

TECHNICAL NOTE

COMMUNICATION AND COLLABORATION: THE KEY TO KEEPING CHRISTCHURCH MOVING

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ABSTRACT

Following the Christchurch earthquakes, the frequency and magnitude of change in our transport system requires an agile, reliable and co-ordinated communications regime to inform road users. A collaborative approach is essential, bringing together not only the two road controlling authorities within Christchurch, but regional bodies and all organisations involved in the rebuild and recovery of the city.

Progress towards a more comprehensive and coherent communication system has already been made. The Transport for Christchurch website, a joint venture between NZTA, Christchurch City Council and Environment Canterbury was launched in April 2012. The website has proven successful in disseminating information regarding events on the roading network. The key is to capitalise on this, and to build a more robust communication strategy reflecting the needs of travellers in Christchurch, that will optimise network efficiency and take Christchurch into the future.

Travel patterns remain fluid and the overall strategic direction for transport in Christchurch has changed. We need to equip all road users with accurate, relevant and timely information, so they may make smarter, more informed choices on route, mode and time of travel.

The purpose of the presentation is to open up discussion around what information should be provided to road users and what technology exists to improve network efficiency through the provision of traveller information.

INTRODUCTION

The transport system can be described as a supply demand relationship, demands being generated by land use activity and network capacity being the supply side of the relationship. In Christchurch, both elements of this relationship have been modified, and continue to change rapidly. The Christchurch Earthquakes caused major disruptions to the transport network. It is estimated that 52% of Christchurch's urban sealed roads need rebuilding due to earthquake damage (SCIRT, 2013). This results in pressure on the networks capacity through the high volume of road work sites (planned events), as essential repair and rebuild work is undertaken. There are currently over 470 work sites approved at any one time on the roading network (TMPforChch, February 2013). Changing land use and travel patterns have also increased congestion across the network as trips are now longer and there are more of them. This is resulting in a significant increase in the level of congestion on the Christchurch network (Figure 1).

