



*Dedicated to a better Brisbane*

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Disabilities Transport Access Secretariat  
Transport Access Section  
Road Safety and Transport Access Branch  
Department of Infrastructure and Transport  
Australian Government  
GPO Box 594  
CANBERRA ACT 2061

Dear Sir/Madam

Thank you for the opportunity to make a submission to the *2012 Review of the Disability Standards for Accessible Public Transport 2002 (Transport Standards) Issues Paper*.

Brisbane City Council as an operator and provider of bus and ferry services places a priority on achieving equitable access and inclusion for everyone. The submission, attached, shares Council's experience in implementing the Transport Standards and offers support for any additional work that may be undertaken to improve implementation.

If you wish to clarify or discuss any matter raised by this submission please contact Mr Lindsay Enright, Transport Planning Manager, by telephone on (07) 340 35012 or by email at [lindsay.enright@brisbane.qld.gov.au](mailto:lindsay.enright@brisbane.qld.gov.au).

Yours sincerely

Colin Jensen  
**CHIEF EXECUTIVE OFFICER**



## Transport Planning and Strategy Brisbane Infrastructure

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# BRISBANE CITY COUNCIL'S SUBMISSION TO THE 2012 REVIEW OF THE DISABILITY STANDARDS FOR ACCESSIBLE PUBLIC TRANSPORT 2002 (TRANSPORT STANDARDS)

APRIL 2013

## Document Change History

### Document Control Sheet

If you have any questions regarding this document or if you have a suggestion for improvements, please contact:

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Position	Transport Strategy Manager

### Version History

Version	Author	Issue Purpose	Date
V1	Wendy Downes	Internal consultation	12 March 2013
V2	Wendy Downes	Civic cabinet consideration	25 March 2013
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V4			
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### Distribution List

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## 1 Executive summary

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Brisbane City Council has placed a priority on achieving equitable access and inclusion for everyone by seeking to eliminate, as far as practicable, discrimination from Council's services, including public transport. However, as an operator and provider of public transport, Council have found some requirements of the *Disability Standards for Accessible Public Transport 2002* (Transport Standards) difficult to implement within the Brisbane environment.

Physical constraints and community expectations are not necessarily barriers to the provision of non-discriminatory access. However, they do provide challenges to achieving the design solutions prescribed by the Transport Standards.

It is acknowledged that the *Disability Discrimination Act 1992* (DDA) provides a process for alternative solutions to be developed. However, more guidance on acceptable outcomes for the design solutions would be beneficial because they:

- provide a nationally consistent approach
- make best use of investment that operators and providers make into finding alternative solutions by pooling resources and learning's
- provide an environment that encourages collaboration and innovation
- reduce the burden on smaller operators and providers
- reduce reliance on demonstrating unjustifiable hardship.

Council's submission to the *2012 Review of the Disability Standards for Accessible Public Transport 2002 (Transport Standards) Issues Paper* focuses on Question 3 and includes 7 recommendations as follows.

### **Recommendation 1**

The Transport Standards for ramps and landings connected to pontoon wharves are updated to reflect the physical constraints of a tidal riverine environment and the construction of structures in an area prone to flooding. One option is to remove the requirement for resting landings on ramps connecting to a pontoon.

### **Recommendation 2**

The Transport Standards could clarify that the illumination levels set out in section 20.1 are for internal premises and provide additional guidance on appropriate illumination levels for external areas and open structures. A new section that sets the standards for external areas and open structures could be included in the Transport Standards.

### **Recommendation 3**

The Transport Standards could be amended to expand the provisions of section 20.3 to include external lighting on ferries or other passenger vessels that that may interfere with an operator's vision.

### **Recommendation 4**

The Transport Standards provide specific guidance for bus stops with waiting areas that seat 2-6 people. A possible approach is that at bus stops that seat less than 7 people provide 1 allocated space.

### **Recommendation 5**

The Transport Standards could be amended to provide more detail about the definition of a 'level surface' and allow lower kerb height to 130mm in areas with existing kerbs.

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### **Recommendation 6**

New technology can change the design standards set out in the Transport Standards. Council would welcome the opportunity to be involved in the development of performance based outcomes or amendments to the current Transport Standards for buses, bus stops, ferries and ferry terminals to accommodate changes in technology.

### **Recommendation 7**

In addition to the prescriptive design solutions the Transport Standards, include performance based guidance on the outcomes that are to be achieved. Providing clear performance guidance will assist public transport providers and operators in finding nationally consistent, innovative and flexible solutions that can be applied in areas that have a environmental constraints and community expectations.

Brisbane City Council would welcome the opportunity to work with the Department of Infrastructure and Transport, the Australian Human Rights Commission and other public transport operators and providers to share it learning's and contribute to a nationally consistent approach of applying the Transport Standards in existing communities and sites that have development constraints. Council believes that pooling resources to find solutions encourages:

- innovation
- assists smaller operator and providers
- enables resources that would be spent finding solutions be invested in delivering good accessibility outcomes.

Of particular interest to Brisbane City Council is the development of solutions for ferry terminals in tidal riverine environments and bus stops in established hilly communities.



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## 2 Brisbane context

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Home to about 2 million people, Brisbane is the capital of Queensland and the economic hub for South East Queensland, one of Australia's fastest growing regions.

