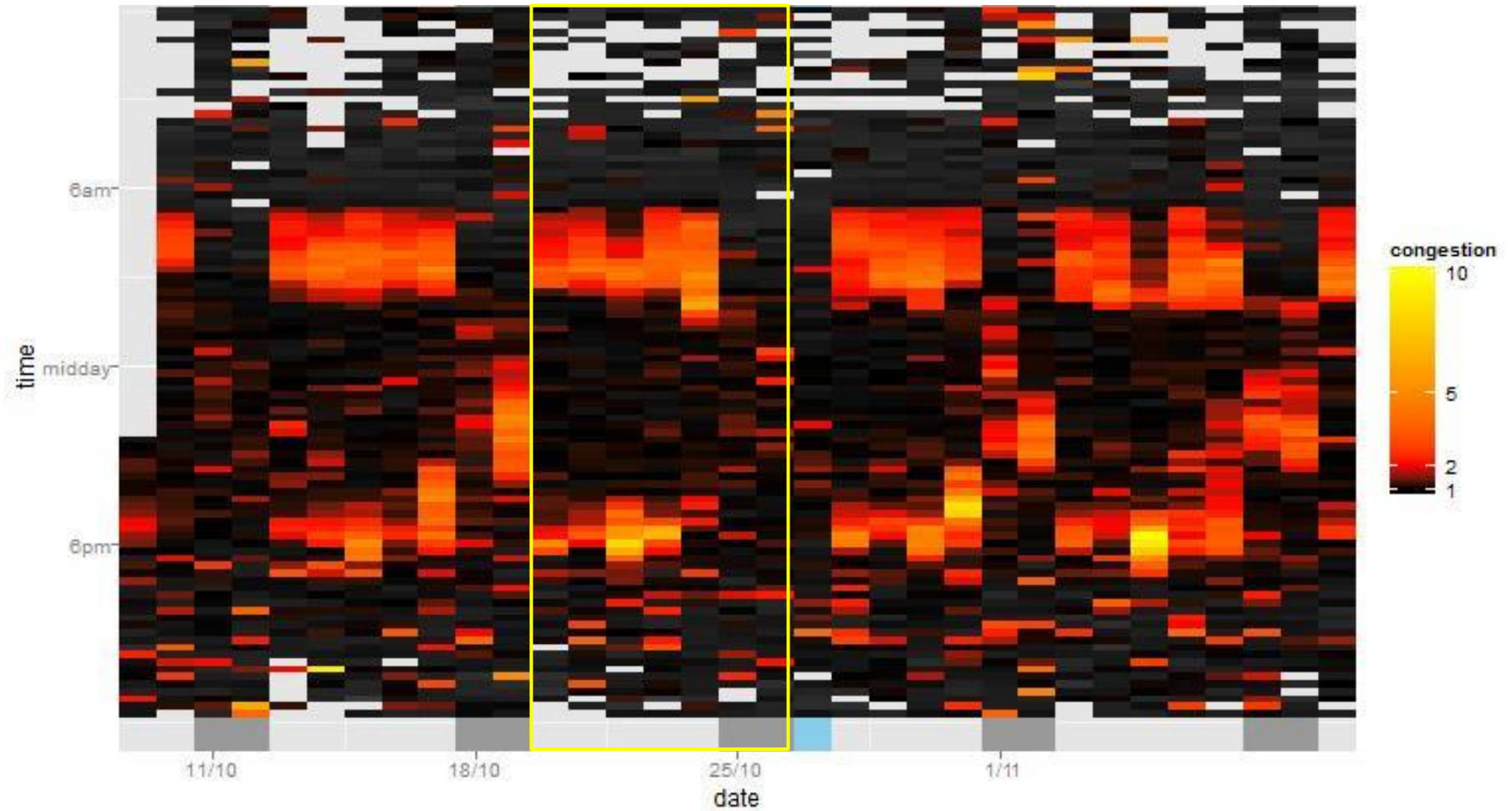
# A link as a “calendar layout” heatmap

## Terrace Tunnel Southbound



# The link heatmap over 5 weeks

## Terrace Tunnel Southbound





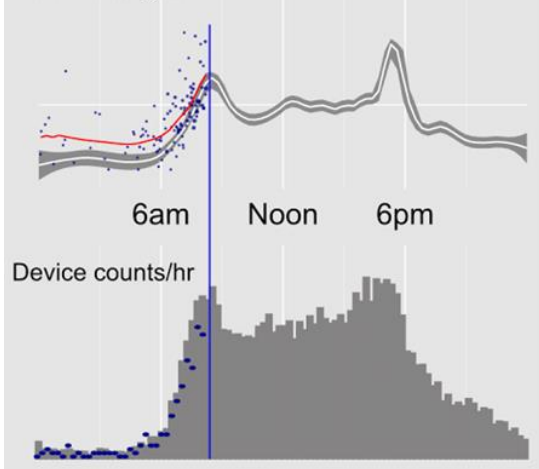
# A link "profile page" presenting the info & analysis

