

Accessible Cities made possible by Accessible Public Transport

Inclusive inter-city train design

Improving transport access in NSW through Active Transport and infrastructure solutions

Accessible streetscapes and accessible public transport for people who are blind or vision impaired

My view - accessible bus travel today

Accessing public transit from a new perspective

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Cover photo credit: Transport NSW
[Photo Caption: End to end journeys will remove barriers for those living with disabilities when accessing the transport network]

Please email the Editor if you would like to showcase your project on the cover of the next Access Insight

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FROM THE PRESIDENT'S DESK



by Lindsay Perry

President of the Association of Consultants in Access Australia

Welcome to our winter edition of Access Insight for 2022. We are focussing on 'Accessible Cities made possible by Accessible Public Transport' which I believe to be a critical element in achieving inclusion for the whole community.

Thank you to all our contributors for the time and effort in preparing your articles. While not all of us are afforded the opportunity to work on transport projects, they are vital in achieving a truly inclusive environment and it is interesting to learn about the multiple facets of this complex niche.

I like to think of ACAA as a supportive community where we can grow both individually and as a profession. We are a small group within the wider construction industry, and it is important that we work together to continue to advocate for the role of access consultants. Only through collaboration and communication can we genuinely work towards a world where all abilities are realised.

In this regard, ACAA has two policies which I would like to draw your attention to. The first one is our **Code of Ethics**. This policy is about our behaviour as access consultants in the public eye. Key points to remember are: to refrain from any conduct or action which may tarnish the image of access consultants or the reputation of ACAA; to refrain from any conduct that is unconscionable; and to conduct business according to best practice, ensuring that information provided to the public is accurate and true.

The other relevant policy is the **ACAA Code of Conduct**. Like any organisation, ACAA members are bound by our Code of Conduct, and the rules outlined in this document. Key rules are: to maintain a high standard of competency; to ensure your professional actions contribute to the accessibility of the built environment; to not act in a malicious or careless manner that may directly or indirectly affect the reputation of other ACAA members; and to continually strive to improve competencies and knowledge. Please ensure you are familiar with both the Code of Ethics and Code of Conduct be mindful of them in the work that you do.

It saddens me to advise members that our proposal to update the aged AS4299- Adaptable Housing Standard has been rejected by Standards Australia due to other groups lobbying for Livable Housing Standards in the NCC in lieu of the Adaptable Housing Standard. I have received concerns from our NSW members as they use this standard on a regular basis, it being referenced in the majority of the Council development control plans and in NSW SEPP Housing 2021 (Part 5 Housing for seniors and people with disabilities).

Given the fact that moving to the Livable Housing Standards in the NCC in lieu of the Adaptable Housing Standards would be a big step backwards in terms of accessibility for people with disabilities, I wish to assure members that ACAA will be lobbying key stakeholders to update the standard.

My intent for ACAA is that we continue to grow both in membership and our public profile. Our key objectives as an organisation are two-fold – to serve as the national professional association for access consultants; and to serve as a national association on built environmental accessibility. This can only be done with the assistance of you, our members. Let's continue to strive for excellence in all that we do so that our key objectives can be realised and our profession taken to new heights.

Enjoy this issue and take care.



Improving transport access in NSW through Active Transport and infrastructure solutions

by **Kiersten Fishburn**

Kiersten Fishburn is the Deputy Secretary, Cities & Active Transport at Transport for NSW. This new Division is focused on ensuring our cities and neighbourhoods are integrated with transport, making our places, streets and open spaces functional, beautiful, inclusive and inviting for all to enjoy. She brings a fresh energy to the role with ambitions to help our cities reach their full potential.

Prior to joining Transport, Kiersten led the Department of Planning, Industry and Environment (DPIE) as Secretary after almost two years as head of the Planning Delivery Unit (PDU). She has held leadership roles with Liverpool City Council City of Sydney, Casula Powerhouse Arts Centre and Accessible Arts.

In 2016 I found myself front and centre at a lot of events. At the time I was Chief Executive of Liverpool City Council, and not a month would go by where I wasn't donning the high vis on site visits on public works projects throughout Liverpool.

Wearing a Liverpool City Council high vis, regardless of position, would guarantee a question from the public about why their bins weren't being picked up in time or why footpaths hadn't been built outside their house. In this role, the community kept me accountable.

What stays in my mind however, were the people I met at every site visit, and the conversations I had with the most vulnerable community members.

Those with limited or no mobility; who saw progress in some places when it came to how they got around, but gaps in others that made their day-to-day extremely hard. It was their anecdotes and their experiences that reminded me that those of us who are in positions of city building and transport delivery must be more thoughtful particularly of the little things.

I've now moved into a role as Deputy Secretary of Cities and Active Transport at Transport for NSW. This division is focused on ensuring our cities and neighbourhoods are integrated with transport, making our places, streets and open spaces functional, beautiful, inclusive, and inviting for all to enjoy.

Transport for NSW is responsible for the development of safe, integrated and efficient transport systems for the people of NSW. And

to do this, we put the customer at the centre of all the planning, strategy, policy we do across all modes of transport.

I feel not only excited but privileged to incorporate my local government experiences to lead a team who are delivering a range of Active Transport programs and infrastructure projects to make a real difference, particularly to our less able community.

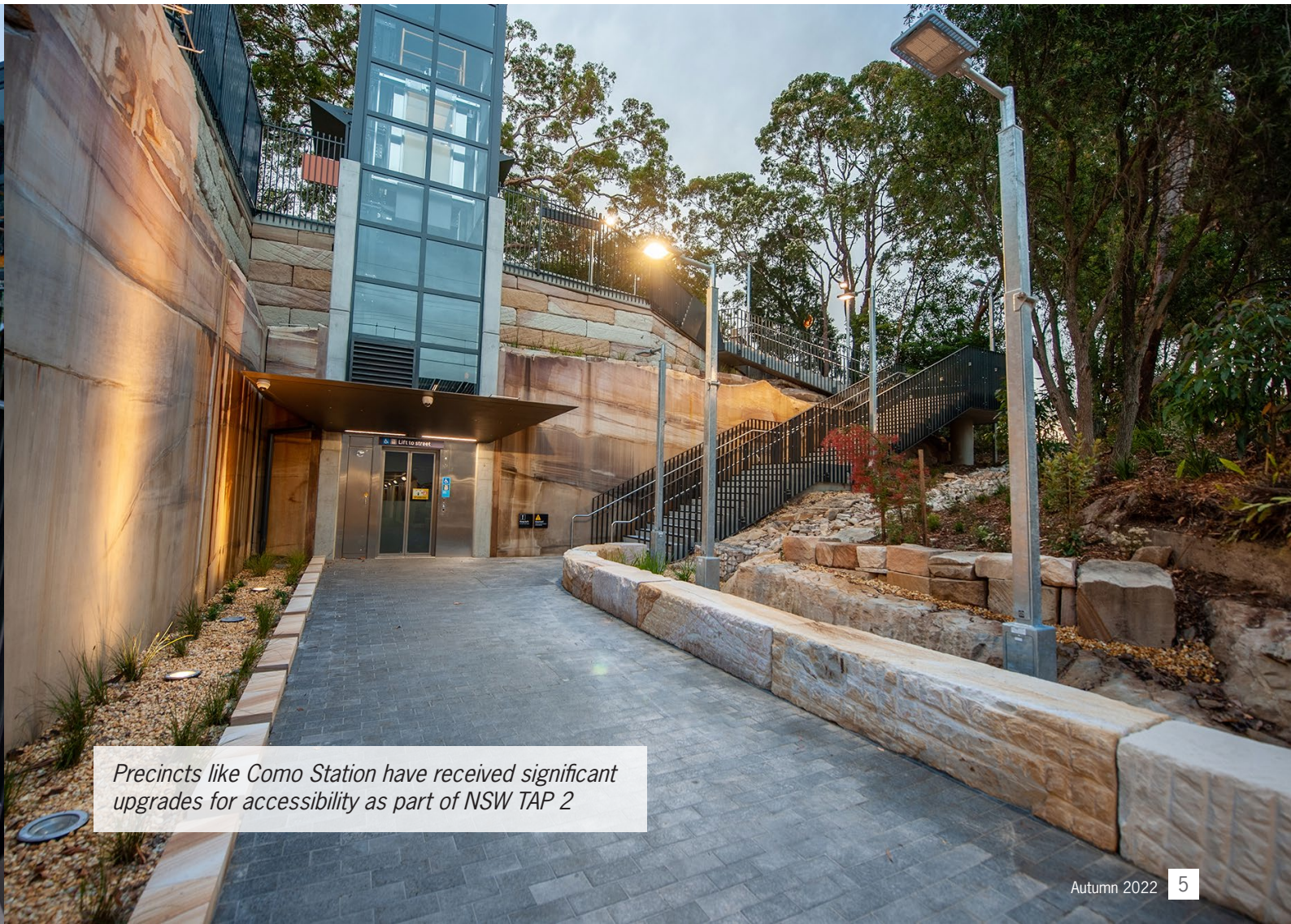
TRANSPORT INFRASTRUCTURE INVESTMENT IN NSW