The city, established in 1825, grew from a convict settlement, located on the flood plain of the Brisbane River 27km inland from Moreton Bay. The winding reaches, tides and occasional flooding of the Brisbane River makes it a prominent feature of the landscape, as are hilly leafy suburbs that surround the flood plain. The topography of Brisbane necessitated the construction of narrow roads that wind their way along ridgelines connected by direct roads that dip down from the hill tops to transverse gullies. The historical development pattern means that many roads in the city are steep and have narrow footpaths.

Also important to the character of Brisbane is the subtropical climate. Trees, awnings and shelters provide protection from sun and rain and are valued by residents for contributing to the liveability of Brisbane. Responding to the climate, Brisbane needs to be resilient to regular flooding of local creeks and the Brisbane River.

Brisbane City Council is largest Council in Australia and delivers core local government services including roads and infrastructure, environmental protection and local parks, neighbourhood planning and bus and ferry services.

As a public transport operator and provider Brisbane City Council has one of the largest bus fleets in Australia with over 1,200 buses and approximately 6,500 bus stops. It also has a ferry network that extends for 23km along the Brisbane River, and has a fleet of 19 CityCats and 9 monohull CityFerries servicing 24 terminals.

The public transport services provided by Brisbane City Council operate within the TransLink network that includes Brisbane's rail, busway infrastructure and regional bus services. TransLink is a division of the Queensland Department of Transport and Main Roads and provides the overarching framework for Brisbane City Council's public transport services.

Brisbane City Council, though the *Brisbane Assess and Inclusion Plan 2012-2017* (Access and Inclusion Plan) places a priority on achieving equitable access and inclusion for everyone. It focuses on Council's role and responsibilities for eliminating direct and indirect discrimination and has been submitted to the Australian Human Rights Council (AHRC) as an action plan under section 60 of the *Disability Discrimination Act 1992* (DDA). As part of Council's commitment to eliminating discrimination, a Disability Reference Group has been set up that has advised Council on policy and practice since 1992.

To help with the December 2012 target date for public transport, Council set up a specific reference group to focus on the compliance issues of ferries made up of Brisbane's key disability groups and Council officers with relevant technical skills and experience. In addition to reference group input, meetings with the wider community of people with disabilities were held to provide information and discuss issues about complying with the DDA.

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### 3 Brisbane City Council's submission

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Brisbane City Council has placed a priority on achieving equitable access and inclusion for everyone by seeking to eliminate, as far as practicable, discrimination from Council's services, including public transport. However, as an operator and provider of public transport, Council have found some requirements of the *Disability Standards for Accessible Public Transport 2002* (Transport Standards) difficult to implement within the Brisbane environment.

Council's submission to the *2012 Review of the Disability Standards for Accessible Public Transport 2002* (Transport Standards) *Issues Paper* focuses on Question 3.

*"Are there requirements that have proven to be impractical or difficult to implement? If so please specify."*

The response to this question is provided in two parts.

Part 1 identifies implementation difficulties with specific requirements of the Transport Standards, organised by Council's asset classes that include:

- ferry terminals
- ferry vessels
- bus stops.

Part 2 discusses the prescriptive approach of the Transport Standards and the difficulties of retrofitting existing public transport infrastructure in established hilly communities and tidal riverine environments.

As Council is committed to making its public transport accessible to all people, Council's submission offers assistance and willingness to participate in any future forums, including any technical working groups formed to share learnings, pool resources and find nationally consistent solutions.



