TECHNICAL NOTE

CREATING ACCESSIBLE AND QUALITY BUS STOPS IN AUCKLAND

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ABSTRACT:

Bus stops are important transport facilities, playing a key role in connecting people and places and incorporating many transport products. However, they are often a neglected part of the transport network. To address this, the Auckland Regional Transport Authority (ARTA) recently produced a "Regional Bus Stop Infrastructure Design Guideline" for Auckland.

The guideline outlines current best practice design principles for bus stops and adopts a holistic whole-journey approach. It considers accessibility, safety, customer needs and outlines how well designed bus stops help to achieve efficient and reliable services. Although already practiced by many other countries, some ideas in the guideline will be new to New Zealand.

This Technical Note outlines the rational for the guideline, the methodology adopted for its development, a synopsis of its key recommendations, two case studies on its application to-date and the challenges faced in its implementation now and in the future.

This is the first regional guideline for bus stops in Auckland and in New Zealand. It is supported by NZTA and has the potential for adoption nationwide.

The guideline was published in May 2009 and can be found on ARTA's website

WHY DEVELOP A REGIONAL GUIDELINE FOR BUS STOPS?

The vast majority of current as well as future passenger transport trips in Auckland are or will be by bus. So for the majority of Aucklanders, the first impression of the passenger transport system is at the bus stop. It is therefore important that bus stops are designed well so that they present an attractive 'shop window' to existing as well as potential new bus customers. In addition to the customer, bus stops need to be designed well to meet the requirements and aspirations of several other stakeholders (see Table 1 below).

Table 1 – Stakeholder requirements: the case for adopting good bus stop design

Stakeholders	Requirements from bus stops
People that use buses (or the 'customer')	People of all ages, backgrounds and physical abilities need to feel that it is easy and comfortable to use buses. Specifically they need to: - be able to get to bus stops and board and alight bus vehicles in a safe and convenient manner; - know what types of bus services serve the stop and how frequently; - feel comfortable and safe whilst waiting for a bus to arrive; - be able to see the bus approaching.

Bus drivers / operators	- Need to be able to:
	  - pull into and exit bus stops safely and efficiently.
	  - pull into bus stops at the correct angle so that they can get as close to the kerb as possible to reduce or (ideally) eliminate horizontal kerb-bus step gap.
	  - see waiting passengers for pick-up during the day and night.
	- Require that passengers know when buses will arrive / depart from that stop.
	- Need bus stops to be accessible to match the investment made by the industry in low-floor bus vehicles.

ARTA & Territorial Authorities (TAs)	- Have a duty to ensure equal and inclusive access by all its citizens to the passenger transport (PT) system, including at and to/from bus stops. - Aim to significantly increase the number of Aucklanders using passenger transport. The design and provision of bus stops should contribute towards this goal.
Other motorised road users E.g. car drivers, courier vans	- Need bus stops to be clearly visible to minimise intended / unintended illegal parking. - Need appropriate bus stop approach and exit tapers to be indicated on the road so that they do not park too close to bus stops and risk their vehicle being accidentally hit by bus vehicles as they attempt to pull into / out of a bus stop.
Other non-motorised road users E.g. passing pedestrians, cyclists	- Need bus stops to be designed that they do not block pedestrian paths on footpaths. - Where bus stops are located on roads with shared on-road cycle lanes, cyclists need to be able to pass a stationary bus vehicle safely. - Bus stops may provide opportunity for cycle parking.
Property owners located next to or near a bus stop	- Need bus stops to be well maintained at all times so they do not risk de-valuing property prices or lower the commercial productivity of a retail or commercial unit. - Often need bus stops to be designed so that the bus stop and waiting passengers do not block views of shop windows in the case of commercial / retail units, or in the case of residential property to maintain privacy.

Prior to the production of the guidelines in May 2009, there was no regional guidance on the level or type of provision that should be sought for bus stops in Auckland. The seven Territorial Authorities in the region either followed their own guideline documents where applicable or if none had been developed then some other local procedures. Although many bus stops provide an adequate level of service, the general result on the ground is a lack of consistency in provision both within each of the TA's and between them.

This lack of consistency and often poor bus stop design impacts on the customer's experiences and importantly, does not support the region's aspirations for a high quality passenger transport network as outlined in ARTA's 10-year Passenger Transport Network Plan (PTNP), published in 2006. Poor bus stop design also impacts on the ability of bus operators to run efficient and reliable bus services.

ARTA considered the best way to address the inconsistency and to raise the bar on bus stop quality in general was to develop a set of best practice guidelines that could be applied across the region.

The guideline has also been developed to ensure that bus stops contribute towards a more inclusive and equal society, as well as to better cater for an increasingly older population.

Good bus stop design is therefore an essential component to delivering an accessible land public transport system as envisaged in the NZ Disability Strategy (2001), NZ Transport Strategy (2008) and the Human Rights Inquiry (2005).

Ultimately, the overarching aim of the guideline is to ensure that bus stops in the region contribute towards the PTNP vision for a high quality passenger transport network within Auckland, and to providing Aucklanders with a real passenger transport alternative to the private car.

METHODOLOGY

It should be noted that at present, ARTA does not have direct responsibility of delivering bus stop infrastructure. This is currently being delivered by each of the TAs for their respective areas[1]. In developing the guideline, it was therefore essential for ARTA to work in close partnership with the TAs as well as other key stakeholders, so that all relevant issues were identified and to obtain stakeholder support for the document.

ARTA lead and chair a regional group whose focus is the promotion of bus and bus priority infrastructure measures. The group meets quarterly and comprises of the seven TAs in the region, the main urban bus operators, the Bus and Coach Association (BCA), New Zealand Transport Agency (NZTA), Auckland Airport, as well as representation from the regional transport disability group. The regional group was involved throughout the key stages of the guideline's development and provided an invaluable source of information as well as a good sounding board to test preliminary ideas.