## Jervois Quay

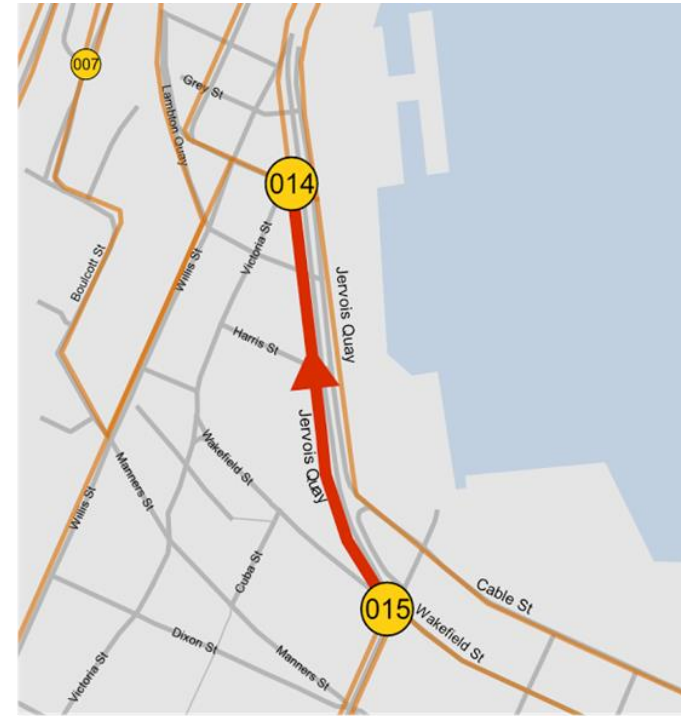
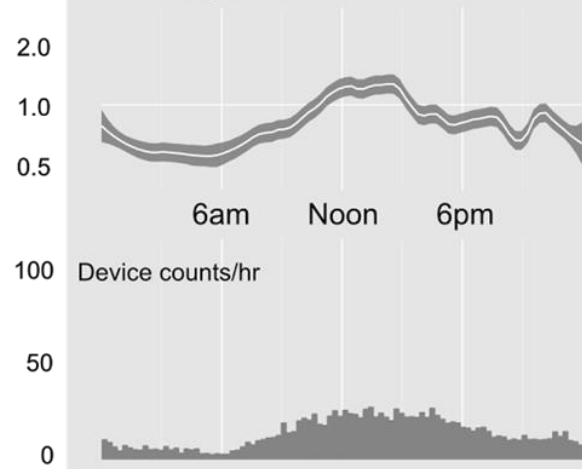
Waterfront route (northbound)

Taranaki St/Wakefield St (015) →  
Jervois Quay/Hunter St (014)

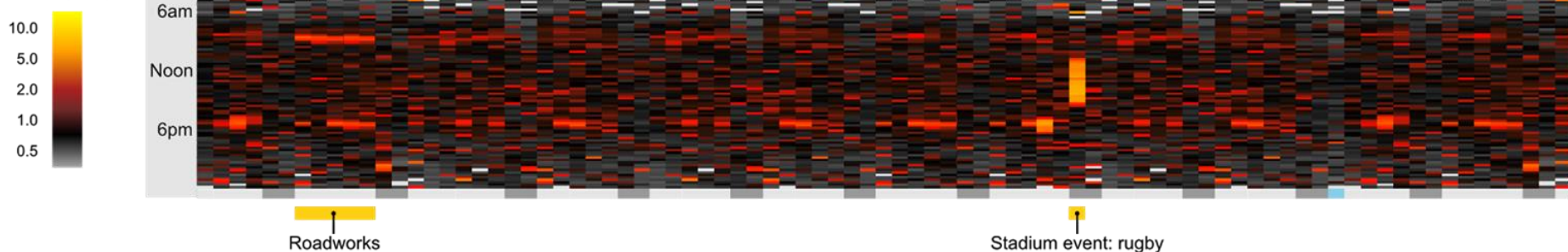
**Typical weekday**  
Relative congestion



**Typical weekend/holiday**  
Relative congestion



**Congestion**  
journey time/  
standard journey time



*In route(s):* Waterfront route (northbound)

*Linked from:* Taranaki St (016), Kent Tce (013), Wakefield St (002)

*Links to:* Cable St (002), The Terrace (007), Bowen St (008), Thorndon Quay (010), Aotea Quay (001)

*Notable traffic sources/destinations:* TSB Arena, Library, Civic Square carpark, Police HQ

*2013 Census:* 890 employees; 58 residents

*Upcoming road closures:*

Roadworks 24-27/11/2014 (one lane closed, Harris St to Willeston St)