In NSW we are currently delivering the largest transport infrastructure program Australia has ever seen - \$71.5 billion worth of projects to create a world-class transport system. Our network is massive and we are responsible for safely moving millions of people every day.

\$2.2 billion of this investment has been allocated to more than 500 train station upgrades as part of the NSW Transport Access Program. This has



Precincts like Como Station have received significant upgrades for accessibility as part of NSW TAP 1



Precincts like Como Station have received significant upgrades for accessibility as part of NSW TAP 2

been a real win for the disability community and those with limited mobility as they can use the upgraded facilities to access stations and train services. These upgrades have included the installation of lifts, ramps, accessible car spaces, accessible toilets amongst many others.

It's so important we build this infrastructure, however, as I mentioned above, we need to be more thoughtful of the little things. We need to make sure that along with investing in the transport infrastructure and services, that anyone, regardless of ability, can actually get to it. There is no point in having new, upgraded train stations and new trains, without having the paths that lead to them to encourage active transport connections. And for many people with disabilities, this is where the challenge exists.

END-TO-END JOURNEYS AND PUBLIC TRANSPORT

We need to make it as easy as possible for people to access and use public transport. That's why we are working with customers living with disabilities to remove barriers for them to access

transport services. We call this end-to-end journey management, where we consider a person's transport journey from the moment they leave the house, through to their destination and back again.

In NSW we have a number of programs to help improve end-to-end journeys for everyone, regardless of ability. And with many new technologies currently being introduced to the market, it's really helping us to innovate and provide sustainable, safe solutions for our customers.

MICRO-MOBILITY

In NSW we are encouraging the introduction and safe use of new technologies that can increase inclusiveness and access to transport. Micro-mobility is one area where e-mobility technologies are developing light-weight electric powered devices designed for individual use. This includes devices like e-bikes and e-scooters.

We will be conducting an e-scooter shared-scheme trial where councils will have the option

to run e-scooter trials within their communities from July 2022. They will work with Transport for NSW to create shared regulations that are sensible and safe for users within NSW. I'm excited to see the results of the trials and if it is a technology taken up by people with disabilities and if it helps them with their transport needs.

We are already seeing people taking up e-bikes, which is helping them make end-to-end journeys that they wouldn't have been able to do on a non-powered bicycle, and e-scooters could potentially do the same. We want to make it easy for someone on an e-bike or other devices like mobility scooters, and in the future e-scooters, to ride from their home to access the train, bus or ferry as that connection can be a barrier to someone using public transport or not.

ON-DEMAND SERVICES

In NSW we offer a range of on-demand, flexible transport services, designed to improve connections to transport hubs, shopping centres and hospitals. These services can pick people up from their homes or other easy-to-access locations and take them to where they need to go. They are particularly convenient for people with disabilities or the elderly/less mobile and those without access to a car.

TAXI TRANSPORT SUBSIDY SCHEME

The taxi subsidy transport scheme supports people with severe or permanent disability who are unable to use public transport. These people are able to receive a 50% subsidy on their taxi rides which includes wheelchair accessible taxis. \$42 million has been invested into the scheme, and although it doesn't connect people to public transport, it is worth mentioning as it does provide an end-to-end transport service.

INVESTING IN ACTIVE TRANSPORT INFRASTRUCTURE TO INCREASE ACCESSIBILITY AND CONNECTIVITY IN LOCAL AREAS

These initiatives above have helped improve end-to-journeys and have been welcomed by people with disabilities and the elderly. We are now shifting our focus to improving active transport infrastructure to increase connectivity to



Heidi Haydon of the Physical Disability Council of Australia shares insights at the 2022 Mobility Summit



Kiersten Fishburn and Peter Achterstraat discuss micromobility safety



The taxi subsidy transport scheme supports people with severe or permanent disability who are unable to use public transport



End to end journeys will remove barriers for those living with disabilities when accessing the transport network.

transport services and places. One of our biggest priorities is to complete micro-mobility networks, pedestrian space and interchanges that safely support a wider range of devices. We are doing this through a range of different programs:

GET NSW ACTIVE

The Get NSW Active initiative will have \$110 million worth of local council managed projects in the upcoming financial year 2022-23 across metropolitan and regional NSW. This investment in local infrastructure will vary in size, from active transport improvements in the Cessnock City Centre, to the 54-kilometre shared path link at Wagga Wagga. But every single project has one thing in common – they all aim to improve local connection by providing safe, suitable infrastructure to support people of all ages and abilities.

SETTING THE STANDARD - THE MOVEMENT AND PLACE FRAMEWORK

This framework consists of a range of guides to support Councils and industry who build infrastructure to apply a movement and place approach to every step of a journey. One of these guides, the Cycleway Design Toolbox, provides guidance around five internationally recognised design principles that projects need to meet: safe, connected, direct, attractive and comfortable. It aims to future-proof the network in a way that is inclusive of particularly micro-mobility in all forms.

WALKING SPACE GUIDE

The Walking Space Guide, outlines a set of standards and tools to assist our partners that are developing walking spaces on streets, to make sure enough space is provided to achieve comfortable environments to encourage active transport use. This considers the volume of pedestrian traffic as well as the interactions of pedestrians and users of micro-mobility.

NSW PUBLIC SPACES CHARTER

Sitting alongside these design and planning frameworks is the NSW Public Spaces Charter 8, which has been developed to democratise space for everyone, through the planning,

design, management of public spaces. The ten principles are further explored in the new NSW Guide to Walkable Public Spaces which provides great ideas and case studies to help improve accessibility within our open spaces, streets and public facilities.

While these frameworks are relatively new, they also show a fundamental change in thinking around the design of infrastructure. They prioritise safety and accessibility and are built around a capital works program that will connect cities and towns together throughout NSW while considering end-to-end journeys.