This first stage in developing the guideline involved:

- reviewing the statutory and policy context for a regional bus stop guideline document;
- undertaking site visits to various bus stops within the region;
- undertaking preliminary consultation with identified external key stakeholders (TAs, Bus Operators and aged, disabled and impaired user groups); and,
- completing a best practice review of seven "comparator cities": Ottawa, Vancouver, Perth, Brisbane, Portland, Melbourne, and London. The review focussed on a set of agreed criteria, including: urban and policy context; document format and size; vision, key objectives and/or principles; key recommended measures; and innovation factors.

The stage one findings were summarised in an "Issues and Needs" report, which concluded that the majority of the consulted stakeholders supported the development of a regional bus

[1] It should be noted that Adshel, a private advertising company working with the TAs, is also a major provider of bus stop shelters in the region in return for advertising revenues. However, they focus on major corridors only.

stop infrastructure guideline. Further, that many other cities similar to Auckland have a regional bus stop infrastructure guideline providing a range of best practice measures to take into consideration.

On obtaining stakeholder support, the second stage was to write the guideline itself. This involved taking on board the issues, needs and suggestions provided by many of the key stakeholders during the initial consultation stage, as well as 'cherry picking the best' of worldwide best practices and applying it to the Auckland region context.

Overall, the process took over year with the end result being a set of guidelines outlining best practice design principles for bus stop infrastructure and planning that can be used in a New Zealand context.

KEY RECOMMENDATIONS

The key recommendations in the guideline can be summarised as:

- outlining a minimum (and raised) level of passenger amenity provision at bus stops and providing criteria against which these should be provided. The guideline classifies bus stops into three 'types' – a standard stop, regular stop and a signature stop - as a tool to help determine the appropriate level of bus stop infrastructure. The minimum provision required at all bus stops consists of 12 items (see Table 4.1, page 21 of the guideline);
- recommendations for bus stop lengths that are longer than what has traditionally been provided in Auckland to-date (Auckland has 13.5m long and articulated buses);
- preference to avoid an indented bus bay layout unless justified on compelling safety or operational reasons;
- recommendation to infill existing indented bus bays where possible;
- recommendations to apply bus boarders (or bus build outs) where appropriate;
- the use of tactile ground surface indicators (TGSIs) to aid visually impaired users;
- the use of coloured surface treatment at bus stops in town centres or heavily trafficked areas; and
- the use of raised kerbs or 'special kerb's (e.g. Kassel Kerbs) at bus stops to ease passenger boarding and alighting.

Although already practiced by many other similar cities around the world, some of the above recommendations will be step changes for Auckland.

The guideline also discusses other factors to consider, including: driver training, enforcement, maintenance, linking with cycling and a preferred way of implementing bus stop improvements.

It also includes a checklist which summarises key factors for practitioners to consider when undertaking on-site checks to either review an existing bus stop or to assess where a new bus stop should be located.

PUTTING THE GUIDELINE INTO PRACTICE

The guideline has been very well received by key stakeholders, both within and external to ARTA, particularly by the Bus and Coach Operators and representatives of the aged, impaired and disabled groups.

The regions seven TAs are now using the document as their main reference for bus stop design, although in some instances the document is referred to alongside the TAs own set of guidelines. Below are two examples where aspects of the guideline have been applied.

Case Study 1: Use of coloured surface treatment

Auckland Airport has been very positive in their adoption of coloured surface treatment at bus stops at their International and Domestic forecourt bus stops. The forecourts can be very busy and the use of distinctive green surface treatment assists with the active enforcement of the bus stop area, making it highly visible and identifiable for other road users.

Case Study 2: Use of raised kerbs

Papakura District Council is the first council in New Zealand to adopt the use of raised kerbs (in this case the product was Kassel kerbs) as part of their project to upgrade and improve the town's bus stop at the Railway Station (see Figure 1 below).

This type of kerbing, is higher than traditional kerbing (160mm+ as opposed to 120mm), and specially shaped to enable the bus to draw close to the kerb without damaging the tyre, or allowing the tyre to ride over the kerb. It is widely used across Europe and enables customers to board and alight more easily by enabling step free and gap free access. It also improves operational efficiency by minimising bus stop dwell time.

Other councils in Auckland are now actively looking at where they can adopt this improvement, including Manukau City Council in the Manukau Rail/Bus Interchange project.

It should be noted that currently this type of kerb product is not available from New Zealand or Australia, however, ARTA are working to develop a locally based supplier for raised kerbs (specifically Kassel kerbs).

Raised kerbs at Papakura Rail Station bus stop

Images illustrating how raised kerbs reduce or eliminate the vertical step or horizontal gap when accessing a bus vehicle[2]

Figure 1 – Use of raised kerbs at bus stop

[2] Photo source: http://www.essexgroundworksupplies.co.uk/index.asp?textpage=kassel&mainpage=skerbs.

THE CHALLENGE

In the current economic climate funding is limited, and therefore it is essential to direct and target resources in the most effective and efficient way.

One way of achieving this is to adopt a targeted corridor approach to deliver improvements. This comprehensive approach that has been successfully applied across the world combines bus stop and bus priority improvements, together with timetable, vehicle, marketing and travel demand management on key bus corridors. When applied and implemented together they result in a 'step-change' along the corridor.

This synergistic approach allows the benefits of each new measure to be fully maximised, resulting in improved efficiency and patronage growth.

The challenge in Auckland is large with over 6,000 bus stops. However with the guidelines in place, the Auckland region can now start on this process.

REFERENCES

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