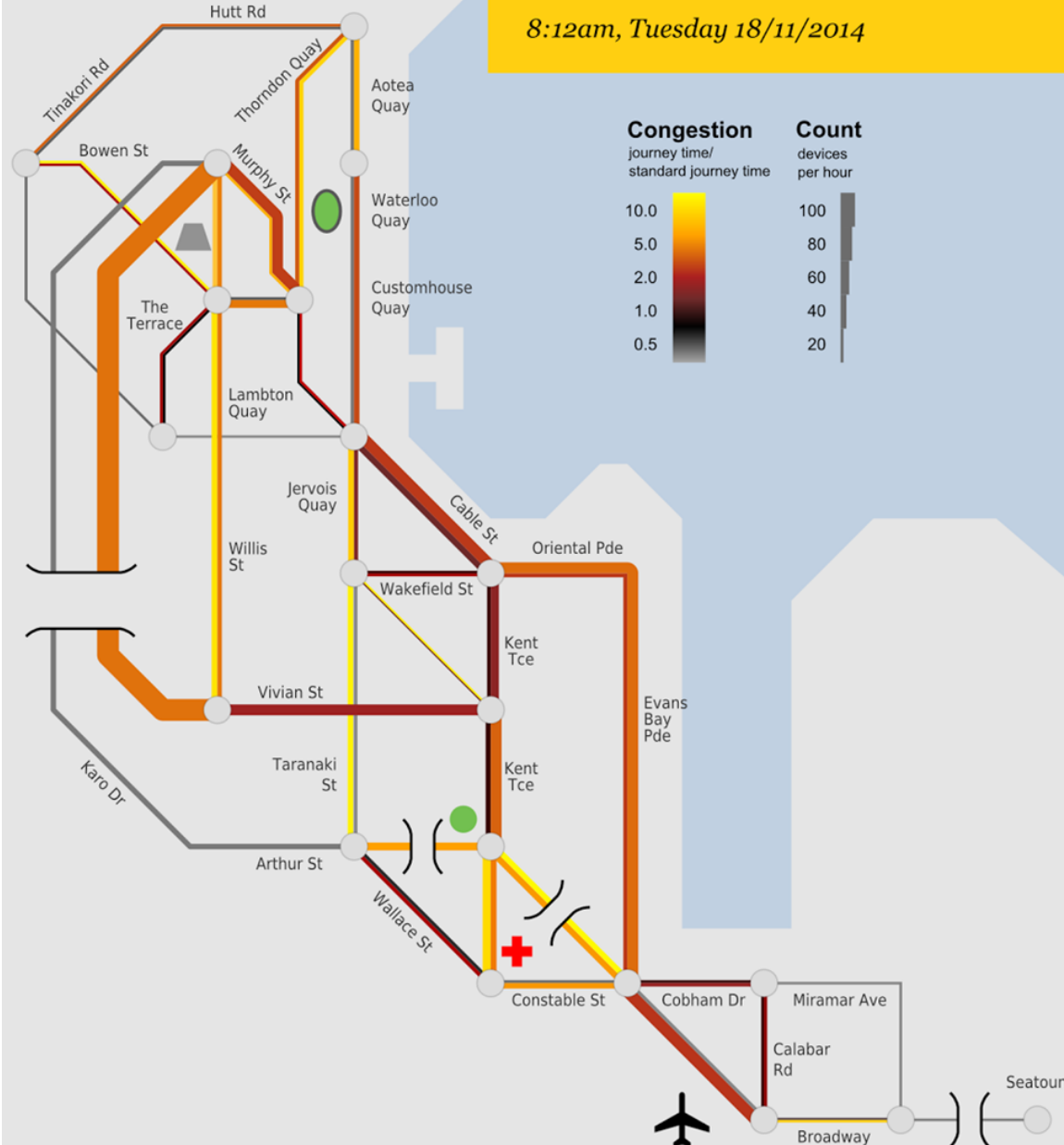
*Other upcoming events:*

Netball test 7-9pm Saturday 22/11/2014, TSB Arena

# The whole network profile

## Whole network: real-time view

8:12am, Tuesday 18/11/2014



## Current issues

- Mt Victoria Tunnel, eastbound
- Adelaide Rd, northbound
- Taranaki St, northbound
- Willis St/Lambton Quay, northbound
- Bowen St, eastbound
- Thorndon Quay, southbound
- Aotea Quay, southbound

## Predicted issues

0800 0815 0830 0845

- Mt Victoria Tunnel, westbound
- Terrace Tunnel, southbound
- Taranaki St, northbound
- Cable St, eastbound
- Oriental Pde/Evans Bay Pde, eastbound
- Buckle St

## Notices

**7:49am BREAKDOWN**

Mt Victoria tunnel, eastbound  
via TREIS

*Upcoming events:*

**7pm-11pm ROADWORKS**

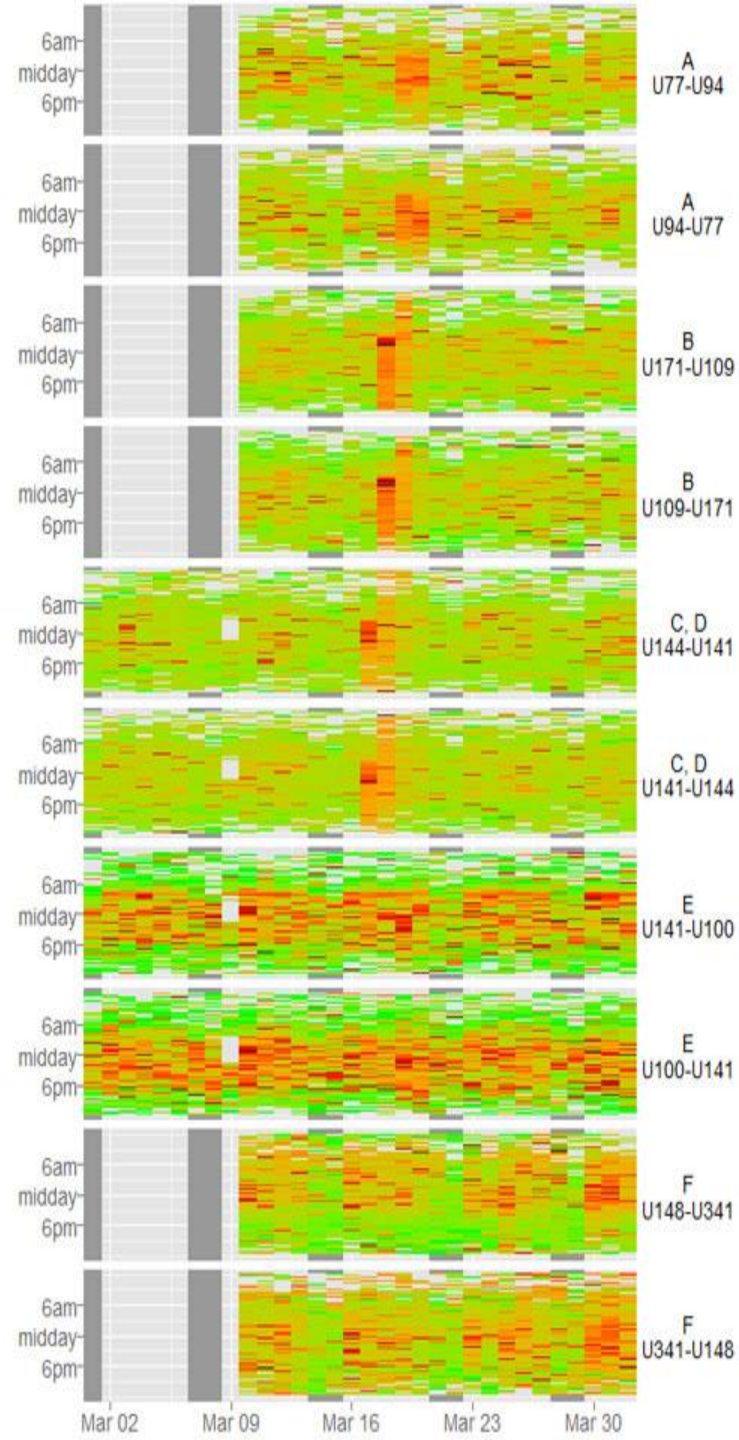
Victoria St between Ghuznee St and Abel Smith St