EVALUATING, AND CONTINUING TO IMPROVE AND INNOVATE

It is so important to evaluate our programs and consider feedback from people with disabilities and adjust our services and infrastructure.

We are living in a time of disruptive change, and there is no doubt we need to continue to embrace new transport technologies. And I'm so excited for what the future will bring particularly with micro-mobility and the benefits this can deliver for people with disabilities.

Transport is an enabler no matter what the mode. It is an enabler of all the necessities in life – health, education, employment and all the fun stuff we do too. It is so important we have an equitable, accessible transport system for everyone, regardless of ability.

We are working hard with our partners to achieve this, including the Accessible Transport Advisory Committee. But we need to continue to do much more, and that's something I'm committed to do and look forward to delivering for the people of NSW.

MORE INFORMATION


'Accessibility for all, no exceptions' is a core objective of Transport for NSW's Future Transport Strategy. The Disability Inclusion Action Plan 2018-2022 is part of Transport for NSW's strategy to reach this long term goal.

Visit [Shaping the future | Future Transport \(https://future.transport.nsw.gov.au/\)](https://future.transport.nsw.gov.au/) for more information.


ATTENTION!!

Access Consultants, Architects & Occupational Therapists:


WE NEED YOUR SUPPORT TO UPDATE AS4299 - ADAPTABLE HOUSING STANDARD



Livable Housing Silver



AS4299 - Adaptable Housing



SDA Design Standards NSW SEPP Seniors & people with a disability

NCC 2022 (Draft) has a diluted version of LHA Silver included as Livable Housing Standard. **NSW is unlikely to mandate use of NCC Livable Housing Standard.** AS4299 - Adaptable housing is required by most NSW Councils however **it has not been updated since 1995.**

ACAA asks you for your support to update AS4299 now!
Email president@access.asn.au with your supporting letter.



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Para Mobility specialises in the design, manufacture and distribution of disability equipment. Our key Australian made products include:

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Accessing public transit from a new perspective



by **Julie Sawchuk**

Julie Sawchuk is a best-selling author, accessibility strategist and educator at Sawchuk Accessible Solutions. She is the Chair of the Ontario Standards Development Committee review of the AODA Design of Public Spaces and is on the team developing the accessible residential homes Canadian National Building Code (B652). Julie sits on the Accessibility Advisory Committee for the County of Huron and is Secretary to the Board for Spinal Cord Injury Ontario. At heart, Julie is a storyteller who helps people understand that true accessibility allows people to participate without having to dismantle barriers or change attitudes first. Contact Julie julie@juliesawchuk.ca to speak at your next event or help with the accessibility of a project. You can find her books and courses at www.juliesawchuk.ca

I'm writing from rural southwestern Ontario (Canada), where public transportation does not exist, full stop. If you have to get from town to town (between a 15 and 25-minute drive depending on which direction you go), you need to have a car or hitch a ride—yes, some people still do this. There is a rare taxi that can be found and a “mobility bus,” but both have to be booked well in advance and paid for, and they're not cheap. There is no Uber and definitely no pizza delivery.

With so many layers to accessible public transportation, it's hard to know where to start—but let's address it from the perspective of a person with a disability who is a tourist or new to the city and the transit system. I'll use my most recent trip to Toronto as the “test case.” I lived there more than 20 years ago and the system hasn't changed much, but my ability to access it certainly has.

Before I start my story, I want to recognize that there is a long history of public transit in Toronto, and a lot of people have been involved in making it as accessible as it is right now. I am not writing to disrespect their work or that which is ongoing; I tell stories to help those who are the decision-makers, planners, engineers, financiers and everyday travellers see that accessible public transit is multifaceted and has a long way to go. Because ultimately, transit should be designed to be universal and work for everyone, without the users requiring extensive pre-planning and research. It should never result in segregation.

MY “FIRST” TTC

On the rare occasion that I do get to a city (i.e. Toronto), I relish the opportunity to park my car and use the TTC (Toronto Transit Commission); driving in the city is not fun, and finding accessible parking is even less so.

Way back when I was in my 20s and long before my spinal cord injury, I merrily hopped on and off subways and streetcars, completely oblivious to how accessible they were. Now that life is different, I have a new perspective on how challenging it is to use transit when you can't do stairs, steps and escalators, not

to mention the challenge of access ramps or the gap between the subway train and the platform.

BACK IN THE CITY

My first foray as a wheelchair user on Toronto transit was a bit of a disaster. Being a past resident I thought I knew what I was doing, so off I went with my teenage daughter to stay for a week and attend a training course. We planned to park the car for the week and use transit to get to the college each day. On day one, we travelled by streetcar (at street level) and subway (below ground), arrived at the station closest to the school and got off the train. As we rolled down and back up the platform, we realized the only way up was stairs or an escalator. This forced us back onto the train to the next station, in the hopes that we'd be able to get above ground. It had never occurred to me that I should look for the universal symbol of access on the subway map; after all, this was the modern city of Toronto — surely all stations were accessible? The confusion of rolling around the platform looking for the elevator (that didn't exist) and extra travel time (rolling an extra six city blocks) made us late (and exhausted) for the first day.

FINDING YOUR WAY

The next bit of learning occurred when we realized that not only are some stations not accessible, lots of access points from street level do not have an elevator. Imagine us, standing at the corner of Yonge and Bay trying to figure out which way to cross in order to get down to the train. If (like us or any tourist) you are not paying attention, you would completely miss the fact that at a major downtown intersection with four corners and four TCC signs, only one has the access symbol on it. That meant we had to cross the street above ground, whereas all other pedestrians could make the crossing in the safety of the tunnels below.

The longer our stay, the smarter we got, until we hit Bloor St. Station, with north and south

Mind the gap: It may not seem like much, but the space between the train and the platform can be quite daunting.



Finding your way: Spotting accessible subway access is not always easy.

trains on one level and east and west trains on another. Talk about elevators! But I'll save it for another time, because it's more about finding the elevator than the elevator itself. Changing subway trains meant four different elevator rides and, of course, they are not adjacent to one another. This reinforces the importance of ensuring both excellent wayfinding and customer service.

MIND THE GAP

There are two types of physical gaps to consider with transit: the horizontal gap between the subway train and the platform and the vertical gap between street level and the interior of the car. That horizontal gap is quite terrifying to me. Although it's definitely not large enough to fall through, it is just the right size to get one's front casters stuck, potentially causing a person to tip out of their chair into, or beside, the about-to-be-moving train. Not everyone can do a wheelie to mind the gap and I was thankful for "I've got you, Mom."

Another experience I was particularly excited about was the new 501 Queen streetcars with their sleek design and air conditioning. Only once we were there did I realize I could not roll up the ramp from the sidewalk on my own. TTC tracks are on the street (not depressed into the roadway), which means there is a height difference to overcome. Even with the new "low floor" design, I felt the access ramp slope was not safe or comfortable for me. I'm pretty stubborn, but even I know there are limits to the physics of a wheelchair. Had my daughter not been with me, I would have had to rely on the assistance of a stranger or the driver to push me up and into the streetcar. That may not seem like a big deal to some, but in a world where access is challenging at every turn, the ability to be independent really matters.

I HAVE TO PEE


It would not be an accurate portrait of my travels (anywhere) without a bathroom story.