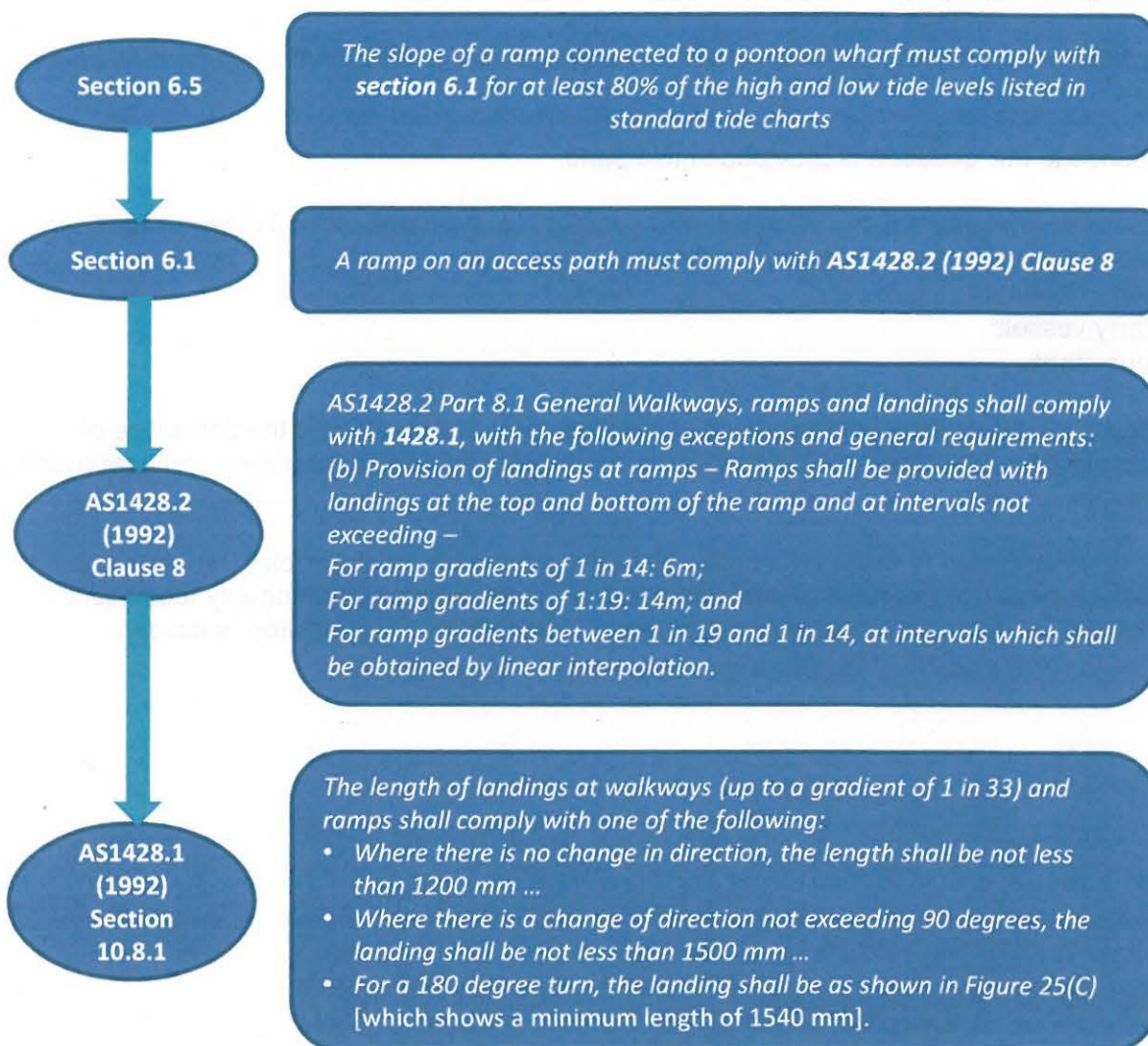
## Part 1

### 3.1 Ferry terminals

#### 3.1.1 Pontoon ramps

#### Regarding Transport Standards - Section 6.5 – Slope of ramps connected to pontoon wharves

Ramps connecting to a pontoon are required to comply with section 6.5 of the Transport Standards as set out below.



#### Implementation issues

The main issues that have made section 6.5 of the Transport Standards difficult to implement in the Brisbane River include:

- AS1428.2 is intended to apply to buildings and it has been difficult to apply in a tidal riverine environment such as the Brisbane River
- the Brisbane River has a 2.9m variance between the highest and lowest astronomical tide
- all of the ferry terminals are located in the flood plain of the Brisbane River, which floods regularly, and must be designed to be flood resilient
- in addition to the Transport Standards ferry terminals in the Brisbane River must comply with:
  - directions from the Regional Harbour Master about obstructions and lighting in the river because the Brisbane River is declared a pilotable area under the *Transport Operations (Marine Safety) Act 1994*

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- the Queensland Government's operation policy *Building and Engineering Standards for Tidal Works 2010* that require the deck level of a fixed landing to be a minimum of 300mm above the level of the highest astronomical tide (HAT) at the location, unless fender piles and other makers indicate the presence of the structure when inundated.

The consequences are:

- due to the tidal variance in the Brisbane River gangway ramps need to be longer than 6m to achieve a gradient of 1 in 14 the gangway 80% of the tide and consequently they will require landings to be provided
- landings in the Brisbane River are required to be a minimum of 300mm above HAT or include markers that indicate its location when the structure is inundated. (Note: Due to the high silt content in the Brisbane River, Council also constructs all fixed landing at least 300mm above HAT to avoid silt deposits and to ensure pontoon safety)
- any structure in the river requires approval from the Regional Harbour Master and consequently should be designed in consultation to ensure that the proposed structure does not affect marine safety or vessel movements along the Brisbane River
- any structure on the edge of the river must be designed to safely withstand floods.

Design solutions that have been considered to date Brisbane City Council include long and 'zig zag' style gangways with fixed and/or floating landings every 6m. Issues associated with these design solutions include:

- long gangways and landings that extend into the area of the river used by boat traffic and would not be approved by the Regional Harbour Master
- 'zig zag' style gangways and landings that have encroachment and amenity (noise and light) impacts on the neighbouring properties
- landings that reduce the flood resilience of the ferry terminal
- all lands must remain at 300mm above the river height to protect water flowing over the platform.

### **Recommendation 1**

The Transport Standards for ramps and landings connected to pontoon wharves are updated to reflect the physical constraints of a tidal riverine environment and the construction of structures in an area prone to flooding. One option is to remove the requirement for resting landings on ramps connecting to a pontoon.

