

# **Guide Dogs.**

## **The impact of raised crossings and continuous footpaths for people with low vision and blindness**

This report was commissioned by the City of Sydney and includes insights from interviews and a focus group in November 2024 provided by people with lived experience of low vision or blindness.

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# Executive Summary

This report highlights the need to improve the design of raised crossings and continuous footpaths to ensure they are accessible for people with low vision and blindness. The findings and insights are from a focus group and interviews conducted by Guide Dogs NSW/ACT in November 2024, commissioned by the Council of City of Sydney (City of Sydney).

## Key Findings

- **Safety risks.** People with low vision and blindness rely on environmental cues to navigate safely. Poorly designed crossings in the City of Sydney cause confusion and increase the risk of accidents and injuries.
- **Loss of independence.** Poorly designed crossings reduce confidence and independence, forcing people who are blind or have low vision to choose between staying safe or going out. Many avoid navigating the city because they do not feel safe.
- **Difficulty locating crossings.** Raised crossings are hard to identify due to the lack of traditional cues like kerbs and ramps. Inconsistent use of tactile ground surface indicators (TGSIs) further complicates navigation. Current research as well as the Focus Group findings, indicate that TGSIs alone are not sufficient to alert a person who is blind or has low vision that they have entered a carriageway.
- **Increased cognitive load.** Navigating these crossings requires significant concentration, leading to cognitive fatigue. This reduces confidence and independence, making people less likely to engage with their community.
- **Challenges with continuous footpaths:** Continuous footpaths often blend seamlessly into the road, making it hard to distinguish between a safe footpath and a hazardous road. This design increases the risk of veering into traffic.
- **Psychological impact.** The stress and uncertainty of navigating these crossings increase anxiety and mental fatigue, affecting well-being and discouraging people from using public spaces.
- **Avoidance behaviours.** Due to the stress and uncertainty of new urban design, many people who are blind or have low vision now avoid areas within the City of Sydney, impacting their health, social lives, and independence.

## Recommendations

Based on the findings, the following recommendations are suggested to improve safety and accessibility:

1. **Review current designs.** Evaluate the current raised crossings and continuous footpaths to identify areas that do not support safe and independent crossings.
2. **Consider alternative designs.** Explore and implement alternative design options that are inclusive and accessible.
3. **Enhance environmental cues.** Improve existing and planned crossings with consistent cues through co-design and research to improve safety and navigation.
4. **Ongoing consultation and training.** Regularly consult with people with lived experience and provide training for design teams to understand the challenges faced by this population.

This report provides evidence that current designs are not adequate for people who are blind or have low vision and highlights the need for changes to promote safety, independence, and inclusion. By addressing these challenges, we can ensure that everyone can participate fully in community life.

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# Introduction

## About Guide Dogs NSW / ACT

At Guide Dogs NSW/ACT, our vision is to create a world that is inclusive and accessible for everyone with low vision or blindness. We believe that advocacy and education are essential to breaking down barriers and creating a welcoming society. We use our voice to educate the community and uphold the rights of people with low vision or blindness.

For more than 65 years, Guide Dogs NSW/ACT has supported people with low vision or blindness to get around their communities safely and independently. We are proud to be the leading provider of Guide Dogs and Orientation and Mobility services in NSW and the ACT. We offer personalised support, equipment and training to empower people with low vision or blindness to live life their way. We collaborate closely with individuals, businesses and government organisations and take part in panels and committees like the Australian Standards and the NSW Government Accessible Transport Advisory Committee (ATAC) to help shape policies that promote inclusivity.

There are currently over 500,000 Australians living with low vision or blindness. Despite this significant portion of the population, many public spaces and facilities are still not designed to support full inclusion and participation for people with low vision or blindness. As the population ages, the number of people living with low vision or blindness will substantially increase.

Guide Dogs NSW/ACT delivers programs to assist Clients their families and caregivers, to increase their skills, confidence and access to support and accessibility tools, giving them more choice around how they go about their day-to-day lives and move around their communities. Access to public facilities and services is crucial to fully participating in the community, which is why we are committed to reducing access barriers, to ensure independence, dignity and inclusion for everyone.

## Purpose of the focus group

The City of Sydney regularly delivers Continuous Footpath Treatments (CFTs) and raised pedestrian crossings (see section on *Key Terms*) across the LGA as they have been historically considered best practice in improving the walkability of an area by slowing people driving and reinforcing priority for people walking.