▶ Client Specific Services – Event and Incident Analysis ◀



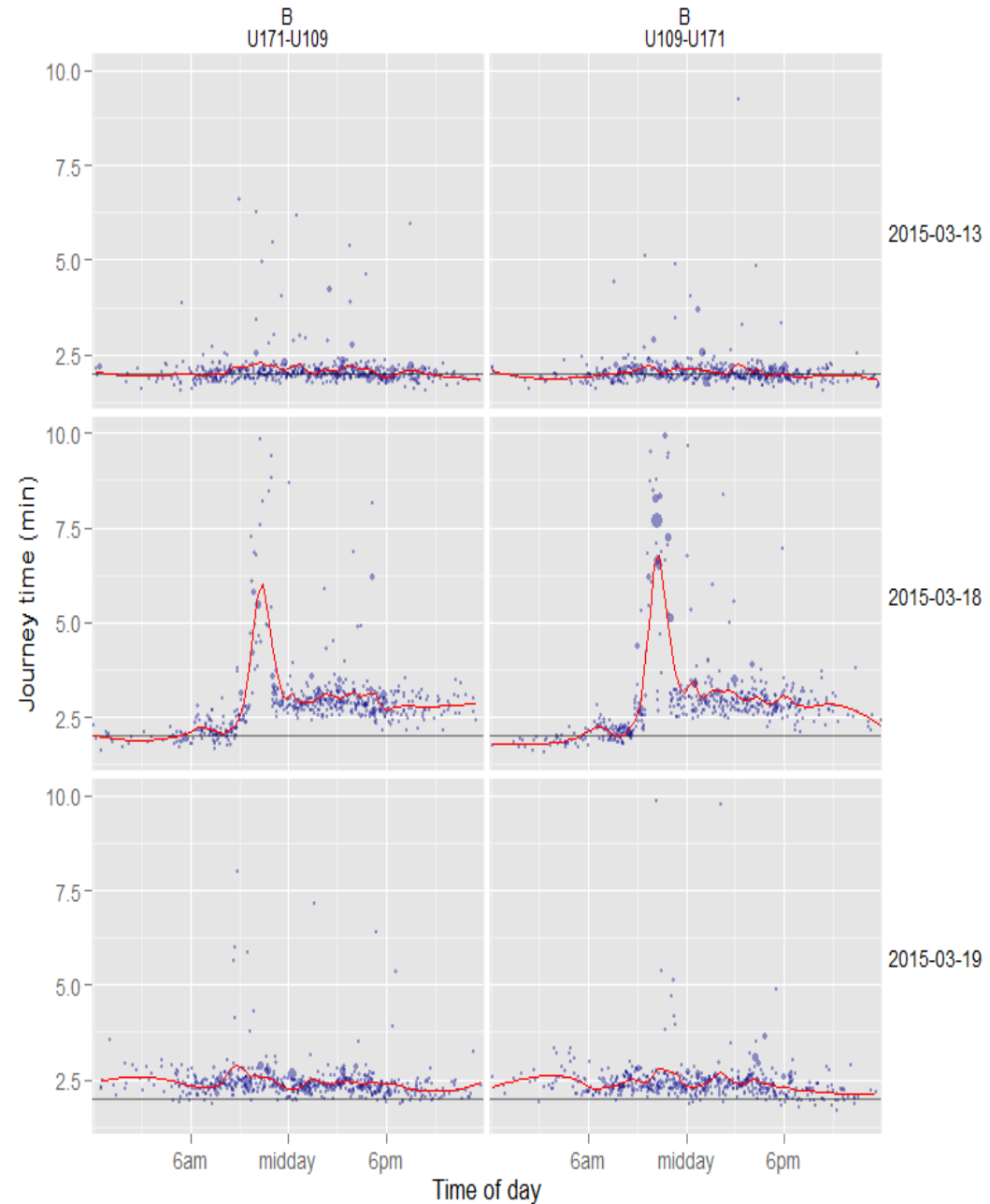