A suggested amendment to section 6.5 could be:

*The slope of a ramp connected to a pontoon wharf must comply with section 6.1 for at least 80% of the high and low tide levels listed in standard tide charts, **with the exception of the requirement to provide landings at the intervals specified in AS1428.2***

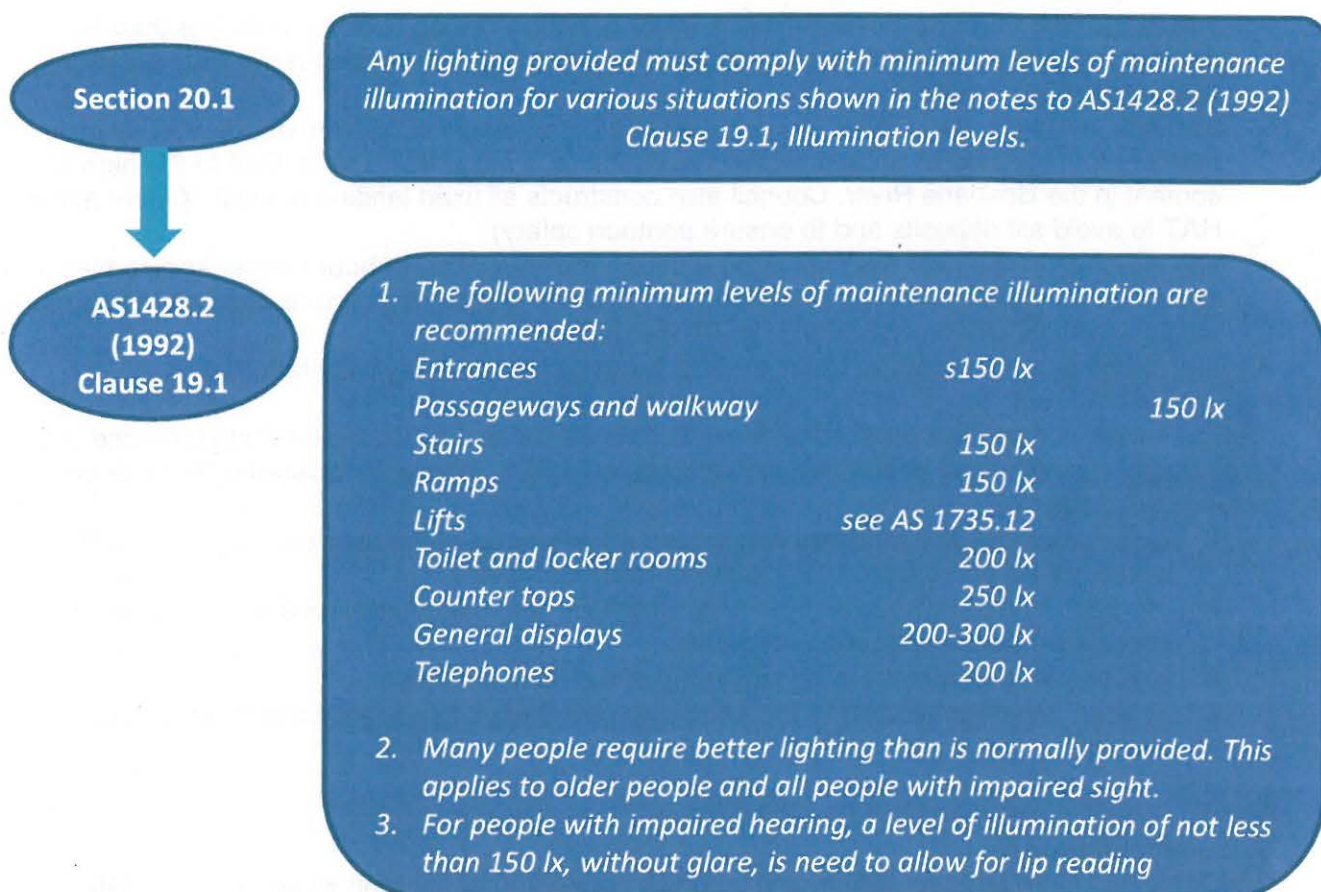
Brisbane City Council would welcome the opportunity to work with the Department of Infrastructure and Transport to develop Transport Standards or a nationally consistent acceptable outcome for ramps connected to pontoon wharves in a tidal riverine environment that provide access for people with a disability while providing safe and flood resilient ferry terminals.



### 3.1.2 Ferry terminal lighting

#### Regarding Transport Standards – Section 20.1 – Illumination levels

Lighting at ferry terminals is required to comply with section 20.1 of the Transport Standards as set out below.



#### Implementation Issues

The lighting level of 150 lx for the entrances, walkways and ramps, set out in AS1428.2 (1992) Clause 19.1, is for internal spaces.

Applying the internal standard to outdoor gangways, pontoons and open structures at ferry terminals has reduced visibility for people with visual impairments because of the:

- contrast between the surrounding area where lighting is lower and the ferry terminal
- glare on the water
- reduction in perspective between surfaces making it difficult to see changes in level.

In the instances where lighting of 150 lx has been installed there have been complaints by:

- people with visual impairments because of the glare and lack of perspective
- neighbouring properties and in particular businesses because of the high light levels.