Between July 2023 and June 2026, the City of Sydney had around 30 CFTs and 12 raised crossings scheduled in the capital works program.

However, during the 2024 consultation for their Walking Strategy and Action Plan, they received several submissions and a representation at Committees raising concerns about how some types of raised crossings that the City implements are less accessible to some people with low vision or blindness, because they make it difficult to determine the interface between a footpath and a carriageway (despite the use of tactile ground surface indicators).

In response, the City of Sydney committed to reviewing the accessibility of these crossing types. A key part of this project was to conduct a focus group with people with lived experience to establish the extent and severity of the impact of CFTs / raised crossings on the blind community.

Guide Dogs NSW / ACT were approached by City of Sydney to quote on delivering this focus group in September 2024 and were successful.

## **Veering and orientation challenges.**

Without clear environmental cues, many people with low vision or blindness find it challenging to remain orientated. Walking in a straight line without visual assistance is difficult, and unintentional veering into the road is an alarming reality. Research supports these observations. Studies show that the absence of tactile and auditory cues cause disorientation and increased anxiety, making it harder to plan routes and move confidently through the city. This evidence highlights the importance of clear environmental cues to ensure safety and efficiency of those with low vision or blindness. The design of raised crossings and continuous footpaths do not provide clear environmental cues to support people with low vision or blindness with straight line travel or to assist with maintaining orientation.

## **Guide Dog training overview**

There are identifiable cues that Guide Dogs can be trained to locate through positive reinforcement, frequent repetition, and exposure, and what can be felt underfoot by people with low vision or blindness.

It is essential to have clearly identifiable cues at road edges, such as kerb ramps that both the Handler and Guide Dog can identify with a high degree of confidence, due to the extreme risk of injury and collision with high-speed vehicles if they are missed.

The inconsistent placement and variation designs of Tactile Ground Surface Indicators (TGSIs) in the outdoor environment makes them unsuitable as cues to train our Guide Dogs to indicate as a road edge. TGSIs on level crossings and continuous footpaths can be difficult to feel underfoot, people with longer strides may miss the presence of TGSIs, the footpath and road surface may either be in poor condition or littered with debris or foliage, or the TGSIs can wear meaning that determining the difference between footpath and road becomes very challenging.

Typically, roads that people with low vision or blindness encounter are defined by a kerb ramp or a formed gutter or in rural areas, grass next to bitumen.

## **Prevalence of Long Cane Users and Guide Dog Handlers**

It should also be noted that most people who are blind or have low vision use a long cane rather than a Guide Dog. As the leading provider of specialist orientation and mobility services, supports and training across NSW & ACT, the majority of Guide Dogs' Clients use a white cane as their primary mobility aid. Even Guide Dog Handlers continue to use their long cane in certain circumstances and have usually undergone long cane tuition prior to receiving and working with their Guide Dog.

## **Response to literature review**

The literature review and Guide Dogs NSW/ACT response to the literature review can be requested via email: [socialchange@guidedogs.com.au](mailto:socialchange@guidedogs.com.au)

## **Key Points**

### **1. Tactile Ground Surface Indicators (TGSIs)**

- **Previous Assumptions:** TGSIs were thought to be sufficient for indicating transitions from footpaths to roads.
- **Current Findings:** Recent research shows that TGSIs alone are not adequate, especially in busy environments, as they increase cognitive load for people with low vision.

## 2. International practices

**UK:** Research findings are indicating that people who are blind or have low vision in England are experiencing the same concerns with continuous footpaths as here in Australia.

## 3. Specific documents reviewed

- **Victoria Walks - Road Safety Audit Tool:** Highlights the inadequacy of TGSIs alone in dynamic environments.
- **Seeing Streets Differently (RNIB, 2021):** Emphasises the need for more effective tactile indicators in England.
- **Inclusive Mobility (DfT, 2021, UK):** Discusses the use of various tactile indicators in the UK.
- **NACTO Presentation (2012):** Notes the recommendation to use TGSIs but does not address issues for blind people.
- **US Federal Rules and Regulations (2023):** Does not address the insufficiency of TGSIs alone.
- **Guidebook for Crossing Solutions (2016):** Recognises the issue but suggests detectable warnings (TGSIs) can address it. Current research suggests otherwise
- **Accessible Sidewalks and Street Crossings (NACTO):** Recommends using detectable warnings with other environmental cues such as, contrasting surface materials, and barrier posts.
- **TfNSW and Guide Dogs Tactile Strategy for Sydney Metro (2021):** Developed to promote a more effective TGSi installation in Metro Train stations.
- **Pathways to Inclusion (2021):** Advises using TGSIs for raised crossings but notes recent feedback indicating their insufficiency in busy environments.