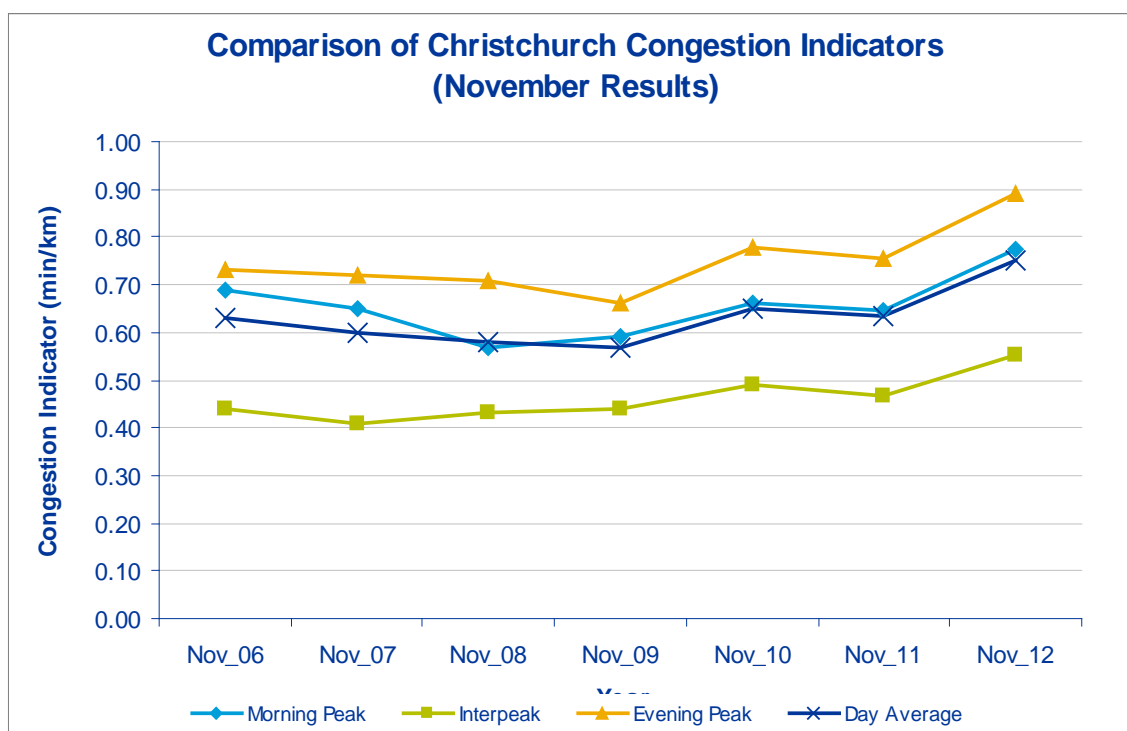


Figure 1: Comparison of Christchurch congestion indicators. Source: Christchurch City Council, Travel time survey 2012)

Road controlling authorities are traditionally good at managing network capacity and participate in influencing location and type of landuse activity. However historically there has been little focus on day to day management of travel demands.

The immediate need for Christchurch following the earthquakes was a communication tool providing real time information on planned events on the road network and a transport information portal linking current traffic, bus and road closure information into one location. This was in response to severe disruption on the network. It was essential that any new communication system utilised a 'one network approach' bringing together all those involved in the recovery and rebuild.

The provision of traveller information has now evolved. Greater emphasis has been placed on the need to provide traveller information to road users so they can make smart choices and therefore the best use is made of the current transport system. To deliver this outcome

a specific traveller information team has been established as part of the Christchurch Transport Operation Centre (CTOC). This is a joint venture between NZTA, Christchurch City Council and Environment Canterbury.

The main functions of the CTOC are (CTOC Business Plan, 2012):

- Optimise – Through signal efficiency improvements and proactive traffic engineering
- Manage - Demanding rebuild through Temporary Traffic Management practices
- Inform - Need to keep customers informed
- Monitor – Understand changes to travel demands and operational conditions

CTOC recognises that operational management of the transport system requires management of both the travel demands and the transport system. This is evidenced by traveller information, i.e. informing customers, being one of the 4 key priorities.

TRAVELLER INFORMATION

Travel Information within the Christchurch context aims to make use of information and communication technologies to deliver real time information to travellers utilising the road network, both before and during their journey. Through the provision of relevant and reliable traveller information road users will be able to make more informed decisions on if, how, when and where they travel. This in turn will minimise the impacts of delays and help reduce driver frustration. Travel Information therefore plays an important part in improving network utilisation and safety.

There will be a process of continuous development in order to ensure that information gathered is quickly translated into useful information for travellers that is timely, relevant and reliable. Technology is rapidly changing and this impacts road users ability to access information and their expectations. Therefore the longer term strategy for traveller information will be one that keeps evolving, consistently reviewing the approach to the delivery of information both before and during a journey.

Success can be measured through an increase in customer satisfaction relating to the availability of reliable travel information, and a measurable variation in traffic patterns when major events occur.

In order to provide tangible and robust traveller information, the adjacent agencies, depicted in Figure 2, must work closely together. The relationship between these stakeholders is symbiotic – each depends on the other to achieve their respective outputs.