To gain a better understanding of the concerns, Council considered the:

- NSW Maritime lighting policy (2007)
- Queensland Transport – Busway Planning and Design Manual (October 2008)
- Queensland Rail Design Guidelines
- Passenger Rail Network Lighting of Station Environment to comply with Disability Standards for Accessible Public Transport, Webb Consultancy
- recommendations from the WA Association for the Blind resulting from consultation undertaken by Webb Consultancy.



The outcomes of the technical review were discussed by Council's DDA reference group and tested during a site visit undertaken by people who are visual impaired.

The recommended illumination levels that was developed as a result of this work was:

- 42 lx for open gangways and primary paths<sup>1</sup>
- 100 lx for open pontoons<sup>2</sup>
- 21 lx for secondary paths<sup>3</sup>

#### Notes

1. Based on double the P6 lighting category in AS1158.3.1 of 21 lx and recommendations from the WA Association for the Blind resulting from consultation undertaken by Webb Consultancy for the preparation of the *Passenger Rail Network Lighting of Station Environment to comply with Disability Standards for Accessible Public Transport*.
2. Based on providing a higher level of light at the immediate start of the gangway as transition lighting and external lighting being enhanced to 150 lx at the ferry entry points during boarding and disembarking by the external lighting of a ferry.
3. Based on the need to transition between the ferry terminal and the adjacent environment.

#### Recommendation 2

The Transport Standards could clarify that the illumination levels set out in section 20.1 are for internal premises and provide additional guidance on appropriate illumination levels for external areas and open structures. A new section that sets the standards for external areas and open structures could be included in the Transport Standards.

The following illumination standards could be considered:

- 42 lx for open gangways and primary paths
- 100 lx for open pontoons

A suggested amendment to section 20.1 could be as follows:

#### 20.1 Illumination levels

*Any indoor lighting provided must comply with minimum levels of maintenance illumination for various situations shown in the notes to AS1428.2 (1992) Clause 19.1, Illumination levels.*

**20.1a Any external area or open structure lighting must comply with double the minimum levels of maintenance illumination for the various situations set out in AS1158.3.1 and provide an environment that reduces the glare and contrast in areas where people will be transitioning between places of different illumination levels.**

Brisbane City Council would welcome the opportunity to work with the Department of Infrastructure and Transport to develop Transport Standards or a nationally consistent acceptable outcome for illumination of external areas or open structures.

## 3.2 Ferry vessels

### 3.2.1 Ferry vessel lighting

#### Regarding Transport Standards – Section 20.3 – Dimming

Dimming of lights on ferry vessels is required to comply with section 20.3 of the Transport Standards as set out below.

#### Section 20.3

*Internal lighting may be dimmed as required to avoid reflection interfering with an operators' vision*

### Implementation Issues

CityCats in Brisbane have entry points at the foredeck and afterdeck. During boarding and alighting the external lights provide an illumination of 150 lx. However, as the wheelhouse is located above the foredeck, the external lighting of the foredeck reflects onto the wheelhouse windscreen and reduces the ability of the Master to safely keep a look-out. The *International Regulations for Preventing Collision at Sea – Marine Orders Part 30: Provision of collisions, issue 8 (order No.5 of 2009 Part B – Steering and Sailing Rules, Section 1 – Conduct of vessels in any condition of visibility, Rule 5 – Look-out*, requires every vessel to maintain a proper look-out by sight and hearing to make a full appraisal of the situation and the risk of collision. This operational requirement cannot be met with 150 lux external lighting on Brisbane's CityCats.

### Recommendation 3

The Transport Standards could be amended to expand the provisions of section 20.3 to include external lighting on ferries or other passenger vessels that that may interfere with an operator's vision.

A suggested amendment to section 20.1 could be as follows:

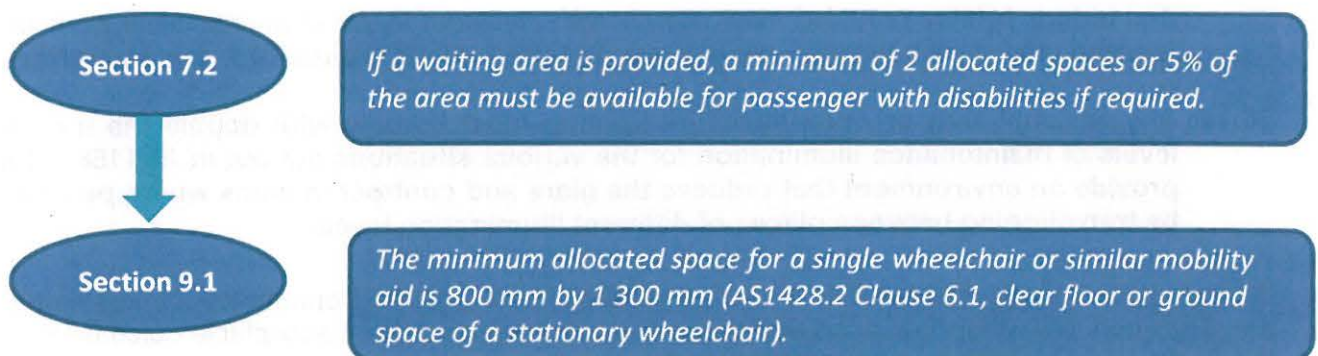
*Internal lighting or external lighting of a passenger vessel may be dimmed as required to avoid reflection or glare interfering with an operator's vision*

## 3.3 Bus Stops

### 3.3.1 Bus stop allocated spaces

#### Regarding Transport Standards – Section 7.2 – Minimum number of allocated spaces to be provided

The provision of allocated spaces for wheelchairs in a bus stop waiting area is set out in section 7.2 of the Transport Standards below.