The literature review highlights the need for more effective tactile indicators beyond TGSIs, especially in busy and dynamic environments. Continuous footpaths and raised crossings present significant challenges for people with low vision or blindness, necessitating updated practices and guidelines to enhance accessibility and safety.



## Best practices: National and International perspectives

Guide Dogs Australia conducted research (EY Sweeney) in 2023. Part of a longitudinal study, with previous research conducted in 2010 and 2015.

A critical challenge affecting the safe and independent mobility of people with low vision or blindness when accessing their communities related to **shared roads/zones** and **flush finish road crossings**. Alarming, 80% of all respondents lacked confidence in crossing roads when the footpath and road were at the same level.

The research highlighted that the urban design trend of removing kerb ramps is being proliferated across all Australia, creating safety issues for people who are blind or have low vision. Unfortunately, these new alternative designs are not incorporating the needs of people who have impaired vision.

Accessibility challenges for people with low vision and blindness are not unique to Sydney. International studies, such as the RNIB's ["Seeing Streets Differently" report \(2021\)](#) and the [University of Leeds report \(2014\)](#), highlight similar issues in the UK. These reports emphasize the need for inclusive street design to ensure safety and independence for all pedestrians.

These concerns are further supported by an international report, **Key Principles of Inclusive Street Design** developed by the Royal National Institute for the Blind (RNIB, UK) with support from the following organisations:

- Guide Dogs
- Thomas Pocklington Trust
- Visionary
- Macular Society
- Glaucoma UK
- Rehabilitation Workers Professional Network
- Sense
- Scope
- Brake
- Disability Rights UK
- People First.

The report includes the following statements:

- Crossings which create level surfaces or continuous footways (like Copenhagen crossings) are not safe or accessible. These extend the appearance and feel of a pavement over a road, or a junction where sideroads join onto a main road, creating a level surface by removing detectable tactile features, such as upstanding kerbs, meaning pedestrians cannot always tell when they are in an area where vehicles may be moving.
- Mixed-use areas: where pedestrians and vehicles, including bikes and e-scooters, use the same area at the same time – are not inclusive. Any areas where pedestrians and other road users need to negotiate right of way are not inclusive and can be dangerous. Mixed-use areas include shared spaces, toucan crossings, Copenhagen crossings, and bus stops where passengers must cross a cycle track to access the bus.
- Pedestrians need enough logical and connected pedestrian-only routes to take them safely from the start to the end of their walking journeys.

## **Designing for Inclusion.**

In 2024, Guide Dogs UK commissioned University College London (UCL) to conduct research in response to accessibility issues relating infrastructure in the public realm. The study identified continuous pavements as a significant problem. The design makes it difficult for pedestrians with vision impairment to distinguish when they have left the footpath and entered the roadway, posing safety risks.

In addition, the complexity of these designs, particularly the need for pedestrians to focus on the movements of vehicles and other environmental factors, creates an additional cognitive load. This complexity makes it harder for these individuals to navigate safely. The study recommended that further testing would help clarify whether existing design features are adequate or if more changes are needed to reduce cognitive load and improve overall safety.

Guide Dogs NSW/ACT would agree, further research is required to determine the optimal design elements that would make raised crossings and continuous footpaths safer for people who are blind or have low vision.

By considering these global insights, we can better understand the importance of addressing these challenges locally.

