

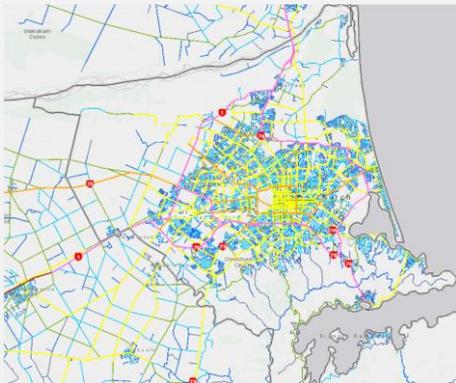


AT A GLANCE

Roading Network: Christchurch City

ONRC Customer Outcome Measures and Good Practice: Travel Time Reliability – Throughput at indicator sites

Christchurch City ONRC:
Arterials 500km (22%)
Collectors 900km (39%)
Local / Access 900km (39%)
TOTAL 2,300k



Christchurch City manages a considerable network comprising the city and Banks Peninsula. Traffic patterns and travel times continue to change from week to week as the rebuild progresses. New motorways and other Roads of Significance are being rolled out, so further changes are certain. The role of CTOC also includes networks managed by other agencies.

Pictures: Christchurch City Council, tmpforchch.co.nz, dmcp.govt.nz

Introduction



This Case Study is one of a suite created to assist with the implementation of the ONRC Performance Measures. Travel Time Reliability is an ONRC performance measure for Customer Outcome 1: Throughput at indicator sites.

This Case Study reviews what has been achieved by the Christchurch Transport Operations Centre (CTOC) in a particularly challenging environment following the Christchurch Earthquakes of September 2010 and February 2011, and the subsequent travel disruption from post-earthquake rebuilding activities.

The Christchurch Transport Operations Centre (CTOC) has been established as a partnership between Christchurch City Council, New Zealand Transport Agency and Environment Canterbury to monitor and manage the transport network (both local roads and state highways) and to improve traffic flows. The objective being to reduce congestion and delays on all routes, but in particular along key commuter, public transport and freight routes. The centre has also built systems to inform the customers of the state of the network, enabling customers to make smart transport choices.

Key CTOC tasks are:

- monitor the roading network through live video links and traffic data;
- review and map all temporary traffic management plans to improve traffic congestion and reduce delays;
- ensure real-time traffic information is widely available to all road users
- look to introduce a range of initiatives all designed to improve traffic flows throughout the city, and
- manage road closures for all rebuild works, such as SCIRT and the vertical rebuild, to ensure optimum traveller choices.

Traffic flows around Christchurch have been disrupted following the Canterbury Earthquakes CTOC has developed a range of tools to assist journey choice and improve travel time reliability.

Key Practices

A CCC, NZTA and ECan Partnership approach to a medium-term problem following the Canterbury Earthquakes.

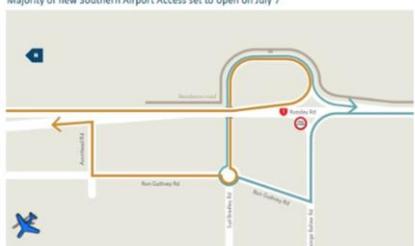
- ✓ Key route sensors, travel time tracking and analysis.
- ✓ Development of tools and techniques to assist in managing travel time reliability
- ✓ Monthly reporting of progress, results and issues.
- ✓ One organisation for public information and reference.
- ✓ Better coordination of work in the road corridor
- ✓ Improved worker and public safety
- ✓ More certain travel time reliability,
- ✓ Website and mobile app for public communication.
- ✓ Real time information and communication enables traveller choices
- ✓ Social media is used as part of the overall user communications experience.

Tweets Tweets & replies Media

TFC @TransportChCh · 5h
Expect delays around Russley Rd / Memorial Ave as the Airport Southern Access Loop opens Fri, 7 July. Take care. ^SM ow.ly/APBs30diyqj

July 2017

UPDATE - Southern Airport Access
Majority of new Southern Airport Access set to open on July 7



Work on the Russley Road Upgrade is ramping up and this means changes ahead for those travelling along State Highway 1.

The new Southern Airport Access will open Friday July 7 at 3.30pm, closing the turning bay on Russley Road, opposite Avonhead Park. Motorists travelling north on Russley Road and wishing to change travel direction will need to exit Russley Road at George Below Road, turn right onto Ron Guthrie Road and right onto Sgt Bradley Road, then go under SH1 and sweep back round onto Russley Road (follow the teal line).