# Resurfacing evaluation



# Resurfacing effects

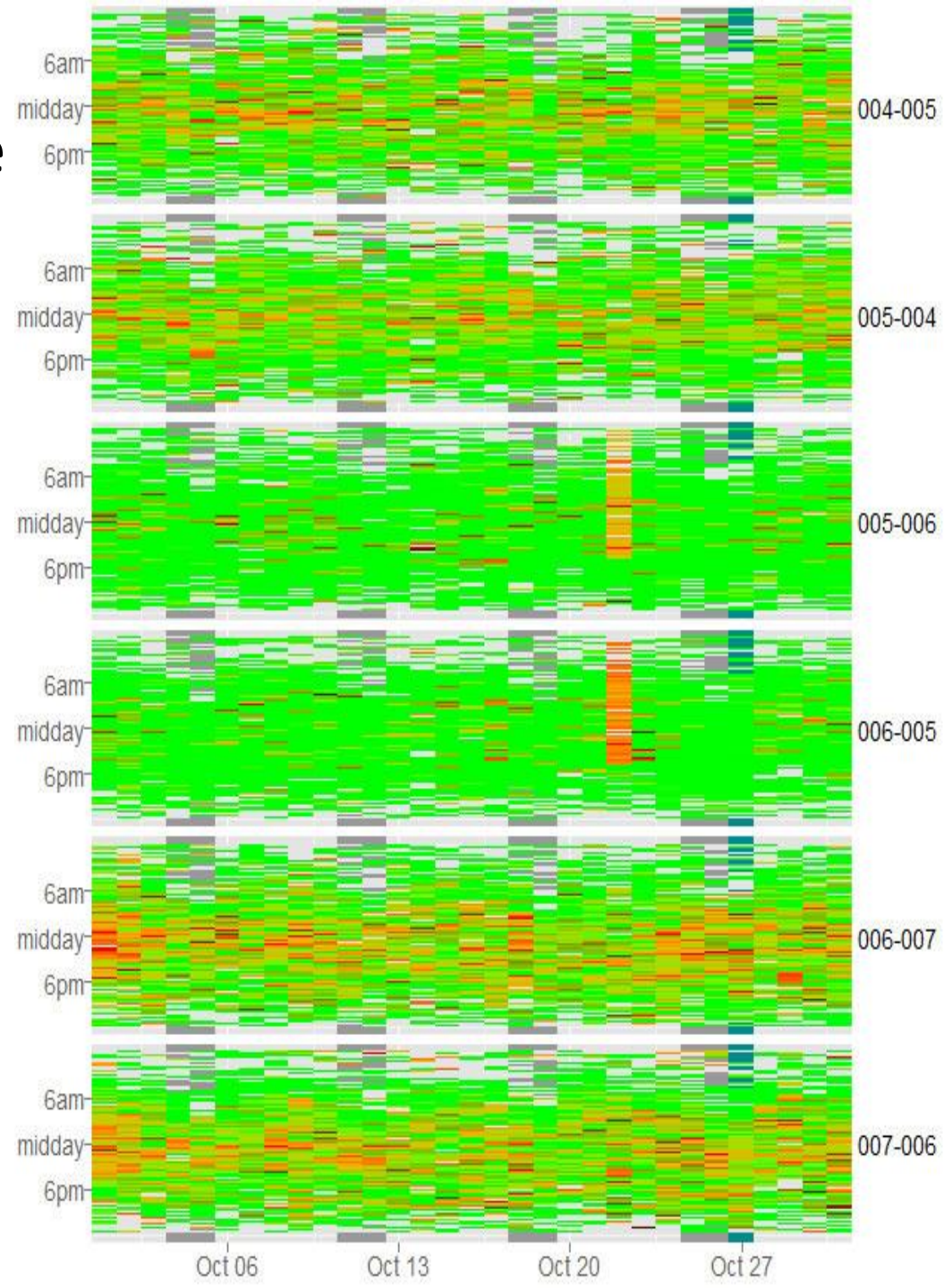
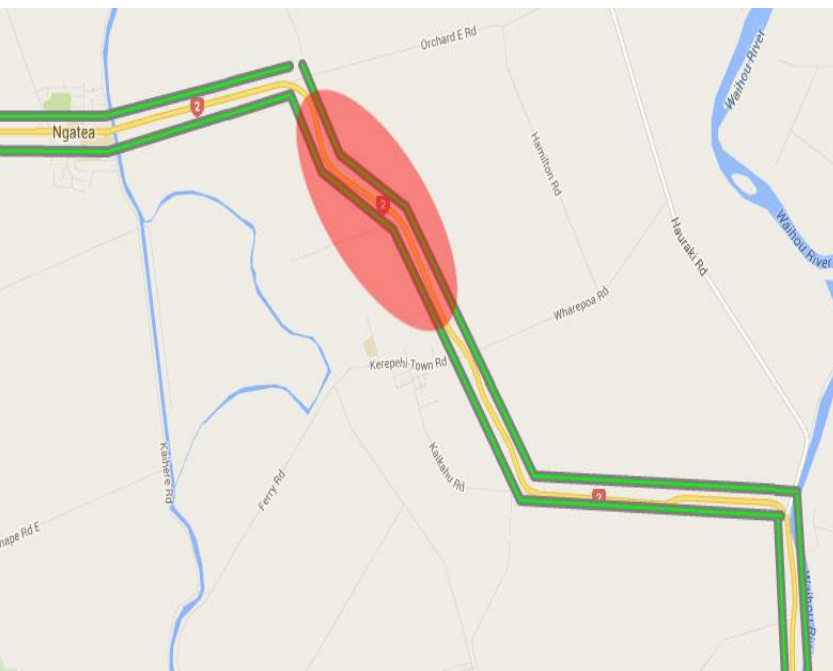