## Key terms from the focus group

- **Australian Access Standards** - The suite of Australian Standards that relate to disability are contained in AS1428 (+) They provide guidance on the minimum design requirements to enable access for people with disability. The Standards themselves relate to building works and are linked to the Building Code of Australia (BCA), but many principles have been included in the City of Sydney's policies and guidelines for creating inclusive and accessible public domains.
- **Kerb ramp or Pram ramp** - A sloped section of the kerb that transitions from the footpath to the street, providing an indication of leaving a footpath and entering a road. The gradient should be between 1:8 and 1:8.5, all planes of ramps and wings shall have sharp gradient transitions. The kerb ramp should be aligned in the direction of travel and aligned with the kerb ramp on the opposite side of the crossing (AS 1428.1:2021)
- **At-grade zebra crossings** – A zebra crossing, with painted white stripes, is level with the road and has with kerb ramps connecting to and from the footpath. This crossing gives people walking priority to cross.
- **Partially raised crossings** – A raised zebra crossing, with painted white stripes, and a raised platform (flat top road hump) spanning across the entire width of the roadway. Kerb ramps connect to raised platform from the footpath on both sides. These crossings are often implemented in areas that need high capacity for stormwater.
- **Raised crossings** – A raised zebra crossing, with painted white stripes, where the footpath and road are at the same level and gives people walking priority to cross. The design has a raised platform (flat top road hump) spanning across the entire width of the roadway to bring the road to the same level as the adjacent pedestrian footpaths. Cars drive up, over and down the raised platform.
- **Gutter bridges** – a metal grate, positioned between the raised crossing and the footpath (all at the same level), allows stormwater to flow underneath.
- **Continuous footpaths** – An uninterrupted surface treatment of the footpath continuing across a side street or driveway. People walking on the footpath have priority over vehicles crossing it. There are no marked white lines and usually no warning tactile ground surface indicators at the transition point where cars/vehicles can travel.

- **Environmental cues** – Features like textures, sounds, landmarks, shorelines, luminance contrast and tactile cues that help people who are blind or have low vision understand their surroundings, locate crossings and navigate their environment.
- **Tactile Ground Surface Indicators (TGSIs)** – Tactile Ground Surface Indicators are truncated cones and/or bars installed on the ground or floor surface to provide cues, which, when combined with other environmental information, guide and assist people who are blind or vision-impaired with warning (raised dots) or directional (bars) orientation information. (AS 1428.4.1).
- **Audio Tactile Signals** – signals that consist of both audible and tactile components to help pedestrians who are blind or have low vision and/or hearing impairments. The ATS helps with locating the relevant push-button assembly using a locator sound and then emits both audible and tactile feedback when the walk signal is displayed for the crossing.

## Focus Group findings

### About the focus group

- **Participants:** Nine people were recruited from Guide Dogs NSW/ACT, Vision Australia, and Blind Citizens Australia. There were six women and three men. Four identified as blind and five as having low vision.
- **Mobility Aids:** Four participants used canes, five were Guide Dog handlers, and three used both canes and Guide Dogs. 5 used Guide Dogs as their primary mobility aid.
- **Date and Time:** The focus group was held online on Thursday, 14th November 2024, from 10:30 am to 12:30 pm.
- **Compensation:** Participants were given gift vouchers for their attendance.
- **Facilitation:** Pre-interviews were conducted to ensure participants understood the definitions of raised crossings and continuous footpaths and had experience with these types of crossings. During the focus group, each person was given the opportunity to speak in a random order to ensure all voices were heard.

- **Facilitators:**

- Jennifer Moon - Principal Advisor, Access and Stakeholder Engagement, Guide Dogs NSW/ACT. Jen has over 35 years of experience in the field of blindness and low vision, working both nationally and internationally. She has provided orientation and mobility skills and conducted educational sessions for stakeholders. Jen is passionate about involving people with lived experience in the design of public spaces and digital platforms.
- Aroha Nisbett - Advocacy Campaigns Manager, Guide Dogs NSW/ACT. Aroha joined Guide Dogs NSW/ACT four months ago, bringing 25 years of experience in stakeholder engagement in the not-for-profit sector. She focuses on creating inclusive spaces and developing programs that reflect the needs of the community. Aroha is dedicated to building connections and uplifting voices and stories that matter.
- **City of Sydney Staff:** The focus group was attended by nine staff members from the City of Sydney, representing planning, infrastructure delivery, urban design, and social policy teams.
- **Focus group findings:** The focus group discussed raised crossings and continuous footpath treatments separately. Many issues were common to both types but are listed separately for clarity. All participants agreed on the most common issues.

## Challenges with raised crossing

### Common Issues Reported by All Participants

#### 1. Difficulty locating the crossing point.

- Description: Raised crossings are hard to identify due to the lack of traditional cues like kerbs and ramps, which people with low vision and blindness rely on for navigation.
- Number of mentions: 9 participants.

#### Quotes:

**Sarah H:** “It’s mainly about identifying the crossing because those traditional clues I’m used to aren’t there.”

**Charlie:** “I’ve walked past the dots and ended up on the road before I realised it.”

## 2. Elevated risk of veering

- Description: There is an increased risk of veering into traffic or bicycle lanes due to the absence of clear shorelining or directional cues.
- Number of mentions: 7 participants

### Quotes:

**Bruce:** “For people who are totally blind, veering is a big problem. You can start crossing but end up in the middle of the road because there’s nothing to help you orient yourself.”