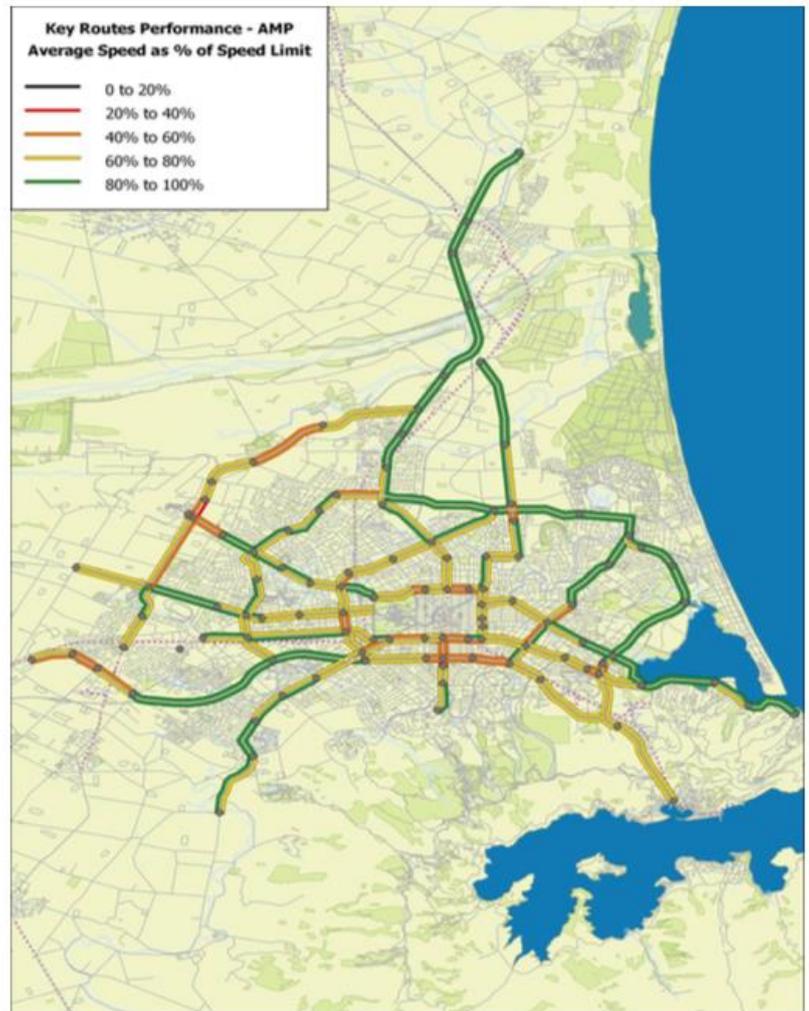
Motorists travelling south on Russley Road and wanting to change travel direction will need to exit Russley Road at Sgt Bradley Road, travel round and under SH1 and turn right onto Ron Guthrie Road and right into Avonhead Road to get back onto Russley Road (follow the brown line). This is a temporary measure until the George Below Road onramp opens in September.

Methodology

CTOC has identified 22 key routes which it monitors and reports on. These routes include CBD to major suburbs, CBD to Airport, Motorways, the Outer Freight Ring Route, the Inner Ring Routes and the three Avenues – Moorhouse, Fitzgerald and Bealey.

Performance monitoring is completed for general traffic and public transport and reports on the AM/PM peak and inter peak average, variance and predictability. Travel times are reported for comparison purposes over the previous twelve months. Monthly congestion is reviewed and 15 minutes average travel times tracked for the last five weeks.

AM Peak Period Heat Map:



Heat Maps, as shown above, of AM and PM peaks on key routes have been developed to assist with analysis of travel time reliability, and when the 'hot spots' for travel delays are occurring.

Real time information and communication is the key to users making smart and optimum traveller choices.