## SH2 Re-Seal Works Evaluation: journey time vs normal journey time (2 mins)

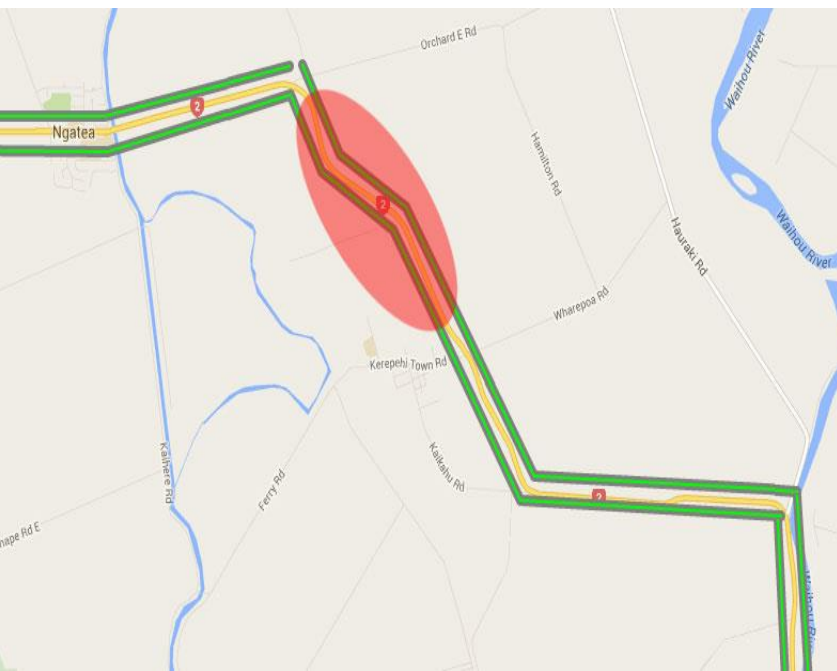




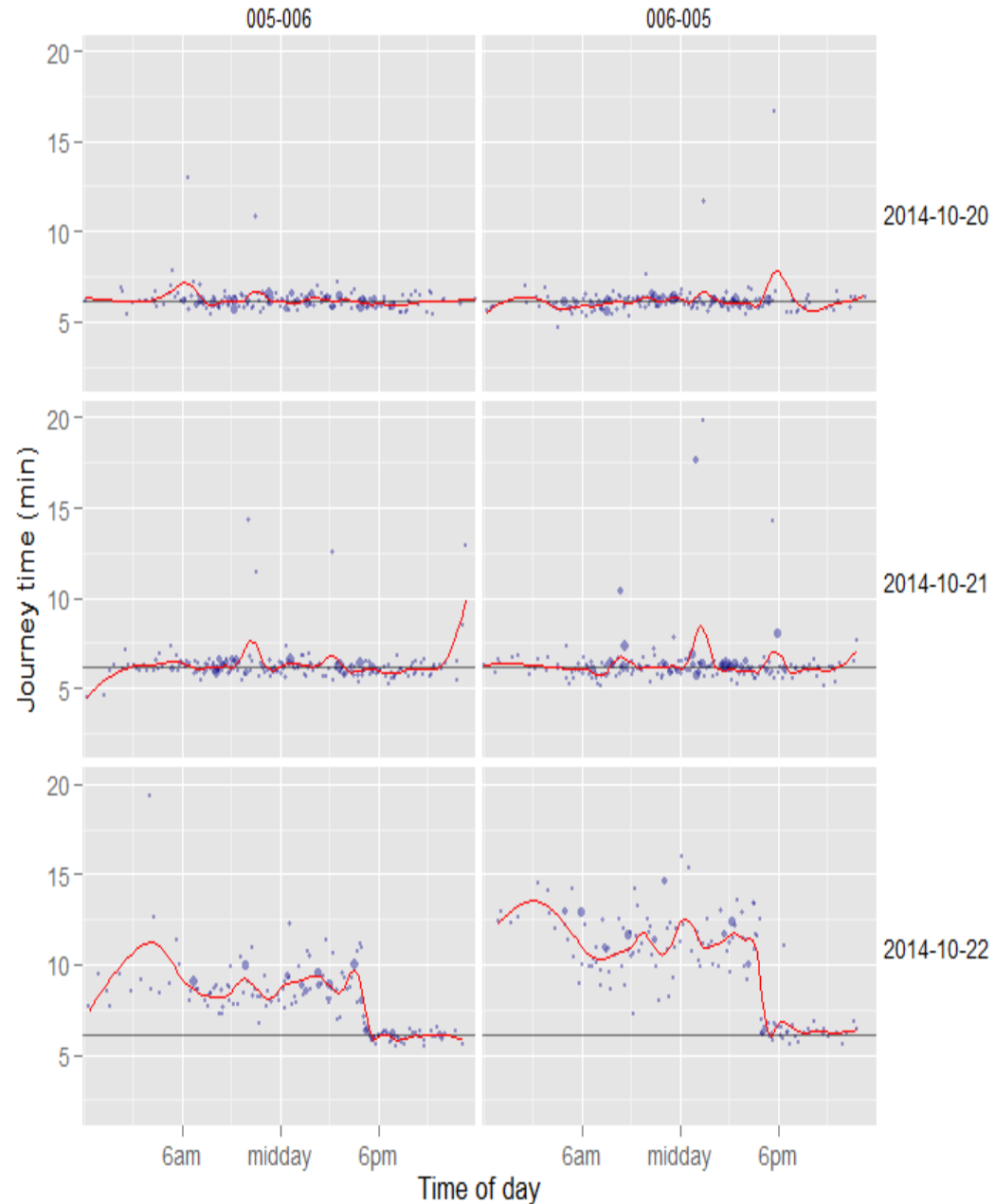