Interestingly, this one has a positive ending. Once we got to the right floor (two elevator rides later) and found it (following the signs), I was pleasantly surprised to experience an accessible stall that was, for the most part, accessible! Many Ontario public washrooms have some serious catching up to do—most sport a single, angled grab bar too far from the toilet, no seat lid or backrest and almost all lack accessible door-closing hardware. But here, in the bowels of Union Station, complete with marble floors so worn by travellers' feet you can see their paths, I found a stall in the women's washroom. It had been enlarged for turning radius, updated to have an L-bar beside the toilet and even a seat lid to lean against...and it was clean!

ADDRESSING THE GAPS

You'll have noticed that my tales have addressed only my own experiences as a wheelchair user;

that is, after all, my area of expertise. We need to listen to all users to understand how people with vision or hearing loss, cognitive disabilities or mental illness need these systems improved. All aspects of the transit experience have to consider the needs of people living with disabilities, including payment systems, location notifications, turnstiles, seating and emergency response plans, just to name a few more.

Everyone needs to be around the table to help us all move forward. As our cities expand and our transit systems strive to keep up, we need to take heed of the gaps that have been in place for so long and recognize that public transit must be designed with the needs of everyone in mind. Expending extra energy, sacrificing safety and giving up independence should be things of the past, not embedded in the "the way we've always done it." 

In with the new: Although maybe they have been around for a while now, the "new" streetcars are improved, but require that people have assistance to get up the ramp.



Accessible streetscapes and accessible public transport for people who are blind or vision impaired



by Jane Bryce

With thanks to

- Jennifer Moon – Guide Dogs NSW/ACT
- Jaci Armstrong – formerly with Blind Citizens Australia
- Jonathan Craig – Vision 2020
- Angela Jaeschke (General Manager Operations), Jane Britt and Jack Reynolds-Ryan at Blind Citizens Australia

Jane Bryce, Access Consultant, works for Inclusive Places in Sydney. She has a professional background working in and with the vision impairment sector. When not working, Jane's life is ruled by her cat.

Growing technologies and design trends are leading to a literal clash between pedestrians and e-vehicles

Most Access Consultants know the minimum widths, gradients, crossfall requirements for an accessible path of travel. But is that all that needs to be provided or considered?



ACCESSIBLE PATHS OF TRAVEL AND SILENT VEHICLES

One new trend that is concerning for people who are blind is the growing precedence for shared pathways. This might be shared pedestrian and bike paths or shared zones for pedestrians and vehicles. As a fully sighted person with a slight hearing loss, I struggle to hear bicycles.

- How does a person who is blind know of the sometimes-rapid approach of a cyclist?
- How does an older pedestrian who might have both hearing and vision impairment detect the presence of a cyclist?
- How does a person who is blind know of the increasingly rapid approach of a person on an e-scooter or e-bike?

Scooters, especially on footpaths, whether ridden by a child or an adult have the potential to be equally as hazardous as bicycles. There is growth in the availability of electronic versions of both bicycles and scooters. These vehicles have speeds far greater than your average pedestrian.

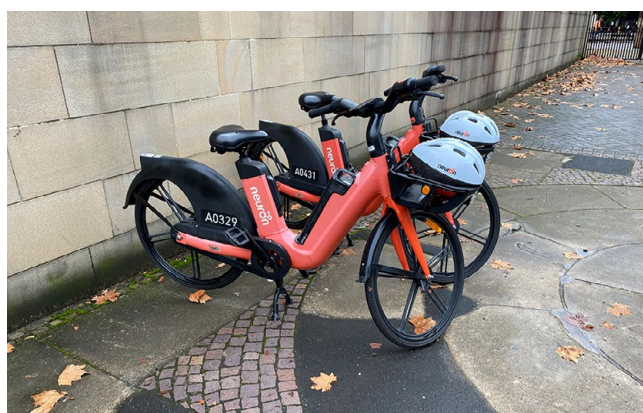
And they have limited noise associated with their use.

Electric vehicles are a growing trend around the world. This includes a wide range from buses, cars, bicycles, and scooters.

- The Gig Economy has seen an increase in e-bikes used by food delivery service workers.
- E-Bicycle hire has been an issue for a few years, especially when these bicycles are left on footpaths.
- E-scooters, e-skateboards and e-bikes on footpaths are an even bigger issue than human powered versions. NSW has recently introduced amendments to the [Public Spaces \(Unattended Property\) Act 2021 \(NSW\)](#) that allows Local Government Authorities to remove items such as e-bikes and e-scooters left inappropriately in public spaces.
- Low profile tires have reduced the noise made by vehicles. I have good vision but with my mild hearing loss, I cannot hear an e-vehicle approaching.



Screenshot from ACT Government website of three people standing with electric scooters
(Source: <https://www.act.gov.au/our-canberra/latest-news/2020/august/e-scooters-are-coming-to-canberra>)



Photos show e-bikes abandoned in Hyde Park
(Supplied by author)

This is even more hazardous when these electronic powered forms of transport are used on footpaths or in shared areas.

Blind Citizens Australia (BCA) has many policies and position papers. Their [submission on electric buses in NSW](#) addresses the wider issue of the silent nature of all electric vehicles and provides international and Australian information as well as the organisation's recommendations for electric vehicles to make noises.

ACCESSIBLE PATHS OF TRAVEL AND SHARED ZONES

Another design trend is the increasing provision of shared zones or areas that allow use of an area by pedestrians and vehicles. Some are for pedestrians and bicycles; some are for pedestrians and vehicles.

Accessible paths of travel in shared zones, or shared pedestrian and vehicle areas, are great when you can use your vision to navigate. Sometimes this is across a wide open area where the pedestrian area and vehicle use zones are at the same level. Other times this might be around the increasing number of outdoor dining areas developed to minimise the spread of Covid. People who are blind or vision impaired often rely on non-visual wayfinding clues such as hard or raised kerbs, building lines and grass or landscape edges of footpaths. Wide open areas full of hard paving usually do not have many wayfinding clues for people who are blind.

Hard kerbs, buildings and footpath edges are often used as shorelines. Maybe the spelling should be sure-lines? But as this type of wayfinding clues is not provided consistently, I use the term shoreline, like the water's edge at the beach, it is variable. I would love to see that shorelines are provided consistently on the same desire lines as those used by people who are sighted.

Hard kerbs, or raised kerbs, provide a physical delineation between the roadway and the footway. They provide a dedicated pedestrian area, much valued by people who are blind or vision impaired.

[Street Appeal](#), a shared zone design trial in Auckland with the local council and Blind Low Vision NZ, found ways to provide dedicated pedestrian zones with a few hard kerb alternatives.

Did you know that the Australian Human Rights Commission has [FAQs](#) and an [Advisory Note](#) about the application of the Disability Discrimination Act and the Premises Standards (Disability (Access to Premises — Buildings) Standards)?

COMBINING SILENT VEHICLES AND SHARED ZONES

Shared pedestrian and vehicle areas typically rely on drivers or cyclist and pedestrians visually identifying each other. How does a person who is blind know if a driver has seen them, is waving them through? With the increasing number of electric vehicles, how does a person who is blind hear the car, bike, or scooter? How does an older pedestrian cope in this type of area?

HOW CAN AN ACCESS CONSULTANT ENCOURAGE CHANGE?

- Know the local, state/territory based and national planning regulations and requirements and what is needed in the area where your project is located.
- Advocate for separation of pedestrian and wheeled modes of transport and physical wayfinding clues like hard or raised kerbs for all users when working on public domain projects.