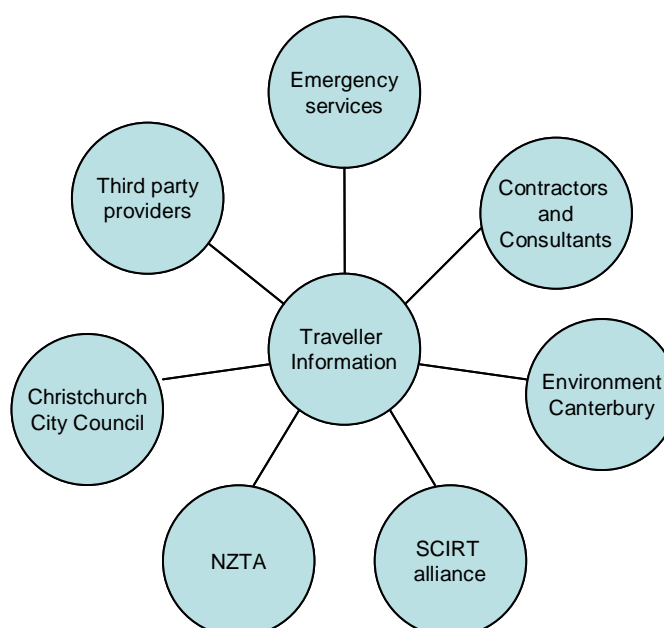


Figure 2: Key Relationships

Through NZTA customer insight programme following the earthquake, travellers within Christchurch have highlighted the importance of accessible, real time travel information, with 78% of Christchurch residents stating that more access to travel information would be helpful (NZTA Opinion Survey, July 2011).

Transport for Christchurch (TfC)

In order to reduce congestion following the 22 February 2011 earthquake, a strategic routes team was established (now superseded by CTOC). The aim was to implement 'quick win' strategies that would reduce congestion across the city. As part of this work the Christchurch City Council and NZTA initiated the development of the 'Transport for Christchurch' website. This was in response to large disparities that were found in the information provided to travellers. Immediately following the earthquake roading information was available through a number of channels including a quake helpline, printed media, social media and through a variety of websites, which ranged from official government sites such as www.canterburyearthquake.org.nz through to crowd sourced websites including www.eq.org.nz, which was run by the private sector. All contained different and conflicting information, with much of the information being either incorrect or out of date.

The TfC Transport for Christchurch website was built as a multi-agency communication tool following the earthquakes. TfC was built as an operational tool to provide information to allow road users to make informed travel choices, for example, around their chosen route and time of travel, in order to achieve a safe and efficient road network. The website offers a valid and official source of information on planned events on the road network. Figure 3 depicts the TfC website home page. The main focus of the site is on a road condition map, which displays information on planned events such as road work sites and road closures that may affect travel around the city. This includes information on what is actually happening on the road, the rationale behind the works and the start and completion date. In addition to the road condition map, information on the network is disseminated through news alerts and updates. Other information on the website includes road safety campaigns, and other modes of transport such as walking and cycling and public transport.

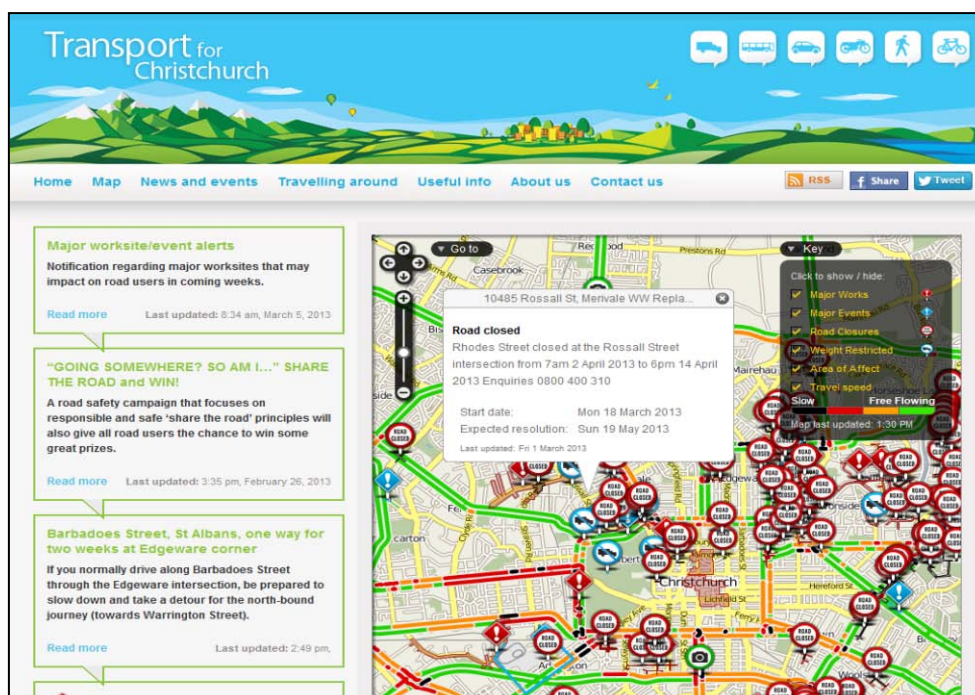


Figure 3: TfC homepage

Analysis of the TfC Website (2 April – Feb 2013)