**Susan:** “If you go across crookedly, you could approach the corner of the building line on the other side of the corner, and then you’ve got to reorient yourself.”

## 3. Difficulty walking in a straight line

- Description: Without an aligned kerb ramp for direction, it is challenging to walk in a straight line.
- Number of mentions: 6 participants

### Quotes:

**Bruce:** “With the kerb, I can put my heels in the gutter and orient myself, but you just can’t do that with TGSIs.”

**Susan:** “Veering is a common problem for people who are totally blind, particularly.”

## 4. Uncertainty about boundaries

- Description: Participants are unsure where the safe footpath ends, and the dangerous road begins.
- Number of mentions: 8 participants

### Quotes:

**Liz:** “I’m unable to identify when I am or am not on the road.”

**Gisele:** “I can’t tell when I’ve come to a roadway and when I’m back on the footpath.”

## 5. Disorientation

- Description: The lack of distinct landmarks leads to disorientation.
- Number of mentions: 7 participants

### Quotes:

**Gisele:** “The concentration demands are too much with ambient noises, people stopping to say hello, and other distractions.”

**Susan:** “You could be across one of these flat surfaces and end up on the wrong side of a corner and then have to reorient yourself.”

## 6. Anxiety and uncertainty

- Description: Making safe road crossing decisions is difficult, especially with the rise of silent electric vehicles.
- Number of mentions: 9 participants

### Quotes:

**Jaci:** “Our vehicles are getting quieter, and I rely on my hearing to detect when I’m near an intersection. When it’s hard to hear, it lowers my confidence.”

**Liz:** “With electric cars and construction noise, it’s unsafe. A stranger had to grab me once and pull me off the road when my Guide Dog led me to a crossing.”

## 7. Cognitive fatigue

- Description: The enhanced concentration required to navigate these designs leads to cognitive fatigue.
- Number of mentions: 8 participants

### Quotes:

**Liz:** “Navigating these crossings means concentrating constantly, which is exhausting. Every sensory input gets the same priority.”

**Susan:** “Concentration fatigue is constant. There’s so much to process, and it’s mentally draining to stay alert all the time.”

## 8. Significant safety concerns

- Description: These issues collectively pose serious safety risks.
- Number of mentions: 9 participants

### Quotes:

**Bruce:** “These things are really scary because they don’t allow me to know where I am, and it’s too easy to find myself in the middle of something dangerous.”

**Gisele:** “I can’t tell when I’ve come to a roadway, and importantly, when I’m back on the footpath.”

## Challenges with continuous footpaths

### Common issues reported by all participants

#### 1. Difficulty distinguishing between footpath and road

- Description: The seamless transition from the footpath to the road makes it hard for pedestrians to know when they are crossing into a roadway. It is unclear where the safe footpath ends, and the danger zone begins.
- Number of mentions: 9 participants

### Quotes:

**Liz:** “The transition is so smooth that it feels like I’m still on the footpath until a car comes, or someone pulls me back.”

**Nic:** “Sometimes I don’t realise I’m on the road until it’s too late, because the footpath just blends in.”

#### 2. Elevated risk of veering

- Description: There is an increased risk of veering into traffic or bicycle lanes due to the absence of clear shorelining or directional cues.
- Number of mentions: 7 participants



### **Quotes:**

**Bruce:** “For people who are totally blind, veering is a big problem. You can start crossing but end up in the middle of the road because there’s nothing to help you orient yourself.”

### **3. Difficulty walking in a straight line**

- Description: Without an aligned kerb ramp for direction, it is challenging to walk in a straight line.
- Number of mentions: 6 participants

### **Quotes:**

**Bruce:** “With the kerb, I can put my heels in the gutter and orient myself, but you just can't do that with TGSIs.”

### **4. Disorientation**

- Description: The lack of distinct landmarks leads to disorientation. Pedestrians are unsure if they have crossed a road.
- Number of mentions: 7 participants

### **Quotes:**

**Gisele:** “The concentration demands are too much with ambient noises, people stopping to say hello, and other distractions.”

**Susan:** “You could be across one of these flat surfaces and end up on the wrong side of a corner and then have to reorient yourself.”

### **5. Anxiety and uncertainty**

- Description: Making safe road crossing decisions is difficult, especially with the rise of silent electric vehicles.
- Number of mentions: 9 participants

### **Quotes:**

**Jaci:** “Our vehicles are getting quieter, and I rely on my hearing to detect when I’m near an intersection. When it’s hard to hear, it lowers my confidence.”