- Be aware of advocacy campaigns by groups such as Disability Voices Tasmania – Statement on use of Personal Mobility Devices (PMD) on footpaths available on the DVT Facebook page.

ACCESSIBLE PUBLIC TRANSPORT FOR PEOPLE WHO ARE BLIND OR VISION IMPAIRED

Toe bone connected to the foot bone, Foot bone connected to the heel bone, Heel bone connected to the ankle bone

The song “Dem Bones” is a good analogy of the needs of people who are blind or vision impaired who wants to leave their house, to be independent. Everything needs to fit together; each part is essential. Each element that makes up a part of a journey, whether on public transport or not, in a city or elsewhere, needs to be accessible for people who are blind or vision impaired.



For those who are new to the Access Consulting or disability field first let me explain why I use the terms blind or vision impaired as there are two distinct needs.

- People who are blind may have some vision, but they will typically rely on non-visual means to gather information and/or to get out and about. From a simplistic access perspective, they may rely on raised tactile elements such as raised tactile signs, braille, tactile ground surface indicators and audible information as detailed in many parts of the Disability Standards for Accessible Public Transport.
- People who are vision impaired will typically rely on their vision to gather information and/or to get out and about. They may need to use special equipment to see, such as magnifiers. From a simplistic access perspective, they may rely on the visual and luminance contrasting elements and larger fonts as required in the Disability Standards for Accessible Public Transport Part 27.3 that details the font size and visual contrast of printed information.

ACCESSIBLE TRIP PLANNING

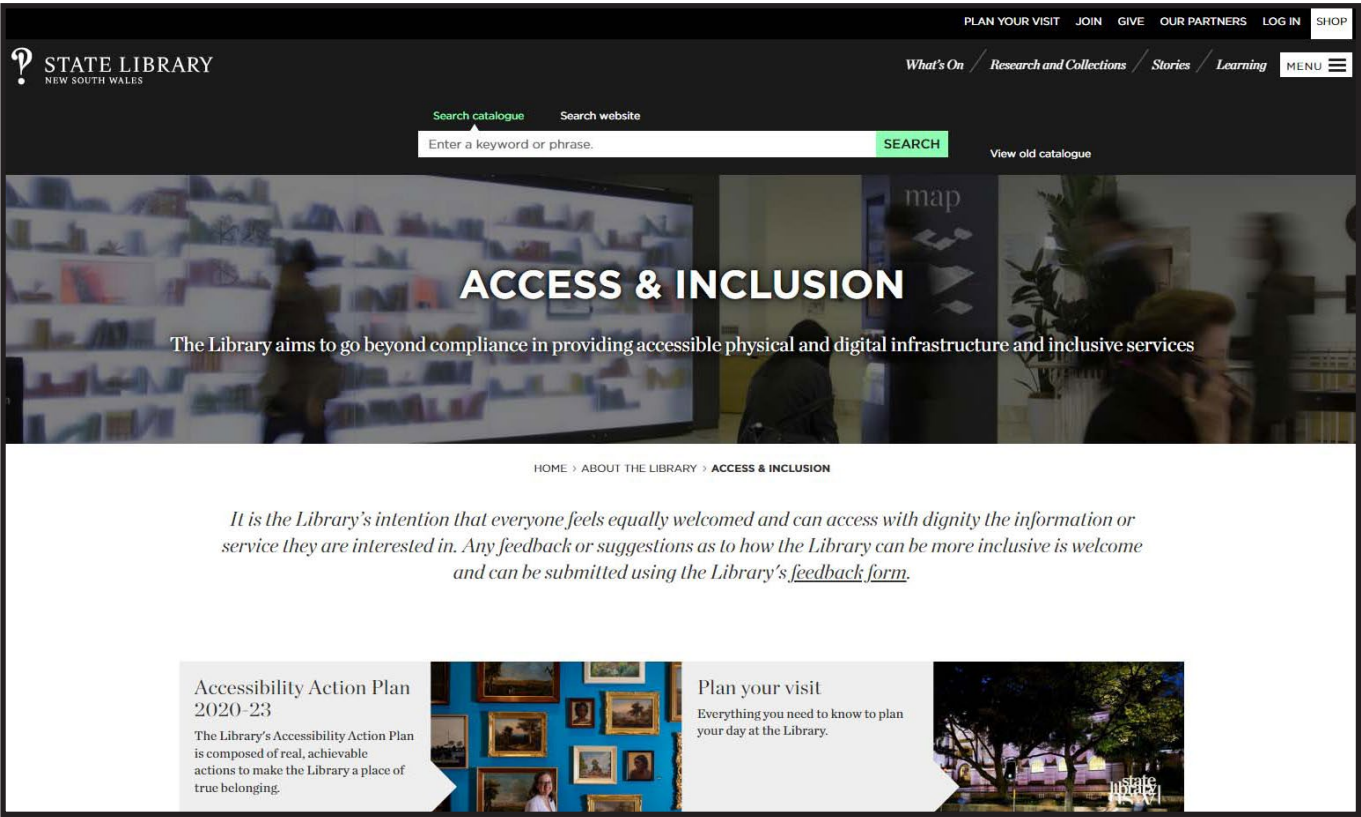
Most people who are blind or vision impaired when travelling to an unknown location will plan their journey, researching to know what mode of transport, where it leaves, where to get off, what time, and how to get to their end destination.

It is important that this type of information be available across the multiple modes of transport the person might need. More importantly this type of information needs to be accessible and easily located, not buried on the web.

How can an access consultant encourage change?

Website

- Ask the client for the project is the related website accessible? Does that website meet [web accessibility standards](#) and to what level?
- What type of information is available to aid a person to plan their journey? Have a look at good examples of websites that help people with disabilities plan their journey such as the [State Library of NSW – screenshot below](#).



Screen shot of State Library of NSW website (<https://www.sl.nsw.gov.au/about-library/access-inclusion>)

Apps

- Ask the client (project) are any related apps accessible? Has this been tested by people with disabilities outside the project's organisation?

ACCESSIBLE PUBLIC TRANSPORT

Did you know that as of December 31, 2022, yes that is the end of this year, all public transport services are to fully comply with the Transport Standards apart from trains and trams conveyances?

The Transport Standards and associated parts of the Building Code of Australia reference AS1428.2. Did you know that this Standard was re-confirmed in 2015?

A recent trip on public transport raised the following observations for people who are blind or vision impaired.

Cons

- Limited information was available on the service's website.
- Limited street level wayfinding clues to find the station entrance.


- A Help Point was not co-located at the ticket gate.
- Help Points throughout the station were not co-located on or near existing accessible paths of travel.

Pros

- Good wayfinding using walls as a shoreline (a physical element that a person who is blind can use as a directional aid).
- Wayfinding directional tactile indicators across open spaces.
- Accessible ticket gate was positioned at the end of the directional tactile indicators.

Photo below shows entrance into a train station (Supplied by author)

How can an access consultant encourage change?

- Look at the whole public transport journey, not just small sections.
- Ensure that public transport infrastructure likely to be used by a person with disabilities is located or connected to an accessible path of travel including elements like help points and bus stops. 



My view - accessible bus travel today



by Francis Lenny
(Accredited Access Consultant)

Francis has been involved in an advisory capacity within the Accessibility and Universal Design area since 1997. He moved to Australia in 2012 and since late 2017 has been providing Access Consultancy on an independent basis.