### Implementation Issues

The AHRC *Guideline for promoting compliance of bus stops with the Disability Standards for Accessible Public Transport 2002* (AHRC Guideline) indicates that a basic accessible bus stop is not required to include a waiting area. However, at bus stops where seating is provided (seated bus stops and sheltered bus stops) allocated spaces are required. The Transport Standards provides two solutions for waiting areas:

- a minimum of 2 allocated spaces; or
- 5% of the area.

Although not specifically stated, the inference is that under all circumstances the minimum number of allocated spaces to be provided is two.

The issues are:

- the solutions provide different outcomes without any guidance as to which solution prevails



- the provisions appear to apply to large waiting areas that are planned to accommodate more people than a single standalone bus stop
- seated and sheltered bus stops in Brisbane generally provide seating for 2-6 people
- in the case of bus stops, 5% of the waiting area would equate to less than 1 allocated space
- the AHRC Guideline interprets section 7.2 of the Transport Standards as providing allocated spaces at a minimum of 5% of the area (but not less than 2 spaces).

Part 9 of the Transport Standards provides different approaches to the provision of allocated spaces for different types of conveyances. Consistent with this approach, specific detail for bus stops that have different characteristics to larger waiting areas could also be provided.

#### Recommendation 4

The Transport Standards provide specific guidance for bus stops with waiting areas that seat 2-6 people. A possible approach is that at bus stops that seat less than 7 people provide 1 allocated space.

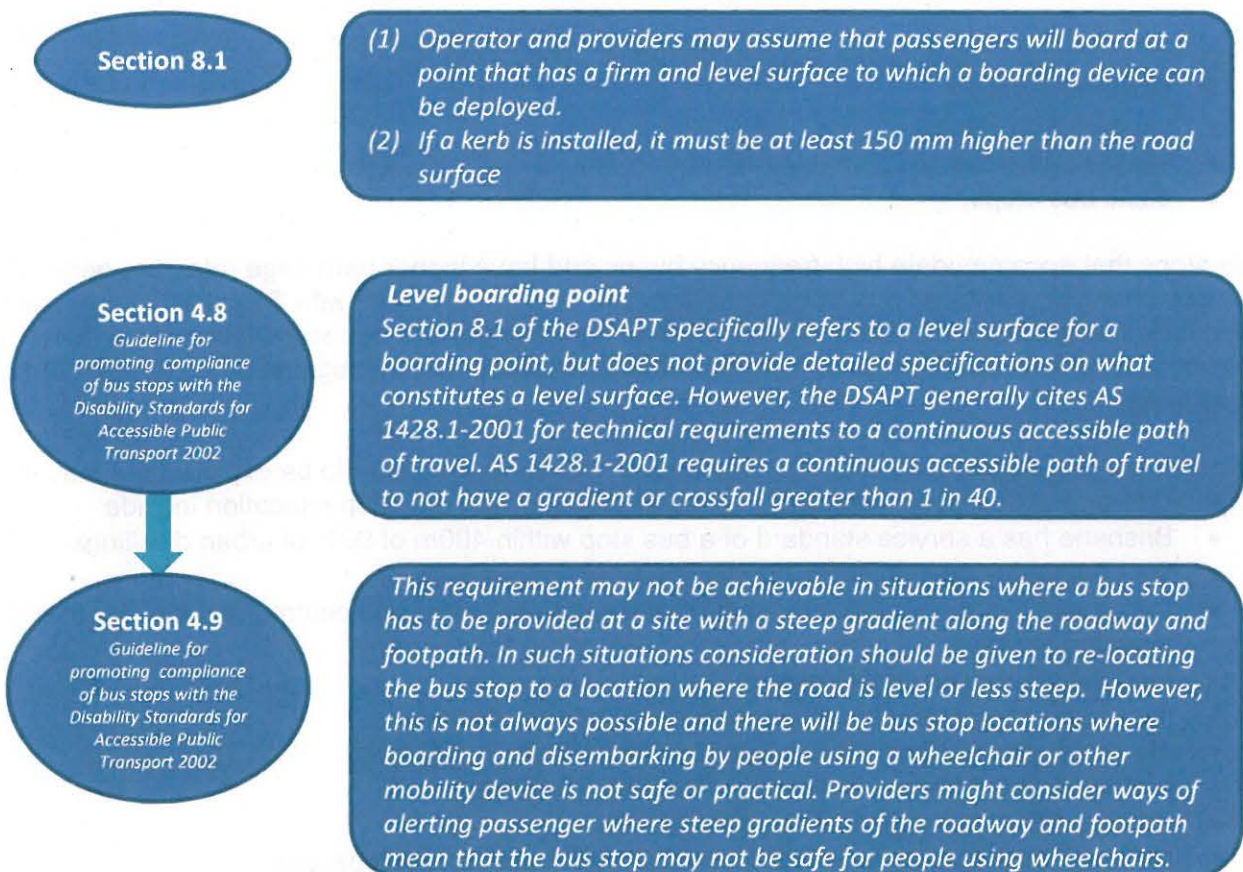
A suggested amendment to section 7.2 could be as follows:

*If a waiting area is provided, a minimum of 2 allocated spaces or 5% of the area must be available for passenger with disabilities if required. **Except at bus stops that seat less than 7 people where a minimum of 1 allocated space is provided.***

### 3.3.2 Bus boarding points

#### Regarding Transport Standards – Section 8.1 – Boarding points and kerbs

The provisions for a 'firm and level surface' at a bus boarding point are set out in section 8.1 of the Transport Standards as seen below.





