Introducing Bus Priority in Christchurch

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Abstract

This technical note covers Christchurch City Council's ambitious plans for bus priority, with 26 km of routes on three corridors to be improved. The first focus will be on the community engagement approach for the overall project. The second focus will be on the role of a controversial trial of bus boarders on a two-lane road on the Queenspark route.

The successful mix of traffic engineering and community engagement used for gaining political and community acceptance for implementing these measures will be presented, and lessons learned for the next seven corridors will be discussed

.Introduction

Christchurch currently has a few isolated bus priority measures on Colombo Street in and near the city centre. The *Christchurch Public Passenger Transport Strategy Update* (Environment Canterbury, 2003) and the *Citywide Public Transport Priority Plan* (Christchurch City Council, 2004) asked for the introduction of priority measures on high passenger demand corridors.

The bus priority work done previously is relatively insignificant in comparison to the 26 km of routes to be implemented across three corridors – Colombo Street south, Papanui & Main North Roads, and the Queenspark corridor.

ViaStrada Ltd was commissioned to develop the scheme for the Queenspark corridor, at 17 km it is the longest of the three corridors. Parts of the corridor are used by several bus routes, and usage varies between 63 and 259 buses per day per direction.

Community Engagement Approach

In the 1990s, a bus priority scheme had already been attempted by Christchurch City Council (CCC) for Riccarton Road, which was rejected largely because of perceived negative effects on local businesses. Therefore, there was a degree of sensitivity about the bus priority projects and a deliberate decision was made to initially avoid this most controversial route (Gillanders & Byrne, 2008a). It was decided that considerable effort should be put into the marketing, consultation and communication of the project. CCC's Marketing, Consultation, Communication and Community Engagement Teams were brought in to work alongside the project's engineers throughout the project phases.

The primary aim was to inform and involve the wider Christchurch community in the development of proposals. Local groups and stakeholders were identified, and key relationships established and developed. (Gillanders & Byrne, 2008b)

The strategic aim was to address and resolve all of the issues with the key stakeholders before the project went to council for a decision. It was important that the councillors were and indeed felt part of the process, and had some ownership whilst remaining comfortable with their positions as councillors. Over 60 seminars and workshops were held and the councillors were encouraged to get involved so that they had first hand experience of the open, sensitive and, in some cases, somewhat volatile consultation.

A comprehensive report (West & Ferguson, 2008) was put together which outlined all marketing, consultation and communications. This was presented to all councillors with a request to reply with any potential deficiencies which they would like rectified. This created total councillor ownership and involvement.

The consultation was regarded as extremely successful, and elected members congratulated the team on their approach (Gillanders & Byrne, 2008b). Two of the corridors were approved unanimously by councillors, whilst the Queenspark route had only one vote 'against'.

Traffic Engineering Approach

Overall project set-up

CCC engaged one consultancy per bus priority corridor. Three project control groups (PCGs) were formed primarily from council staff (technical, marketing, communications, consultation and community engagement), consultants, Environment Canterbury (ECan, the regional council), Land Transport NZ (now the NZTA) and other key stakeholders.

1. *Technical Group* – council and consultant engineers/modellers, ECan, Land Transport NZ & Transit NZ.
2. *Communications Group* – marketing, communications, consultation and ECan.
3. *A key 'end user' group* – bus companies, Road Transport Association, Combined Owner Driver Association, and emergency services.

An important aspect was to have technical meetings involving all three consultants. The aim of this was:

- to achieve consistency across the corridors despite the lack of national bus priority guidelines,
- to enable knowledge transfer in this new field of traffic engineering, and
- to encourage an ongoing peer review of each other's work.

The main problem identified by bus patrons is the unreliability of keeping to schedules.

Queenspark project

Outside of the central city, which was not included in the scope of this project, the Queenspark route passes through six signalised intersections, six roundabouts, and three priority intersections.

Different bus priority measures are now proposed along the route, including bus stop rationalisation (34 bus stops to be replaced by 22), bus lanes (2.7 km), metering signals at a roundabout, and removal of kerbside parking (950 m). Some changes are proposed to the operation of some of the traffic signal controlled intersections along the route. Taxis are not included in the scheme as some of the priority measures at signals rely on early starts (which the signals can only give to buses and cyclists). This issue was discussed with the Taxi Federation and other taxi companies during a number of meetings.

Hills Road bus boarder trial

A bus boarder places a bus stop in a traffic lane (see the photo on the cover page). Prior to the implementation of the overall scheme, Hills Road had been chosen for a trial of two bus boarders in an outbound direction. A kerb extension acts as the area where buses stop. Bus boarders are useful where parking needs to be retained.

Hills Road is a two-lane road classified as a minor arterial and has about 22,000 veh/day. In the evening peak, there is significant congestion from the intersection with Shirley Road and Warrington Street. Traffic queues sometimes extend over 2 km into Fitzgerald Avenue.

There were three reasons for the bus boarder trials:

1. Increase public awareness – very effective and economical marketing,
2. Create an option other than bus priority or do nothing, and
3. Technical assessment of the effects of bus boarders on two lane roads.

First bus boarder trial

The first trial that was implemented in November 2006 had the following main features: a narrow flush median, narrow traffic lanes, and a cycle lane between the traffic lane and the bus boarder itself (see Figure 1).