The motto of my high school was 'in Omnibus Labora,' which has two meanings for both pupils and staff alike:

- Excellence in all;
- or the preferred definition
- We did our homework on the bus!²

Omnibuses, or buses for short, have been around since the second decade of the 20th Century.

Their design has improved substantially over time and certainly since my first experience of using them to travel between home and school.

¹ My memory, 2017.[Webpage] [In omnibus labora in English with contextual examples \(translated.net\)](#) (Accessed 13 May 2022).

² We did our Homework on the Bus.[Webpage] [We did our Homework on the Bus - Home \(inomnibuslabora.co.uk\)](#) (Accessed 13 May 2022).

A number of factors can assist with the delivery of a seamless bus service for all passengers including but not limited to:

- Provision of information and communication between operator staff members and passengers
- Passenger expectations and experience of bus travel
- Design of infrastructure including streetscape and bus stops
- Design of vehicles
- Operational requirements and constraints (revised protocols since Covid)



This discussion focuses on the accessibility of scheduled bus travel and is limited, based on my personal experience of using buses and previous research carried out a number of years ago. Sadly, as with 'parts that move,' it is difficult to provide a one size fits all outcome, as would be a similar experience for many of us reading this article when carrying out an assessment of a new building, as opposed to the often more challenging assessment of an existing building.

For simplicity, I have decided the most straightforward way to present my thoughts, principally from an Australian perspective, is by means of a Strengths, Weaknesses Opportunities and Threats (SWOT) analysis.

STRENGTHS

- A broad legislative process has been in place since the early 2000s
- The pace and implementation of technology has reduced the necessity for *direct assistance* from staff members
- It is apparent that the various state and territory transport operators have all introduced Disability Action Plans which strive for continuous improvement in terms of the provision of transport services, over time. In some cases, this includes audio presentations, providing guidance and information for passenger journeys
- Development of informative websites and mobile phone applications to assist with precise journey planning

WEAKNESSES

- Discrepancies or confusion in terms of application of transport legislation (current

standards versus previous standards when simultaneously trying to apply DSAPT and the Premises Standards) are evident

- The expectation for the level of staff assistance to be provided is difficult to determine as the specific reference within DSAPT is generalist and non-prescriptive
- Design of some boarding points (typically local Council remit) in terms of sloping pavements or absence of a connecting pavement, particularly in rural areas – as per photo example below



- I believe that there is scope for improved collaboration between key stakeholders namely disabled passengers, transport operators and local authorities
- Disjointed and slow provision of information for some passengers who do not use the internet or carry a mobile phone
- On-board vehicle information and communication for those with sensory or cognitive disabilities – potentially phone apps can be upgraded to lessen this gap

OPPORTUNITIES

- Greater use of emojis to communicate information
- Develop person-specific travel guides for those passengers who may not use or have access to the Internet or a mobile phone, tailored to the scheduled bus services they may need to use, upon request
- Consider developing a similar approach to that which has operated in Europe since the late 2000s whereby 'Passengers with Reduced Mobility' are given specified assistance, whether pre-booked or on-demand, subject to reasonable waiting times
- Develop improved audio information services on-board vehicles
- Suggest additional integration and collaboration between local authorities (responsible for Streetscape and Boarding areas) and Transport operators

THREATS

- Reduce or mitigate risk of a potential complaint under the DDA, by further exploring and developing the strengths and opportunities noted above

DISCUSSION

It is a fact of life that unfortunately we live in an imperfect world. Hopefully, over time and as an evolving strategy, equality of opportunity and improved bus services for passengers will occur

It is hoped that:

- information and infrastructure for disabled passengers is constantly updated to enable a more seamless bus journey, where feasible
- the disconnects between different pieces of legislation are addressed to ease confusion in terms of built-environment bus upgrade and new projects
- there can be greater co-ordination between different authorities, to provide more accessible outcomes, rather than different responsible authorities assessing projects 'in isolation.'


SUMMARY

Passengers should continue to be at the centre of the decision-making process and communication is key, including tailored Disability Equality Training for drivers and front-line staff whether communicating with passengers by phone, digitally, or face-to-face.

It is important to note that transport legislation provisions are 'as a minimum.' It is acknowledged that transport operators have exceeded minimum requirements, particularly with opportunities presented through advances with technology.

A review of the 'direct-assistance' for passengers regulations, applicable in Europe for some time and consideration to introduce a similar approach in Australia would be a welcome development.

Many years ago, it was wisely mentioned to me that 'a job begun is a job half-done.'

Whilst there have been many recent improvements to assist with bus travel for passengers with disabilities including design of the built environment and vehicles which are easier to access and more functional to use (including doing your homework since the introduction of Wi-Fi and on-board charging for devices), best practice initiatives and exceeding minimum provisions in terms of bus travel is a job (for all stakeholders) that will never be finished! 



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Inclusive inter-city train design



by **Jen Barling**

Jen is co-founder and Accredited Access Consultant with Funktion, an access and inclusive design consultancy:
www.funktion.com.au

It makes sense for intercity trains to offer enhanced accessibility - trains are a good travel option that can provide a more independent travel experience for more people. Especially as some people may be excluded from using other types of transport due to cost or size and weight restrictions on mobility aids / devices.

Accessibility, inclusive design and human factors principles were key drivers of the design of the new fleet of intercity trains being delivered by Transport for NSW. It was rewarding to be part of a project team willing to innovate through consultation and investigation of equivalent access design solutions.

As a result, the trains will provide an improved level of comfort and convenience for customers who travel between Sydney and connected city centres including the Central Coast and Newcastle, the Blue Mountains, and the South Coast - journey times of up to two hours.

DESIGN ENHANCEMENTS FOR ACCESSIBILITY AND INCLUSION

At the heart of our inclusive design process was the key objective that customers with disability can experience dignity, independence, convenience, safety, comfort and ease of use in their train travel experience.

More circulation space in vestibules and end saloons

Feedback during user engagement from passengers using mobility aids was a preference for a clear area at the allocated space (ie no seats) so they didn't feel 'in the way'. Some participants using mobility aids said they felt guilty, self-conscious and embarrassed asking people to move or felt they were blocking seating for other passengers to use.

Due to the requirement to provide a minimum number of seats on the train, it wasn't possible to remove seats altogether from the allocated wheelchair seating spaces in the end saloons of the train. However in response to the feedback, auto flip up seats were selected to be used in the dedicated wheelchair seating space so that the seat flips back up when not in use, and the space presents as primarily intended for wheelchair users, rather than being hidden under a fold up seat that would usually be left folded down and may be difficult for a mobility aid user to independently push up and out of the way. Use of these seats allows greater circulation space for manoeuvrability especially on a train with spatial constraints and when the end saloon is crowded.

Low back longitudinal seats in the end saloons allow greater visibility for passengers entering the train to see if allocated wheelchair seating spaces are available (direct line of sight, not blocked by high back seats). Low back longitudinal seats also allow for greater visibility for passengers on the train by providing an unobstructed view out the window of the station platform and external scenery.