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## Implementation Issues

The Transport Standards do not specify what constitutes a **level surface**. Section 4.8 of the AHRC Guideline provides the additional guidance (from AS 1428.1 – 2001) that an accessible path of travel should not have a gradient or crossfall greater than 1 in 40.

For the purpose of this discussion gradient is the slope of the road along the kerb and crossfall is the slope of ground between the property boundary and the kerb.

The AHRC Guideline acknowledges that some roads and footpaths have gradients greater than 1 in 40 and in these situations consideration should be given to relocating the bus stop to a flatter section of road. The AHRC Guideline also acknowledged that relocating bus stops to locations where it is safe for people using a wheelchair or other mobility device is not always practical. In these instances other provisions might consider ways of alerting passengers that the bus stop location is steep and may not be suitable for wheelchairs.

Brisbane is a hilly city and there are many roads used by buses that have gradients steeper than 1 in 40. Brisbane also has streets steeper than 1 in 14, which is the maximum gradient for a ramp set out in Clause 8.1 of AS 1428.2 (1992). In these locations engineering measures that change the ground and footpath slopes to achieve a gradient and crossfall of less than 1 in 40 have the following implications:

- increase the slope in the adjoining areas
- increases slip and fall risks from locally lowered levels
- the need for additional infrastructure such as ramps and handrails
- potential for concentrated overland flow and retention of sediment at the boarding point
- for longitudinal gradient, potential need to require the road reserve and kerb and gutter to ensure that the bus and boarding point are on the same gradient
- increase in costs for provision and maintenance.

There are four major types of bus stops in Brisbane. They include:

- bus interchanges
- sheltered bus stops
- seated bus stops
- basic bus stops.

Bus stops that accommodate high frequency buses and have higher patronage rates are generally bus interchanges, sheltered bus stops or seated bus stops. Consistent with Translink's approach to prioritising bus stops for DDA compliance, Council seeks to provide bus stops that have a high patronage or are known to be used by people with a disability with the highest possible standard of accessibility.

Relocating a bus stop to a location that has a level surface is an option to be explored but may not be possible or practical in all instances. Issues associated with bus stop relocation include:

- Brisbane has a service standard of a bus stop within 400m of 90% of urban dwellings
- the community may object to the relocation of the bus stop
- the new bus stop location may be further away from shops and community services that it is intended to serve
- road safety may be compromised
- the road gradient may be over 1:40 for a significant distance
- the verge may not be wide enough to accommodate a bus stop
- protected street trees may limit new bus stop locations
- existing driveways may limit bus stop locations
- the new bus stop may not be practical from bus operation perspective.

Achieving a kerb height of 150mm has also been an implementation difficulty in the older areas of Brisbane that have historic porphyry kerbs. These old rock kerbs have a height variance of 110 -

140mm. Generally, kerbs with a height of 130mm can be accommodated by boarding devices of the Brisbane City Council bus fleet.

### Recommendation 5

The Transport Standards could be amended to provide more detail about the definition of a 'level surface' and allow lower kerb height to 130mm in areas with existing kerbs.

The suggested standard for 'level surface' at a bus stop is as follows:

- maximum crossfall between the footpath and the kerb of:
  - 1 in 30 (3.3%) for a bus stop with an annual patronage of 30,000 or more
  - 1 in 20 (5%) for other bus stops
- a road and kerb gradient of:
  - 1 in 16 (6.25%) for a bus stop with an annual patronage of 30,000 or more
  - 1 in 10 (10%) for a bus stop with an annual patronage of less than 30,000.

Note: The maximum gradient of 1 in 10 is consistent with Brisbane City Council's *Subdivision and Development Guidelines* for roads on a bus route.

Consider lowering kerb height to 130mm in areas:

- that have existing kerb height lower than 150mm and
- can accommodate the boarding devices of the conveyances serving public transport infrastructure

The suggested amendment to section 8.1:

- (1) Operators and providers may assume that passengers will board at a point that has a firm and level surface to which a boarding device can be deployed. **A level surface at a bus stop has a maximum:**
  - (a) crossfall between the footpath and the kerb of 1 in 30 for a bus stop with an annual patronage of 30,000 or more and 1 in 20 for other bus stops
  - (b) road and kerb gradient of 1 in 16 for a bus stop with an annual patronage of 30,000 or more and 1 in 10 for other bus stops.
- (2) If a kerb is installed, it must be at least 150mm higher than the road surface. However, if the kerb is already constructed and can accommodate the boarding device of the conveyance serving the public transport infrastructure a kerb height of 130mm is acceptable.