**Liz:** “With electric cars and construction noise, it’s unsafe. A stranger had to grab me once and pull me off the road when my Guide Dog led me to a crossing.”

## 6. Cognitive fatigue

- Description: The enhanced concentration required to process multiple environmental cues, especially when navigating these designs, leads to cognitive fatigue.
- Number of mentions: 8 participants

### Quotes:

**Abby:** “I’m trying to focus on tactile cues while dealing with the noise and other pedestrians. It’s just too much, and I end up exhausted.”

**Bruce:** “In noisy areas, I can’t focus on the subtle tactile cues, and it’s mentally draining.”

## 7. Significant safety concerns

- Description: These issues collectively pose serious safety risks.
- Number of mentions: 9 participants

### Quotes:

**Bruce:** “These things are really scary because they don’t allow me to know where I am, and it’s too easy to find myself in the middle of something dangerous.”

**Gisele:** “I can’t tell when I’ve come to a roadway, and importantly, when I’m back on the footpath.”

# Psychological and behavioural impact of current crossing designs

Current designs, like raised crossings and continuous footpaths, aim to provide smooth transitions and prioritise pedestrians. However, they unintentionally harm the confidence, safety, and independence of people with low vision or blindness. These designs, while striving for accessibility, often create barriers and safety concerns that limit freedom and community connection.

## 1. Decreased confidence and safety

The lack of clear markers on crossings increases anxiety and uncertainty for participants. Raised crossings and continuous footpaths often lack consistent and recognisable cues, like kerbs and tactile cues, which are essential for people with low vision or blindness to navigate safely. This absence of clear environmental cues reduces confidence in moving independently, creating uncertainty and reducing their sense of independence and autonomy.

### Quotes:

**Sarah H:** “I used to go into the city on my own, but now I have to meet someone each time because I just don’t have the confidence I used to.”

**Jaci:** “I don’t feel comfortable walking with my young child near these crossings because I can’t be sure where the road begins. My confidence is gone in these areas.”

## 2. Increased anxiety and stress

Inconsistent use of clear environmental cues and the rise in quiet electric vehicles heightens anxiety. Participants often worry about unknowingly stepping into roadways, requiring constant vigilance and leading to mental fatigue which increases the risk of accidents. This ongoing anxiety affects mental and physical well-being deterring people from fully engaging with public spaces and the community.

### Quotes:

**Liz:** “It’s nerve-wracking when you can’t hear the cars. I feel like I’m taking a risk every time I step into what I think might be a crossing.”

**Nic:** “I walk with a sense of anxiety, constantly wondering if I’ve accidentally walked into the road. It’s mentally exhausting.”

**Sarah H:** “I avoid these areas because I can’t tell if I’m on a footpath or in the road, and it makes me feel unsafe.”

**Nic:** “It’s impossible to know if I’ve reached the other side, especially if there’s no tactile. I walk with a constant sense of anxiety.”

### 3. Avoidance behaviours and limited access to services

The stress and uncertainty of navigating these crossings are forcing people to choose between safety and going out to meet friends, enjoy the city, or attend appointments. Many avoid areas within the City of Sydney because they don't feel confident that the current designs allow them to navigate safely. This directly impacts their health, social lives and independence.

#### Quotes:

**Giselle:** "There are places I just won't go anymore. It's too stressful, and I can't navigate safely on my own."

**Liz:** "I haven't been able to get my usual skin cancer check-ups because I can't safely cross to get there. My world is getting smaller because of these crossings."

**Liz:** "I avoid these intersections. They feel too risky. This impacts my ability to go to places I need, like health appointments."

### 4. Impact on independence and community participation

Reduced confidence, increased anxiety, and avoidance behaviours harm people's independence and community participation. As independence decreases, people find it harder to engage in community life and feel more isolated. These issues limit freedom of movement, access to essential services, and social interactions. The design of crossings determines who can participate in our communities.

#### Quotes:

**Bruce:** "It's like my world is getting smaller. I used to be able to go wherever I needed, but now I have to think twice before even going to meet friends."

**Sarah H:** "I feel like I'm losing my independence. I have to depend on someone else every time I go into the city now, and that's something I used to do easily on my own."