A centre grab pole is traditionally placed in the centre of the entry vestibule of many trains to offer stability to people standing in this area. However, in an already confined space, it becomes another obstacle for wheelchair / scooter users getting on and off the train. Manoeuvring in this space to align with the boarding ramp or move into the allocated wheelchair seating space can be difficult when the space is unoccupied, let alone when there are other passengers in the entry vestibule. To enhance accessibility, the traditional centre grab pole was removed and additional hand holds for stability added around the perimeter of the vestibule. The enhanced circulation space increases independent access for passengers and reduces the need to ask for assistance. This design also benefits mobility scooter users who may be more likely to take their scooter with them on a train (mobility scooters are not included in Disability Standards for Accessible Public Transport (DSAPT) requirements).



Dedicated space is provided for two wheelchair users to sit in the same area, to accommodate passengers using mobility devices wishing to travel with a companion who may also be using a mobility device – a consideration that is described in DSAPT guideline 9.1 (1).

Enhancements to allocated seating and access to information

Priority seating for people with an ambulant disability or vision impairment includes space for a guide dog to comfortably sit or lie down which is important for longer trips. Accessible help points with Braille and tactile instructions are located next to every allocated wheelchair seating space and in every entry vestibule. The help point is not just intended for emergency situations, passengers can also use it to communicate with the guard - for example to confirm that the boarding / alighting ramp is ready as they approach their stop. This goes hand in hand with a commitment to customer service and staff training to ensure that all customers can travel with dignity and independence.

Access to information includes internal and external electronic information screens, digital voice announcements of upcoming stops and doors closing and hearing loops throughout the carriages. Braille and tactile is included on more signs, including “quiet car” identification, emergency door release instructions and bathroom fixture labels. Pictograms and presentation of information was adjusted and clarified based on feedback from people with intellectual disability.

Improved Safety, Comfort and Convenience

There is an accessible bathroom on every train, located adjacent to accessible seating areas. Ambulant toilets are included on longer trains. Luggage storage racks are bigger and are provided in accessible locations in end saloons.

The stairs leading to the upper and lower seating areas are less steep and wider, improving comfort and safety for passengers traversing stairs on a moving train. Luminance contrast is incorporated into handrails, doors and to denote different areas such as the walkway area next to seating. Use of different seat fabrics and colours communicates the different purpose of the seat or area, eg priority seating, flip up seats or quiet car.

UNIVERSAL DESIGN CONSIDERATIONS AND INTELLIGENT COMPLIANCE

The Disability Standards for Accessible Public Transport (DSAPT) specify the minimum requirements for public transport. Operators and providers are free to innovate and exceed the Disability Standards in their services, premises, infrastructure and conveyances. Operators and providers are also encouraged to adopt new technologies that give improved access to public transport (DSAPT Guideline 1.11).

Many public transport authorities including Transport for NSW are adopting the guiding principle that accessibility can be achieved through the adoption of universal design principles that remove physical barriers to access and create conveyances that are usable by people of all abilities. ‘Intelligent compliance’ means compliance which prioritises customer-focused outcomes over a narrow focus on legal compliance with accessibility standards. As well as being compliant, infrastructure should be practical, usable, fit for purpose and convenient. Encouraging industry partners to think critically about the application of standards and find common sense solutions to compliance matters will result in better outcomes for people with disability.

The Disability Standards for Accessible Public Transport encourage this approach:

“DSAPT 33.3 Equivalent access

(1) Compliance with these Standards (the DSAPT) may be achieved by:

- (a) applying relevant specifications in these Standards before the target dates; or
- (b) using methods, equipment and facilities that provide alternative means of access to the public transport service concerned (but not using separate or parallel services) with equivalence of amenity, availability, comfort, convenience, dignity, price and safety.

(2) This may include direct assistance over and above that required simply to overcome discrimination”.

‘Equivalent access’ refers to alternative methods of assisting passengers with disabilities to use public transport where there are unavoidable constraints



on unassisted access. (DSAPT Guidelines 33.6 (1) Meaning of equivalent access). The Disability Standards are intended to remove discrimination from public transport services. They do not impose particular technical solutions where other methods are equally effective and appropriate (DSAPT Guidelines 33.7 (2) Methods of providing equivalent access).

“DSAPT 33.4 Consultation about proposals for equivalent access

The operator or provider of a public transport service must consult with passengers with disabilities who use the service, or with organisations representing people with disabilities, about any proposal for equivalent access”.

CONSULTATION

Customer satisfaction is a key performance indicator in Transport for NSW's Disability Inclusion Action Plan. Transport for NSW aims to ensure that people with disability are able to participate in

community-wide customer feedback processes. So, as part of the detailed design process, a range of customers were consulted, as well as the Accessible Transport Advisory Committee, which is a committee made up of representatives from peak organisations representing people with disability or older people, who provide expert guidance on access and inclusion to Transport for NSW. A life-size model of part of the train was used to help customers experience what the new trains would be like and to test different scenarios. Using their feedback the design was refined and tested again.

Where design elements proposed the provision of equivalent access under Parts 33.3 and 33.4 of the DSAPT, consultation about these proposals was undertaken with passengers with disabilities who use the service, and with organisations representing people with disabilities.

For example, the interior design of the bathroom was constrained by the carriage width, required weight distribution in the carriage and allowance for provision of an accessible path of travel to the bathroom that complied with DSAPT requirements. Based on customer testing in the life sized model

of the accessible bathroom and feedback given during consultation sessions, the layout was progressed and iterated to optimise accessibility, safety and usability for passengers, integrating human factors principles throughout detailed design phases.

Customers who participated in the consultation said they had a positive experience contributing to the design process. One participant from the Council for Intellectual Disability said:

"It has been interesting [being part of the consultations]. It is nice to be part of something where we have accomplished something and been part of the process from the beginning. Disability needs are different. Often the needs of people with intellectual disability get forgotten. But we worked together with disability advocates from different organisations and found common ground. We like to listen and learn about the needs of other disabilities; it helps us think about things from another person's point of view".

This short video, produced by Transport for NSW, shows the consultation process in action and the value it has contributed to the end product. [A](#)



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TECHNICAL INSIGHTS

The articles featured in *Technical Insights* are to prompt thought and discussion to assist our members' questions and evaluate their understanding of the technical requirements of Australian Standards and other national/international source material. *Technical Insights* is intended to provide background information, a different viewpoint, a perspective from an individual with lived experience of disability or to prompt further discussion and/or research by you as an access professional.

Handrails – What is a suitable height?



by **Howard Moutrie**

Following my last *Technical Insight* on handrail profiles, I thought it would be appropriate to consider the height of handrails. The NCC/BCA Clause D2.17 requires the minimum height of a handrail to be 865mm, but it gives no maximum height. The maximum height is provided in AS 1428.1 and is set at 1m. I can clearly recall, as a young lad on Standards ME64 Committee, that there was significant discussion regarding the height and was eventually set at 1m so that a handrail could also function as a balustrade. There was also the view that this was too high.

A good place to start would be to review what some other countries and standards require. The first place to start is the ISO Standard; it essentially mirrors the Australian Standards

requiring a range from 850mm to 1000mm. That's where the similarity ends, as other countries indicate significant variations, with some having different heights for ramps than for stairs, which makes some sense. Both the UK and New Zealand require 900mm to 1000mm, though New Zealand reduces the height range to 840mm to 900mm on ramps. The United States requires the range of 865mm to 965mm (my metrification) and Canada 860mm to 920mm. Singapore, like New Zealand has different heights for stairs and ramps, being 800mm to 1000mm and 800mm to 900mm respectively. Interestingly, AS1657, which provides the requirements for stairs, ladders and platforms in a more workplace situation, typically areas not required to be accessible and often where a fall from height is possible, requires the handrail height to be 900mm to 1100mm.