Brisbane City Council would welcome the opportunity to work with the Department of Infrastructure and Transport to develop Transport Standards or a nationally consistent acceptable outcome for providing a level surface and kerb heights at bus stop boarding points.

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## Part 2

### 3.4 Increased use of mobility scooters

In Brisbane and throughout Queensland there has been an increased use of mobility devices, such as motorised scooters, other than wheelchairs. In response to the growing usage of mobility scooters, the Queensland Department of Transport and Main Road has published three advice documents:

- *Wheelchairs and Mobility Scooters Public Transport and Registration Requirements: For Retailers*
- *Wheelchairs and Mobility Scooters: A Guide for safe travel in Queensland*
- *Travelling with your Wheelchairs and Mobility Scooter: Public Transport and Registration Requirements.*

The increased popularity of mobility scooters demonstrates that changing technology can have impacts on the relevance of the Transport Standards. Mobility scooters are currently causing some challenges for buses in Brisbane because minimum requirements of the Transport Standards do not accommodate them. Examples include the boarding device of 300kg and the centre isle of a bus, which does not provide sufficient space for manoeuvring larger motorised scooters. Whilst it is acknowledged that the Transport Standards are minimum requirements, Council supports The Queensland Government's advice for retailers and users to assist them in manufacturing and purchasing mobility devices that can be used on public transport services that have met the minimum requirements of the Transport Standards.

#### Recommendation 6

New technology can change the design standards set out in the Transport Standards. Council would welcome the opportunity to be involved in the development of performance based outcomes or amendments to the current Transport Standards for buses, bus stops, ferries and ferry terminals to accommodate changes in technology.

### 3.5 Applying Transport Standards

Generally the design outcomes of the Transport Standards can be applied to the development of new public transport infrastructure in areas where there are few site development constraints. However, Brisbane City Council has experienced difficulties in implementing the design solutions provided by the Transport Standards during the retrofit of some existing bus stops and ferry terminals.

The main challenges of retrofitting existing bus stops to be DDA compliant include:

- the topography of Brisbane that includes many roads that are also bus routes that have gradients greater than 1 in 14 (the maximum slope of a ramp set out in Clause 8.1 AS 1428.2 (1992))
- the road pattern that follows contours of hills connected by steep roads that transverse gullies and hills create narrow roads that are constrained by the topography and existing development
- Brisbane City Council's standard of service of providing a bus stop within 5 minute walk of 90% of all urban dwellings (it should be noted that this service standard often means that bus stops are closer than 400m if the topography is steep and road network does not provide a direct pedestrian route to a bus stop)
- the historic development pattern of a small verge (sometimes less than 1.25m) reducing the area that can be used by a bus stop
- existing driveways and public utility infrastructure
- street trees that are protected under a vegetation protection order
- community expectations about service standards



- 
- the location of the land uses that are being served by the bus stop

The challenges of providing DDA compliant ferry terminals include:

- the river bank that has a gradient of 1 in 14 or higher in some locations (the maximum slope of a ramp set out in Clause 8.1 AS 1428.2 (1992))
- the tidal variance between LAT and HAT is 2.9m
- the river water has a high silt content and all boarding platforms, ramps, landings and pontoons must remain at least 300mm above the water at all river flow heights
- the reaches of the Brisbane River that accommodate the ferry service relatively narrow at about 250m wide, with strong currents and the space is used by a range of public and private passenger, freight and maintenance boats travelling on the Brisbane River
- the Brisbane River is a declared pilotable area under the *Transport Operations (Marine Safety) Act 1994* and, for safety and navigation reasons, all structures in the river require approval from Regional Harbour Master
- flooding is part of the Brisbane River ecosystem and Australian and Queensland legislation require structures on the rivers to be flood resilient.

Physical constraints and community expectations are not necessarily barriers to the provision of non-discriminatory access. However, they do provide challenges to providing the design solutions prescribed by the Transport Standards.

It is acknowledged that the DDA provides a process for alternative solutions to be developed. However, more guidance on the acceptable outcomes for the design solutions for retrofitting existing public transport infrastructure would be beneficial because they:

- provide a nationally consistent approach
- make best use of investment that operators and providers make into finding alternative solutions by pooling resources and learning's
- provide an environment that encourages collaboration and innovation
- reduce the burden on smaller operators and providers
- reduce reliance on demonstrating unjustifiable hardship.

#### **Recommendation 7**

In addition to the prescriptive design solutions the Transport Standards, include performance based guidance on the outcomes that are to be achieved. Providing clear performance guidance will assist public transport providers and operators in finding nationally consistent, innovative and flexible solutions that can be applied in areas that have a environmental constraints and community expectations.

Brisbane City Council would welcome the opportunity to work with the Department of Infrastructure and Transport, the Australian Human Rights Commission and other public transport operators and providers to share it learning's and contribute to a nationally consistent approach of applying the Transport Standards in existing communities and sites that have development constraints. Council believes that pooling resources to find solutions encourages:

- innovation
- assists smaller operator and providers
- enables resources that would be spent finding solutions be invested in delivering good accessibility outcomes.

Of particular interest to Brisbane City Council is the development of solutions for ferry terminals in tidal riverine environments and bus stops in established hilly communities.