# Preferences for crossing designs

## 5. Traditional kerb ramps

Participants expressed a strong preference for traditional kerb ramps in crossing designs. Kerb ramps provide clear, consistent cues that help people with low vision and blindness identify the start and end of a crossing. These physical cues are essential for safe and confident navigation.

### Quotes:

**Sarah:** “I just love a traditional crossing. There’s just so many extra pieces of information that help me pick up that it is a crossing, whether it’s with my guide dog or with my cane.”

**Liz:** “A kerb and that gradient, and that proprioception and that drop down, it’s something that my dog can always identify as this is something I’m using to cross the road.”

## 6. Signalised crossings

Traffic light-controlled crossings with audio tactile signals (ATS) in conjunction with aligned kerb ramps, are highly valued by participants for enhancing safety and promoting independence. These signalised crossings provide both auditory and tactile feedback, which are fundamental elements for people with low vision and blindness to navigate crossings safely.

### Quotes:

**Bruce:** “Traditional crossings combined with audio tactile signals optimise our independence and safety.”

**Sarah H:** “If there’s lights, the audio tactile signals are sensational if they’re working, and you can hear them or feel the vibration through the pole.”

## 7. Multiple environmental cues

Feedback highlighted the need for multiple environmental cues to improve safety. The combination of kerb ramps and ATS signals significantly enhances safety and promotes independence for people with low vision and blindness. These features

provide multiple layers of information, making it easier to navigate crossings confidently.

### **Quotes:**

**Charlie:** “Traditional crossings each and every time. With the lights giving you audible sound, you know when to cross and when not to cross.”

**Jaci:** “Kerb ramps are good for consistency. They are clear indicators for our canes and guide dogs, and they help children learn where the crossing point is.”

## **8. Community consultation**

Community consultation is crucial in designing crossings that meet the needs of people with low vision and blindness. By involving those directly affected by these designs, planners and designers can gain valuable insights into the practical challenges and preferences of the community. This approach ensures that the solutions implemented are both effective and inclusive.

### **Quotes:**

**Liz:** “I just want to get on with my life. There’s so many other things I’d rather be doing than sitting here talking about how I’d really love to be able to cross the road again.”

**Abby:** “Would you risk your life to explore the city? It’s that question that we always ask ourselves before we make a decision to leave the house.”

**Susan:** “Rather than deal with the problems of navigating the streets of City of Sydney, I’ll get on a bus rather than getting some exercise and fresh air.”

## **Follow up with participants**

Guide Dogs NSW / ACT followed up with all participants individually via email or by phone after the focus group. Some common themes that came up in these conversations included:

- **Appreciation** – all participants were thankful that they were invited to attend the focus group so that they could provide feedback regarding their experience using raised crossings and/or continuous footpaths.
- **Validation** – all participants commented on their sense of validation, knowing that all participants were experiencing the same difficulties with raised crossings and continuous footpaths as themselves.
- **Relief from Shared Experience** - many participants said that they were somewhat relieved to know that others were experiencing difficulties navigating raised crossings and/or continuous footpaths. They were relieved to know that it wasn't their fault that they couldn't be 'taught' to reliably detect the footpath to road transition, and that their anxiety when encountering these designs was indeed warranted.
- **Design Flaw** – the realisation that the design of raised crossings and continuous footpaths, rather than their own abilities, was the source of their difficulties, was raised by many participants. This understanding provided a sense of relief, as it shifted the responsibility away from them and onto the design itself. The difficulties they have been facing in navigating these areas isn't due to a personal shortcoming, but rather a design flaw.
- **Being Heard** – all participants were hopeful that the City of Sydney heard how difficult and dangerous the design of raised crossings and continuous footpaths are for them, and with this knowledge, will amend the designs moving forward.

## Recommendations for improving design and policy

The insights from the focus group highlight critical opportunities for improving crossing and footpath designs to better ensure the safety, confidence, and independence of people with low vision or blindness.

### 1. Prioritise traditional crossings with clear kerb ramps

Traditional crossings with kerb ramps provide essential physical cues, helping people with low vision or blindness clearly distinguish where the footpath ends, and the road

begins. Raised crossings and continuous footpaths without kerbs can be confusing. Reviewing design standards to prioritise kerb ramps or using consistent TGSIs **with other cues**, where kerbs can't be used, may help improve understanding and safety.

## **2. Introduce more ATS at crossings**

Audio Tactile Signals (ATS) provide crucial audible and tactile feedback, helping people with low vision and blindness know when it is safe to cross. These signals are especially useful in noisy areas or where there are quiet electric vehicles. Make ATS a standard feature at all key crossings, with regular maintenance checks to ensure they work properly, will enhance safety.