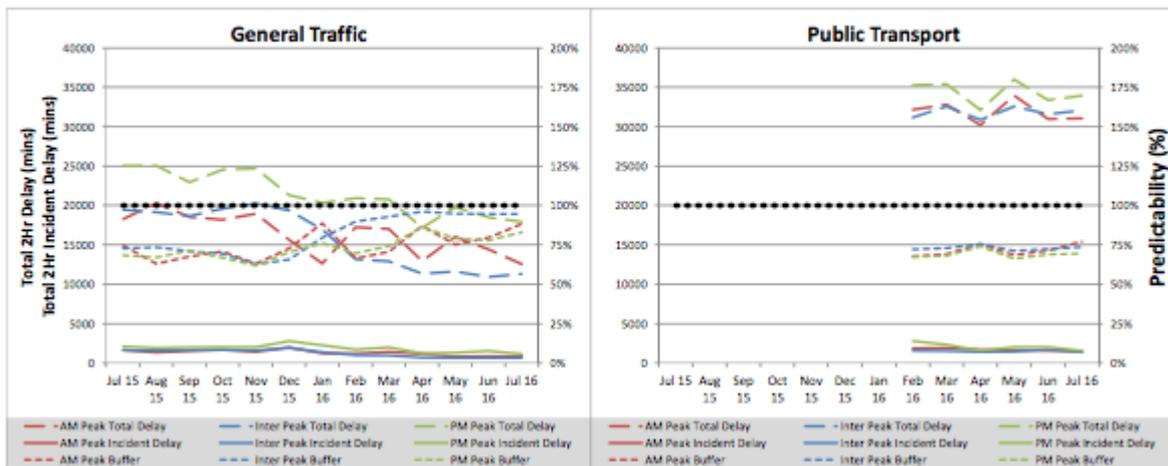
Methodology

Real time sensors and counters are used to provide analysis of key route average journey times and the variation of these journey times. Reporting dashboards (example below) allow reporting to governance and management of monthly results and progress



Monthly reporting is undertaken on overall trends and patterns, with detailed analysis also included for each key route.

Overall Total Delay, Incident Delay and Average Buffer - Last 12 Months



Real time traffic delay and message boards have been useful in informing road users of expected travel times, and allowing alternative decisions to be made where there is traffic congestion or construction related delays.

CTOC has coupled the use of message boards with website, mobile app and social media deployment, where road users can check and plan journeys based on real time information.

These strategies do not eliminate journey delays, but they do allow road users to make smart and optimised decisions based on up to date information, and their own needs and preferences.

Conclusion

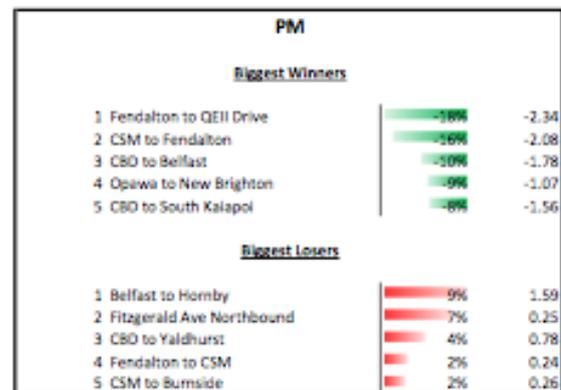
Christchurch has faced a wide range of challenges and traffic disruptions following the earthquakes and subsequent rebuild. The CCC, NZTA and ECan partnership with CTOC has allowed all relevant agencies to manage temporary traffic disruption and develop a single point of communication with road users, road construction crews, and other associated road corridor users.

CTOC has facilitated the development and deployment of a range of tools and techniques for traffic management and road user communication. Real time monitoring and communication on key routes has been a major success in providing road users with the ability to make smart and optimised decisions.

The monthly data analysis of the real-time monitoring has enabled CTOC to produce governance and management reporting that shows successes, positive results and travel delay hot-spots. This level of reporting has enabled confidence to be gained in the steady progress being made in the post-earthquake reconstruction.

The range of tools and techniques that have been developed by CTOC will be available for wider use and implementation as applicable.

4 Route Outcomes - Travel Time Average and Variation Change



“The CTOC website, app, and social media assist road users to find the quickest and safest route around the city”

References

CTOC Key Route Travel Time Performance Monitoring Report – July 2016

CTOC Board Meeting Presentation – June 2016

CTOC Public Transport Travel Time Performance Monitoring Report - July 2016

<https://twitter.com/TransportChCh/media>

<http://tmpforchch.co.nz>

<http://www.journeys.nzta.govt.nz/christchurch/about-ctoc/>

Road Efficiency Group (REG) is a collaborative project between local government and the NZTA Transport Agency. For more information, please contact:

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