Given the wide variation in the Standards it is worth looking at other references. Selwyn Goldsmith, in *Designing for the Disabled*, identifies that differing heights are preferred, depending on whether ascending or descending the stair. A lower height is preferred when descending and a higher height when ascending. As it is unlikely, in most circumstances, that a stair would be identified strictly as ascending or descending, he suggests a reasonable compromise for stairs is 850mm. Interestingly, he recommends increasing to 1000mm on ramps so that a person can rest their elbow on the handrail. This is contrary to the 2 Standards which have a differing requirements for stairs and ramps both of which reduce the handrail height for ramps.

Templar, in his book *The Staircase*, also notes that the optimum handrail height depends on whether ascending or descending the stair and also the purpose of the handrail – as a guide during normal use or as an aid, on which to grab, when falling. Templar cites a number of bodies of research.

He cites research by Kvarnstrom, who found that the highest rail in the test, 900mm, was the best to grasp when falling. He also cites Chaffin et al who tested comfort and found that 850mm to be the most comfortable when descending and 840mm when ascending. Maki and Fernie also undertook tests to determine a comfortable height and concluded the optimum range for comfort was 900mm to 965mm for younger people and 900mm to 1000mm for older people, with the mean being 927mm. The tests by Maki & Fernie did not consider the best height when falling.

As can be seen, there is considerable variance between the test results. If the primary function of the handrail is to prevent a fall, and as most serious falls occur when descending, it is prudent to give weight to the preferred height when descending. On this basis, a higher handrail is better, however, many people, particularly the elderly or those with an ambulant disability use the handrail as a guide or to assist with stability.

Research by Nagamachi et al in Japan found that reliance on the handrail increased with a person's age. Their research determined the optimal handrail height was 670mm to 780mm. This is much lower than any of the Standards require,

and there is a good reason. The outcomes have to be considered in the context of the participants - being elderly Japanese females who would be typically smaller than people within the Australian context and even a point they acknowledged with respect to modern Japanese people.

So, where does that leave us? The research would suggest that the handrail height may be not all that critical for everyday use. Interestingly though, in the Courts, a shortfall of 1mm can be deemed to be contributing to a person's fall. On this basis, it would be prudent to keep to within our Standard's height range.

While on the subject of handrail height, I will once again clarify the intent of Clause 12(e) of AS1428.1, which refers to the handrail being at a consistent height above the stair, ramp or landing. As the handrail can be at a height of 865mm to 1000mm, this clause was inserted to prevent the handrail being, for example, 865mm at one end and 1000mm at the other end. It wasn't the intention to prevent a handrail transitioning over a landing. The 2021 version of AS1428.1 has sought to correct this misunderstanding by specifically saying that the height of a handrail can vary across a landing where the handrail is transitioning across a landing to another flight, to a balustrade or as part of the handrail extension. The 2021 Standard also acknowledges that the BCA permits the height of the stair risers to vary and thus provides a 10mm tolerance in its height. ▲

REVIEW



**Reviewed by
Cathryn Grant**

Cathryn is a registered Occupational Therapist and ACAA Accredited Access Consultant. Cathryn has completed a Masters in Public Health, specialising in health and the built environment. This involved researching and writing a thesis on universal design and consultation with users. She works as a Senior Access Consultant at Architecture & Access.

G3ICT'S SMART CITIES FOR ALL TOOLKIT: <https://smartcities4all.org/english-toolkit>

Smart cities for all is a global initiative to eliminate the digital divide for people with disabilities and older people. Lindsay Perry (our ACCA President) is the Australian representative. They have written a range of resources to support and promote the needs people with a disability in the development of services and information technology. In today's ever-changing, technology driven world, the inability to access the internet, a smart phone or computer can limit the ability to participate in society including, living independently, accessing transport, e-Government, education, voting and elections, emergency response and financial services.


The [website has a range of guides and documents](#) that outline how cities can improve access to information communication technology

(ICT). The first strategy they recommend the implementation of the ICT Accessibility Standards. The first of the three that they discuss is ETSI EN 301 549. It covers the accessibility needs of a range of disabilities or impairments that users might experience. They report that it is particularly useful in outlining the accessibility parameters a technology service or product should achieve if it is being considered for purchase by a city. It is noted that Australia has adopted this Standard as a National Standard. The second is Section 508 of the U.S. Rehabilitation Act. This is reported as slightly different to the above EN 301 549 but developers complying with one of these documents should meet the requirements of the other also. The final standard mentioned is the World Wide Web Consortium's Web content Accessibility Guidelines (WCAG) 2.0, which has been endorsed by ISO as

ISO/IEC 40500:2012. The guidelines provide a range of recommendations to make the web and applications more accessible to a wide range of people with disabilities.

The second strategy recommended is for cities to develop a procurement policy that ensures all ICT purchases are accessible for people with a disability. This strategy recognises cities have purchasing power and can lead change. *Smart cities for all* recommend that the above standards are used to assess all potential ICT products and services. A seven-step process is outlined on how to raise awareness, review existing policy and ICT, and adopt, implement and review procurement guidelines that support access to ICT for a wider range of users.

The third strategy is to raise awareness about digital accessibility and the fourth is the development of a database that outlines a range of examples of accessible ICT solutions and products. Some examples include; a communication system for use in an emergency that communicates to a closed circle of family/friends or can communicate to a whole community in the case of a natural disaster and a secure electronic voting system for people with a disability to use if they have difficulty voting in person. Their aim is to collect over 1000 of these examples that can be shared across the world.

This is an informative website and provides a range of resources and recommendations to assist those working in policy development and procurement of ICT. It places the accessibility of people with a disability and older persons at the forefront of ICT development and aims to not leave people behind. 

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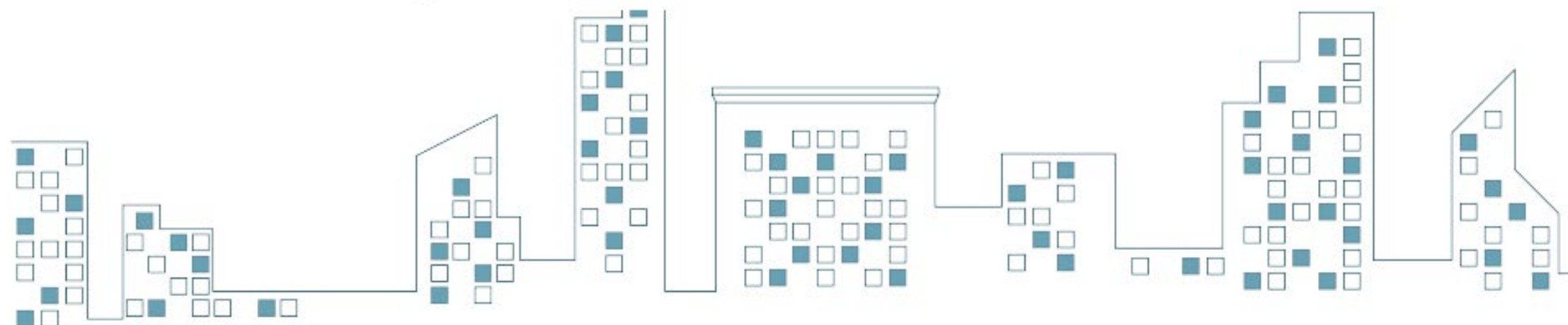
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