Canberra Blind Society Submission to Canberra Metro Construction Signage and Wayfinding July 2017

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1. Introduction

The Canberra Blind Society (CBS joined other Canberra based blindness and community groups in attending an information session presented by Canberra Metro Construction (CMC) and Transport Canberra (TC).

The information session was to present an overview of wayfinding strategies and principles to be implemented along the Canberra Light Rail network platforms, crossings and surrounding streets. This included static signs, electronic displays, audio information, crossing points and tactile ground surface indicators.

The recommendations presented in this document are based on the power point presentation, provided to CBS by CMC, and the answers provided at the information session by the various representative's to questions put to CMC and TC by the attendees.

CBS welcomes any further opportunity to discuss the wayfinding strategies and principles, architectural plans or any other aspect of the Canberra light rail network with CMC or TC.

2. What is Blindness and Vision Impairment

The Australian Bureau of Statistics 2009 health report showed an estimated 120,400 Australians are blind and 720,300 have a vision impairment that cannot be corrected. Vision Australia expects the number of Australians with a vision impairment will almost double by 2030.

The causes of blindness and low vision are very similar and include; congenital changes, injury or infection of the eyes or brain, strokes and eye conditions such as macular degeneration, glaucoma, diabetic retinopathy and Ushers Syndrome

A person has a vision impairment when they have permanent uncorrectable vision loss affecting their daily life. Vision impairment affects people of all ages and backgrounds, making many aspects of their life difficult to do, such as, problems with recognising faces, reading the newspaper, dialing the telephone or seeing road signs, navigating open spaces and people moving about.

A person is legally blind if they cannot see, with corrective lenses, at six metres what someone with corrected or uncorrected sight can see at sixty metres and/or has a visual field of less than 10° with both eyes; 170° is considered a normal field of vision.

Generally, 90-95% of people who are legally blind have some residual sight and will often use this where they can. Less than 10% of those who are blind have a complete absence of any sight.

3. Access legislation and Standards

Commonwealth and territory legislation, codes of practice and Australian Standards exist that require organisations, businesses and government bodies to meet minimum standards of access and mobility to goods, facilities and services.

Where possible, Canberra Metro should take an active role in creating best practice for access and mobility for all their passengers, regardless of their individual ability..

The Commonwealth *Disability Discrimination ACT 1992* (DDA), requires all organisations, businesses, government departments and authorities, employers and service providers to provide everyone with equitable and dignified access to goods, services and facilities used by the public under the same terms and conditions.

The DDA has enabled a number of standards that must be implemented, these include; *Disability (Access to Premises – Buildings) 2010* (DAPS) and the *Disability Standards for Accessible Public Transport 2002* (DSAT).

The DAPS and DSAT reference a number of Australian/New Zealand standards to provide fair, equitable and independent access for the built environment and public conveyances, particularly the five parts of standards AS1428 Design for Access and Mobility The focus of these five parts are;

a) continuous accessible paths of travel and circulation space for people who use wheelchairs
b) access and facilities for people with ambulatory disabilities: and
c) access for people with sensory disabilities.

4. Our Recommendations

1. **Pathways:** Pathways are of a gradient ≤ 1:20, include a kerb and have the required circulation space..

2. **Tactile Ground Surface Indicators:** comply with parts D3.8 and H2.11 and part 18 of the DSAT and the normative of AS1428.4.1, clause 3.4 and figure 3.3 for the platform and Appendix C for road and track pedestrian crossings.

3. **Light Rail Vehicle doorways:** Provide audible sounds on board and on the platform to indicate the doors of the light rail vehicle have opened at the designated accessible boarding point.

4. **Platform elements:** Key **elements** at the platforms are accessible (ticketing, pass readers, water fountains, seating)

5. **Signage and branding:** Provide signage that complies with parts D3.6, D4 and H2.18 of the DAPS and parts 16 and 17 of the DSAT, clause 8 of AS1428.1 and clause 16 & 17 of AS1428.2.