## **3. Ensure consistent Tactile Ground Surface Indicators (TGSIs) across all crossings**

It is apparent that TGSIs when used in isolation, are not sufficient to detect the transition from footpath to road. Participants noted that inconsistent tactile indicators also make it hard to identify crossings, increasing the risk of stepping into the roadway by mistake. When installed with other environmental cues, TGSIs should be placed cross the entire width of the crossing and set back 300 mm from the hazard (the road). Regular maintenance checks of TGSIs should be conducted.

## **4. Set clear standards for continuous footpaths**

Continuous footpaths eliminate level changes and reinforce pedestrian priority but can make it hard for people with low vision or blindness to distinguish the transition between footpaths and roadways, leading to unintentional entry into roadways. The addition of visual and tactile cues needs to be installed to help people identify when they are nearing a roadway. Establishing and consistently applying clear design standards will enhance safety. Co-designed research is required to determine effective environmental cues.

## **5. Regular consultation with people with lived experience**

The focus group stressed the need to consult people with lived experience when designing crossings and footpaths. Regular input from the blind and low vision



community ensures new designs meet real-world needs. Setting up a regular consultation process with representatives from the blind and low vision community, using focus groups, surveys and on-site testing, will gather valuable feedback. Developing a policy that requires new pedestrian infrastructure to be reviewed with input from the low vision and blind community will further ensure accessibility.

## **6. Use multiple overlapping cues for greater accessibility**

Participants noted that relying on only one type of cue, such as tactile ground surface indicators, is not sufficient. Combining multiple cues—auditory, tactile, and visual—can significantly enhance the safety and accessibility of crossings for all users. Designing crossings and footpaths with a combination of tactile cues, kerb ramps, luminance contrasts, and audio signals, will greatly improve accessibility. Integrating these multiple cues into city design standards will ensure each crossing provides comprehensive support, catering to the diverse needs of everyone.

## **7. Simulated demonstrations and training for design teams**

Participants suggested that designers experience raised crossings and continuous footpaths under simulation of low vision. This practice can help design teams understand the challenges firsthand and improve the inclusiveness of their designs. Conducting regular educational sessions (codesigned and co-delivered by people with Lived Experience), as part of design training for urban planners, engineers, and other professionals involved in pedestrian infrastructure, will improve their understanding. Establishing a policy for design teams to participate in educational sessions will help with creating more inclusive designs.

## **8. Follow-up focus group to discuss solutions**

Given the valuable insights from the initial focus group, holding another session to discuss potential solutions with participants could offer further direction and confirm the suitability of the insights provided. Establishing an ongoing feedback loop with the community will support the continued refinement of pedestrian infrastructure, ensuring it remains accessible, safe and inclusive.

# Conclusion

The way we design crossings and footpaths directly impacts who can move freely and safely in our communities. For people with low vision and blindness, current designs of raised crossings and continuous footpaths can create significant safety issues, limiting their independence, freedom of movement, and ability to participate fully in city life. This inequity is more than an inconvenience; it impacts how people live, work, and connect with others. By prioritising accessible and inclusive design, we can uphold the rights of everyone to participate in community life equally. Building a city that is truly welcoming and accessible and which reflects values of equity, respect, and inclusion. Here are some voices from the focus group:

**Liz:** “I just want to get on with my life. There are so many other things I’d rather be doing than sitting here talking about how I’d really love to be able to cross the road again.”

**Bruce:** “It’s like my world is getting smaller. I used to be able to go wherever I needed, but now I have to think twice before even going to meet friends.”

**Abby:** “Would you risk your life to explore the city? It’s that question that we always ask ourselves before we make a decision to leave the house.”

**Gisele:** “There are places I just won’t go anymore. It’s too stressful, and I can’t navigate safely on my own.”

**Susan:** “Rather than deal with the problems of navigating the streets of the City of Sydney, I’ll get on a bus rather than getting some exercise and fresh air.”

**Bruce:** “Drivers expect pedestrians to behave rationally. That’s exactly what we can’t do if we don’t know we’re in a crossing or can’t hear a vehicle coming.”

**Sarah H:** “I feel like I’m losing my independence. I have to depend on someone else every time I go into the city now, and that’s something I used to do easily on my own.”

**Nic:** “I walk with a sense of anxiety, constantly wondering if I’ve accidentally walked into the road. It’s mentally exhausting.”