During the internal approval process, the conceptual design had been rushed and compromised. This 'design by committee' approach involving several departments had resulted in the first trial being ineffective, and the majority of drivers were overtaking a stopped bus. The cycle lane, traffic lane and flush median were wide enough for a car to overtake a stopped bus without having to encroach into the opposing traffic lane. Communication was also insufficient, as drivers had not been given the message as to what to do when the bus stops. The first trial was abandoned after five weeks but it should be noted that similar designs work successfully in other countries with different driving cultures.

Second bus boarder trial

The second trial started in July 2007 and was much more bold in its traffic engineering approach: the traffic lanes in both directions are narrow (3.0 m) and separated by a double yellow no overtaking line, the bus boarder is immediately adjacent to the traffic lane, and the cycle lane was placed behind the bus boarder (see Figure 2). This layout relies on a stopped bus taking up the whole traffic lane, and consequently very few drivers overtook a stopped bus. The combination of a narrow traffic lane and high traffic volumes requires cyclists to accept the 'detour' around the back of the bus boarder and the cycle lane had thus to be designed to a high geometric standard. Cyclists passing the bus boarder and pedestrians walking to and away from the bus boarder will have to negotiate passage through the shared space, which has led to some submissions about perceived problems (no actual crashes or conflicts have been reported). The cyclists now interact with the less frequently passing pedestrians instead of the more frequently passing cars, buses and trucks.

From a traffic engineering perspective, the second bus boarder trial was effective. A bus stopping during congested peak times was not overtaken by other vehicles due to opposing traffic. Hence, the road ahead of the bus cleared out and upon leaving the stop, the bus could travel faster. The traffic queue had effectively been displaced behind the bus. Crash data obtained from the crash database, the police (Erasmus, 2007) and an insurance company show that the trial bus boarder layout has suffered a lower crash rate than the previously untreated road. Pokorný (2007) concludes that “bus boarders in Hills Road should reduce the crash rate experienced at bus stops.”

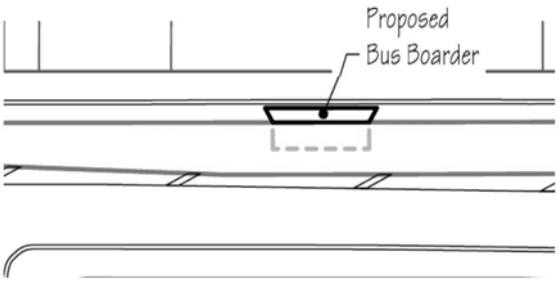

Figure 1: First bus boarder layout

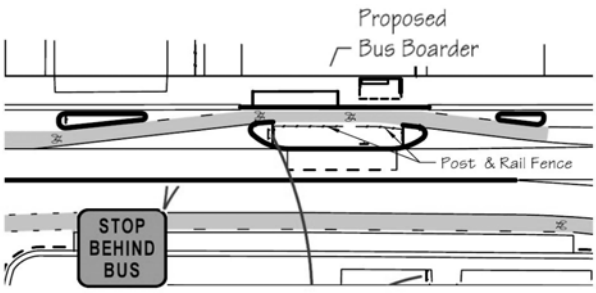

Figure 2: Second bus boarder layout

Community reaction

There was a very strong community reaction to the bus boarder trial. The concept appeared to challenge fundamental beliefs (“Why should I have to stop for a bus?”). All local media channels became involved. Consequently, the communications team had no problem in getting messages about the overall bus priority project out to the community. The media

were readily taking up the information that was provided to them. Over time, this resulted in an increase in the level of understanding and acceptance displayed by the general public and elected members towards the proposed bus priority measures.

Council decision

As part of the overall Queenspark bus priority project, the community was consulted on two options for Hills Road: continue with bus boarders along this section, or implement an afternoon peak bus lane. The overwhelming response was in favour of bus lanes, and even some businesses along this section of road that rely on on-street parking supported the bus lanes instead of the bus boarders. In June 2008, the overall Queenspark scheme plan was approved by councillors for implementation, including bus lanes on Hills Road (and therefore the removal of the two bus boarders). Valuable information was gained as the bus boarders have been suggested as a possible solution on other proposed routes by the public themselves.

Lessons Learned

The technical exchange between council staff and consultants is a normal part such projects, but the exchange amongst the various consultants is an unusual aspect that proved very valuable. The biggest technical challenge stemmed from the purpose of the microsimulation modelling not having been clearly defined at the outset, and significant additional work resulted from making the model fit for purpose.

Gaining the public's and therefore the elected members' understanding and trust was a vitally important success factor. Community engagement was also a core component, with the bus boarder trial integral to raising interest and initiating a discussion.

Enforcement is a key aspect of successful bus priority. With poor levels of compliance the proposed priority measures are likely to be compromised. Working with the future enforcement team during scheme development is thus an important aspect.

Conclusions

There is community buy in and political support for bus priority in Christchurch. The first three corridors are now entering the detailed design phase, and the future for the next seven planned corridors looks promising.

A mix of sound strategy, community engagement, marketing, communications and a strong traffic engineering approach proved to be a winning formula. The bus boarders on Hills Road, whilst ultimately rejected, played a major part in putting bus priority onto everybody's agenda and consequently helped to open the necessary doors required to educate the public.

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1 CCC intends to publish this report on http://www.ccc.govt.nz/BusPriority/