6. Within any signage, do not use any colours in combination that appear on a ripening tomato (red, green, yellow, orange, pink)

7. **Audio tactile:** Ensure auditory push button pedestrian crossings comply with AS2353:1992 clauses 3.4 and 3.5.

8. **Audio help points:** Information/Emergency help point to comply with part H2.15 of the DAPS, part 21 of DSAT and clause 13.5.3 of AS1428.1 and with circulation space that complies with parts D3.3 and H2.2 of the DAPS, Part 3 of DSAT and clause 6.2 of AS1428.

9. Install Information/Emergency help points that replicate those of ACTION community stations, using tactile labels, aquamarine to denote the information button and a cover for the emergency call button.

4.1 Pathways

CMC proposes to provide shallow pathways with kerbs to all platforms.

Pathways should be a minimum of 1800mm, allowing two wheelchairs to pass each other. This also allows other mobility aids, prams and strollers to move easily with other pedestrians.

Gradients of 1:20 to 1:40 require little effort to use by all passengers and where kerbs are provided of between 150mm to 450mm, cane users are able to run their canes along these (shorelining) to find their way to platform elements.

4.2 Tactile ground surface indicators (TGSIs)

TGSIs are a crucial wayfinding cue for all people who are blind and vision impaired. They are found through the use of any remaining vision due to their colour contrast, felt through foot wear or detected through the familiar white cane.

The text and artists impressions of the platforms state TGSIs will be installed to comply with the DDA and show warning TGSIs along the platform edge, nearest the tracks.

This line has regular breaks of between 900mm to 1200mm where carriage doors are expected to be. This line of warning TGSIs appear to be set back from the edge only 300mm and are 300mm deep. Directional TGSIs are only mentioned as part of controlled pedestrian track and road crossings.

CBS recommends the best practice installation of TGSIs apparently being adopted by the Sydney light rail project, increasing safety by ensuring the blind and vision impaired are safe from light rail vehicles, falls on to the track and can independently locate exits and controlled crossings.

This requires CMC to install warning and directional TGSIs on the platform as outlined by the normative text of clause 3.4 and figure 3.3 of AS1428.1. This includes:

- Continuous and unbroken warning TGSIs the length of the platform, set back 600mm to 900mm from the platform edge and 600mm to 800mm deep.

- Directional TGSIs from the end of the platform to exit points and any controlled crossing points for the roads or tracks.

CBS also recommends:

- directional TGSIs from the platform audio Help points to the designated accessible boarding point as the proposed painted access symbol is not detectable with foot wear or white canes.

- TGSIs have the highest possible contrast, 75% or better, with the colour of the surface it is installed into.

- Avoid using high-visibility yellow on any white concrete surface or the use of stainless steel TGSIs on any surface as they have been shown not to comply with luminance contrast requirements or create strong reflection of light, causing confusion for the sighted and vision impaired alike.

Although no detail for directional TGSIs or crossing points were provided in the powerpoint or during the information session, CBS recommends installing TGSIs at crossing points that follow the detail in Appendix C of AS1428.4.1.

4.3 Light Rail Vehicle doorways

CBS supports the Guide Dogs NSW/ACT recommendation, made during the information session, of an audible tone to sound when the door opens to the light rail vehicle. This tone should be audible both on board and on the platform, lasting the time it takes for them to open.

This tone not only alerts the blind and vision impaired but those distracted by their personal devices of the nearby open door and its general location.

4.4 Platform elements

There was very little detail provided for platform elements such as seating, water fountains and ticketing points.

CBS supports the installation of these elements at the requirements outlined in clauses 27 to 29 of AS1428.2, this includes details such as;

- Ticketing points that are reachable by passengers who are standing or seated
- All passengers are able to use the water fountains with ease, standing, seated and children
- Mobility impaired, the elderly and temporarily injured are able to sit and rise from seating with safety using seats at required heights, back and arm rests.