# Effect of road closure



# Effect of road closure



## SH2 Ngatea-Kerepehi Closure: journey time vs normal journey time (6.15 mins)

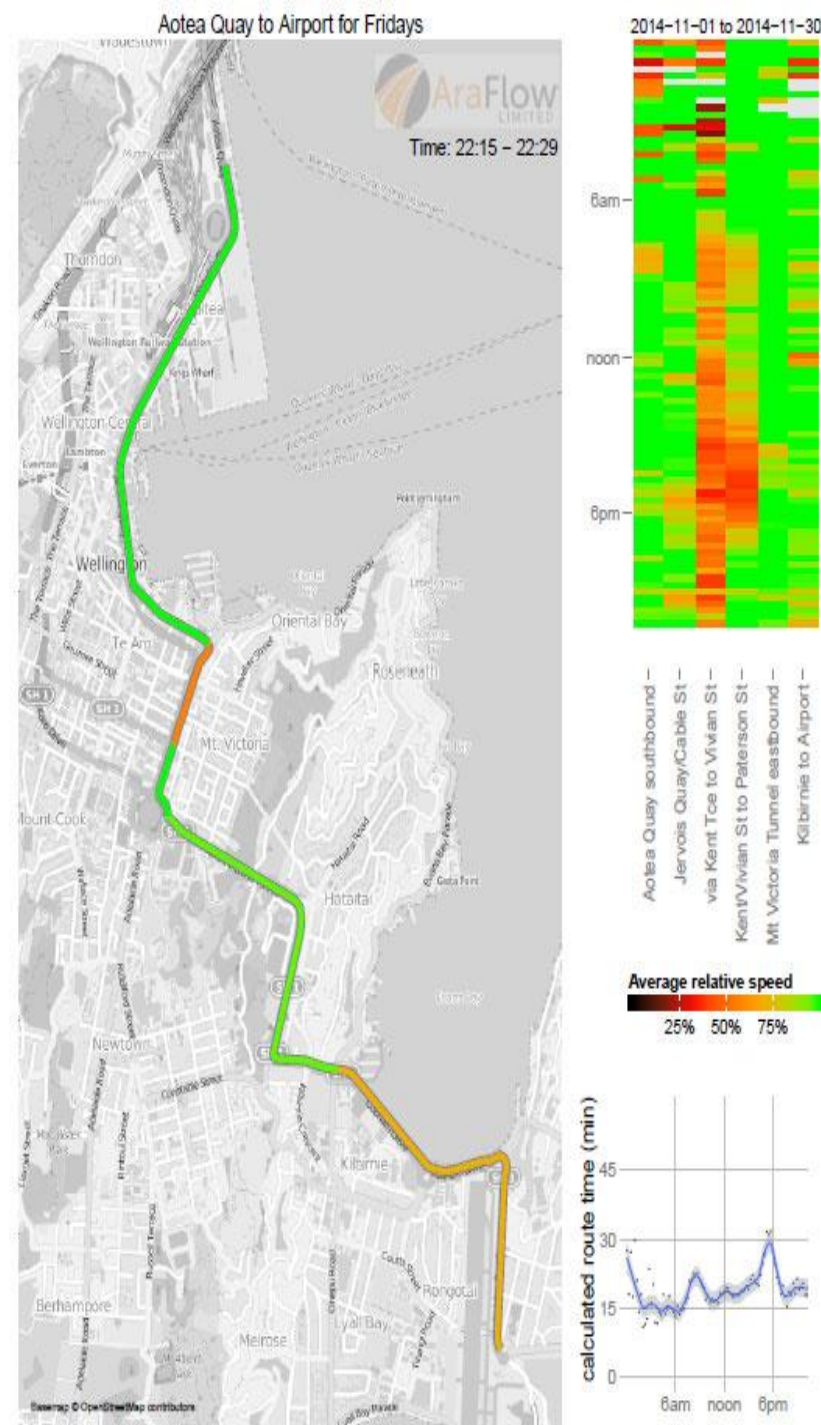
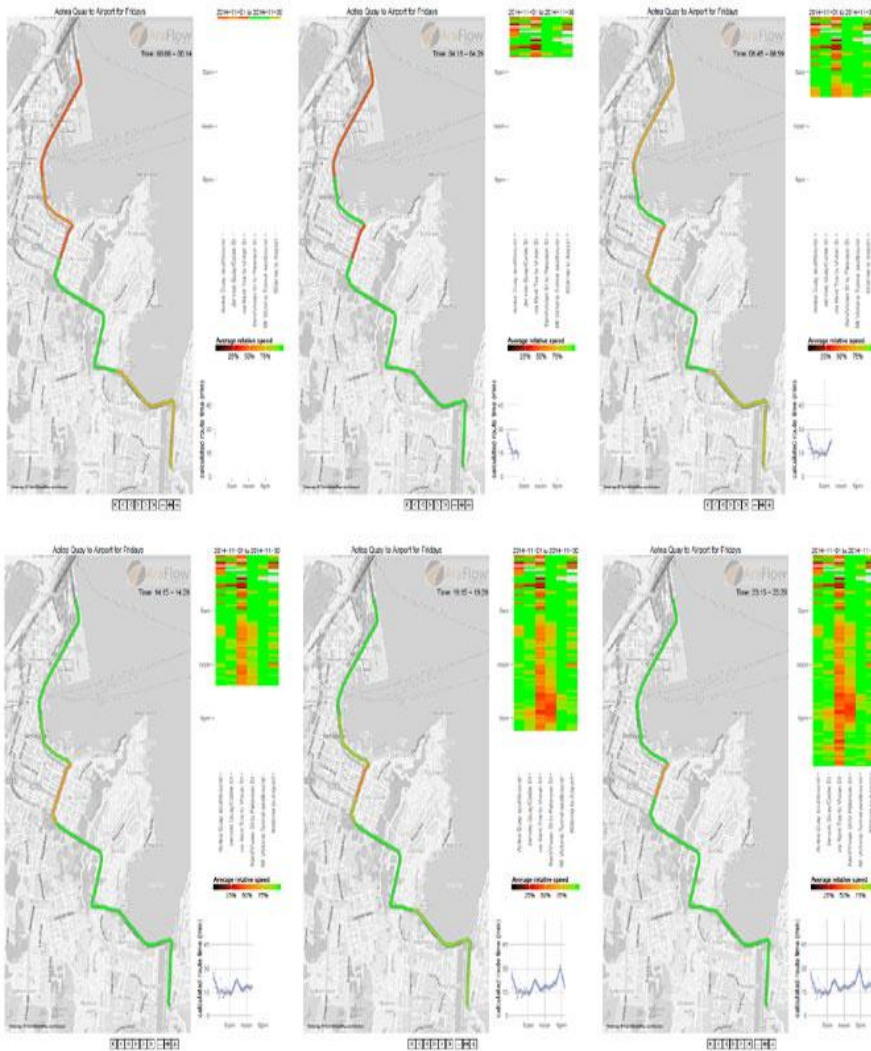