Following its inception on 2 April 2012 the Transport for Christchurch website has achieved the following (Source: Google Analytics 2013):

- over 32,300 unique visitors have accessed the site
- TfC has been used over 52,300 times
- 38% of users are return visitors

Due to the disruption caused to the roading network as a result of major road works/road closures, spikes in visitor numbers have been found following unplanned events such as the flooding in August 2012 and planned events such as the Super Rugby games and the Canterbury A&P show. 76% of visitors to the TfC website were as a result of referrals through either radio, press or the Christchurch City Council homepage (Source: Google Analytics 2013). This highlights the potential of the website as a portal for public communication in emergency events and it reinforces the need for a dedicated transport related website.

To date no direct marketing of the website has been undertaken. Ongoing collaboration and communication have been key to achieving visitor numbers to the website. Following a full review of the current functionality of the website, a marketing plan will be implemented once the usability changes have been implemented. This will build on the third party tie-ins already present and establish business rules around the information supplied to travellers through the TfC website.

The Future

The TfC partners responded to an immediate need post earthquake. However, very little investigation regarding the type of information and channels that best deliver a safe and efficient transport system, in the midst of necessary infrastructural rebuilding has been undertaken.

The TfC website has become an important tool in managing Christchurch's roads as a single network through collaboration of all RCAs to provide travellers with a unified view of transport conditions. Travel patterns remain fluid in and around Christchurch, therefore equipping all road users with accurate and relevant information, so they may make smarter more informed choices, around route, mode and time, is a key step towards improving network efficiency.

In the short term, the partners are progressing with a mobile application of the TfC website as scheduled for launch in April 2013. This will open up a wider market for the provision of traveller information on route. The longer term goals focus on encouraging modal change and the promotion of active travel to ensure network efficiency. Usability reviews of the current functionality of the TfC website and additional functionality is being investigated (based on customer feedback) for the Phase 2 development of the site. Prior to the instigation of a specific traveller information team the focus and resource was not available to undertake this work.

In order to establish more rigour for further developments, robust evaluation is required to measure the ongoing benefits of providing traveller information and any associated tools, such as the Transport for Christchurch website. This includes further monitoring and evaluation of the network performance in order to fully explore the effects of traveller information. In particular, focusing on understanding what information is useful to road users and the expectations around the provision of traveller information.

Discussion Topics

The area of traveller information has gained an increased priority within Christchurch and is seen as paramount in developing an efficient and robust transport network.

This raises a number of questions that I would like to open up for discussion at the IPENZ Transportation Group Conference 2013.

- What information is useful to road users?
- How can we gather and share information on the roading network, and measure its effectiveness?
- How do we know if we are performing well?
- What is the link between traveller information and network efficiency?
- What Intelligent Transportation Systems (ITS) and other information technologies are available and how applicable are they to Christchurch?
- What role does social media and crowd sourced information have?
- What does traveller information look like in 10 years time?
- How feasible are private- public partnerships?

CONCLUSION

Following the recent earthquakes and subsequent rebuild in Christchurch a reliable and co-ordinated communication system is paramount to 'keeping Christchurch moving'.

Through the provision of traveller information, road users can make more informed choices around mode, routes and time of travel. This in turn will contribute towards network optimisation and safety. It is vital that all partners involved in the transport network including those agencies who are affecting the network through rebuild and repair of infrastructure, work collaboratively to provide timely and relevant information to road users.

The TfC website is one tool developed to date to deliver more robust communications and take Christchurch into the future. However the TfC responded to an immediate need post earthquake and further developments in traveller information, more rigour around the channels and information to deliver a safe and efficient transport system is required.

The data gained from the IPENZ Transport Group conference discussion group will be used to guide improvements to traveller information systems within Christchurch.

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