Additionally, CBS recommends the installation of water points at the foot of water fountains for the health and wellbeing of all types of assistance animals and dog walkers in the area. This would be especially useful at major stops such as Alinga St, Dickson, EPIC and Gungahlin.

4.5 Signage and branding

Signage is a primary form of wayfinding through the built environment. However, style and colour palettes can diminish its usefulness. It was noted that some detail was not included in the presentations and the artist impressions of platforms indicate some elements may not serve their purpose.

CBS recommends signage complies with parts D3.6, D4 and H2.18 of the DAPS and parts 16 and 17 of the DSAT, clause 8 of AS1428.1 and clause 16 & 17 of AS1428.2. This will ensure that signage provides;

- Contrasting matte finishes for text and braille with background colours minimizing reflection of light, promoting readability and making elements easy to find.

- Use of Title case, Sans Serif fonts for both printed and electronic signage, such as Arial, Helvetica, Gotham Book, FF Din, Universe U45, Myriad Pro Roman, Avenir Book and Tiresias Infofont Regular

- Single line Braille is installed at between 1250mm to 1350mm and multiple line Braille is installed between 1200mm to 1600mm from the trafficable surface

- Braille is placed on the left of signage panels, with a half-moon indicator on the panel edge to indicate the beginning of the first line of Braille.

- Use of white on aquamarine and tactile international symbols of access and deafness

It is advisable to avoid using in combination, any colours that appear on a ripening tomato, these are: red, pink, orange, yellow, green or lime green. Avoiding these colours will ensure the 8% of men and almost 1% of women who are colour blind can also use the proposed signage and branding.

QR tags and apps, located on totems and other signage, will be useful to the blind and vision impaired where a tactile marker is provided to locate them with apps already available to them including, the iOS camera and Digit Eyes.

4.6 Audio tactile

The information sessions text and presentation states audio tactile will be installed at controlled crossing points. It is assumed that this will be applied to both road and track crossings at each intersection.

Currently, it is often difficult for the blind and vision impaired to find pedestrian crossing points using audio tactile as the locator signal is often so low it cannot be heard. This low volume is sometimes the result of complaints by nearby residents or businesses or an unreported need for maintenance.

As Canberra's blindness and vision impaired community will encounter the hazards of road and rail traffic, people and city noise at these points, CBS recommends audio tactile is installed and maintained in accordance with AS2353:1992, particularly clauses 3.4 and 3.5 which require the volumes of:

- 71db (the volume of normal conversation), plus or minus 3db for the signal to locate the crossing point.

- An additional 14db, plus or minus 1db for the 115 millisecond initial stage of the audible crossing signal.

Installing and maintaining audio tactile at controlled crossing points enables the blind and vision impaired to maintain their confidence, safety and independence when moving about the city.

4.7 Audio Help points

It would be beneficial to adopt the Help points placed at ACTION community stations, and their accompanying TGSIs, as a large proportion of Canberra's blind and vision impaired community are already familiar with them.

CBS does recommend a number of changes to the presented Help points, these include:

- ensure the controls are mounted at a height of between 900mm to 1100mm from the trafficable area as required by part H2.15 of the DAPS, part 21 of DSAT and clause 13.5.3 of AS1428.1. This allows standing and seated passengers to use the help points with ease.

- circulation space around the Help points that reflect parts D3.3 and H2.2 of the DAPS, Part 3 of DSAT and clause 6.2 of AS1428.2 of 2070mm in the direction of travel by 1540mm wide, allowing a wheelchair and other disability aids to make a 180 degree turn.

- The information and emergency buttons have tactile and braille labels to one side enabling users to select the correct button without touching the button.

- Use blue instead of green for the information button to assist the colour blind in selecting the correct button. (see 4.5 Signage and Branding)

- Consideration of a flip or slide cover for the emergency button to eliminate false emergency calls.

- Directional TGSIs 300mm wide from the Help point to the designated accessible boarding point as the proposed painted access symbol is not detectable with foot wear or white canes.