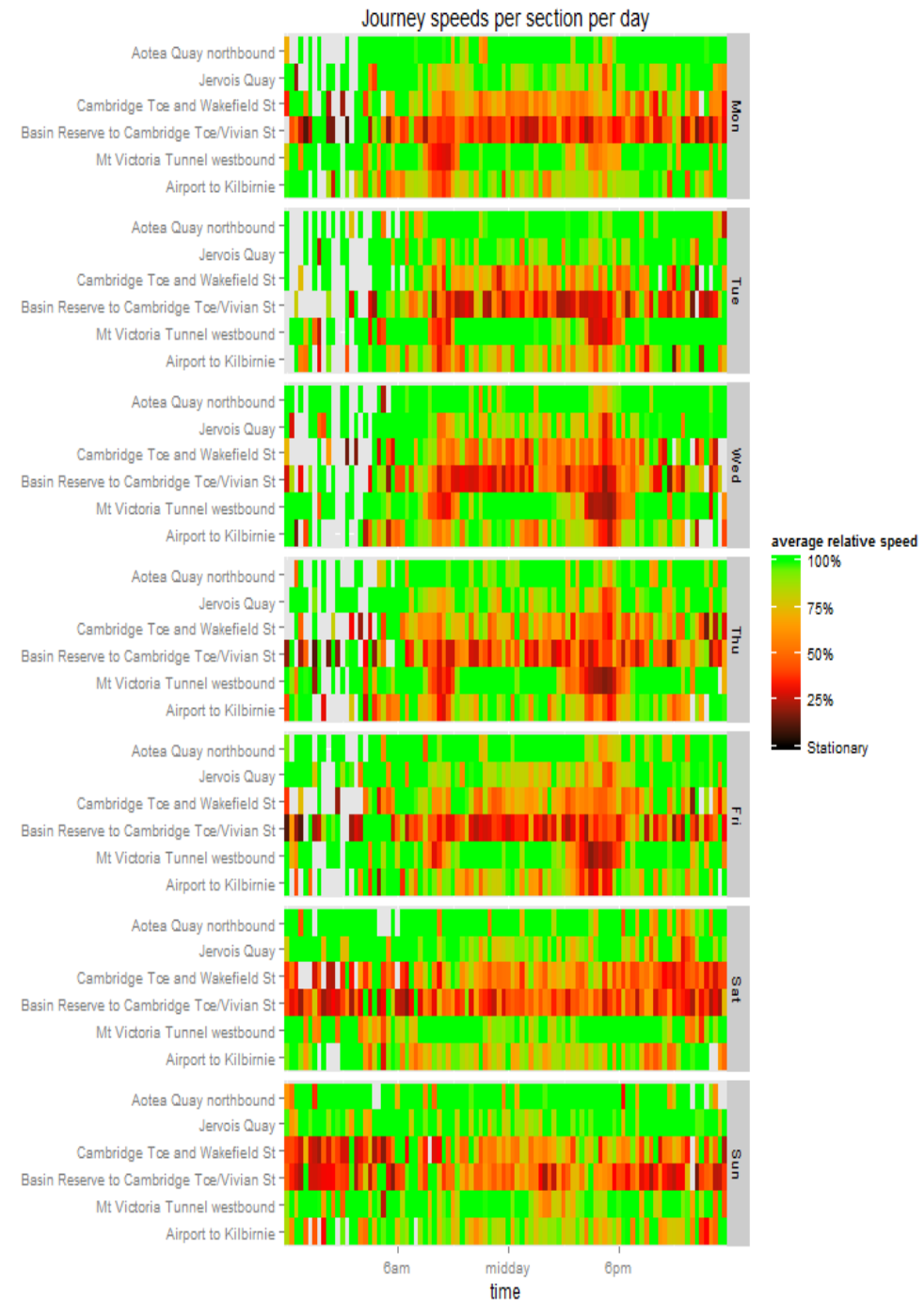
## ▶ Client Specific Services – Route Analysis ◀



# Animated maps and charts



# Route analysis



# Route analysis

Waimakariri bridge

