Warning and Directional- TGSIs

Prepared for the NSW Government -

NSW Roads and Maritime Services

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Prepared by the Physical Disability Council of NSW

Jordana Goodman
Policy Officer
Physical Disability Council of NSW
St Helens Community Centre
3/184 Glebe Point Road
Glebe NSW 2037

Freecall: 1800 688 831
Phone: 02 9552 1606
Fax: 02 9552 1606
Fax: 02 9552 4644
Web: http://www.pdcn.nsw.org.au/ Email: admin@pdcnsw.org.au

Who is the Physical Disability Council of NSW?

The Physical Disability Council of NSW (PDCN) is the peak body representing people with physical disabilities across New South Wales. This includes people with a range of physical disability issues, from young children and their representatives to aged people, who are from a wide range of socio-economic circumstances and live in metropolitan, rural and regional areas of NSW
The objectives of PDCN are:

- To educate, inform and assist people with physical disabilities in NSW about the range of services, structure and programs available that enable their full participation, equality of opportunity and equality of citizenship
- To develop the capacity of people with physical disability in NSW to identify their own goals, and the confidence to develop a pathway to achieving their goals (ie self advocate).
- To educate and inform stakeholders (ie about the needs of people with a physical disability) so they are able to achieve and maintain full participation, equality of opportunity and equality of citizenship.

Australian Standard 1428.4.1:2009 - Design for access and mobility
Part 4.1 Means to assist the orientation of people with vision impairment – Tactile ground surface indicators (TGSI)

Appendix C, Kerb Ramps, Medians and Multiple Entry Points

RMS Practice - General:

1. *Tactile ground surface indicators (TGSI) are to be considered in association with kerb ramps for new RMS works (including reconstructions) in accordance with this Appendix and the following guidelines.*

2. *RMS model drawing MD.R173.B01.A.1 is to be used for kerb ramps.*

3. *Warning TGSI's are not to be used with kerb ramps constructed with a grade of 1 in 8 or more.*

4. *Warning TGSI's are to be used with kerb ramps when the ramp grade is shallower than 1 in 8.5 (Refer Figure C1).*

5. *Directional TGSI's are not required at traffic signal sites with audio tactical push buttons.*

6. *Warning TGSI's are not to be used at traffic signal sites where a cut through is provided in the median as signal timing allows a pedestrian to complete their crossing.*

7. *Warning TGSI's are to be considered at splitter islands at traffic signals using points 3, 4 and 6 above.*

8. *Directional TGSI's are to be used with kerb ramps where kerb ramps and angled pedestrian crossings do not align with each other to ensure that a person with a sight disability crosses the road using the crossing.*

9. *The provision of any additional TGSI's is a matter for Council.*[1]

Background information

The Physical Disability Council of NSW (PDCN) would like to thank the NSW Roads and Maritime Services (RMS) for providing the opportunity to make comment on the application of Tactile Ground Surface Indicators (TGSI) to footpath infrastructure. As part of this review the RMS references the following three sheets (MD...R173.B01.A.1) that provide additional supporting information and plans:

- Sheet 1- Plans containing structural details of a basic kerb ramp, for a marked foot crossing with a kerb ramp and additional notes that are also referred on Sheets 2 and 3,

- Sheet 2- Plans identifying the location of the kerb ramps when part a zebra crossing, when the kerb ramp is part of an aligned crossing and at an adjacent street crossing,

- Sheet 3- Technical information identifying the location of the kerb ramp for acute intersections and obtuse intersections. [2]

Discussion

Tactile ground surface indicators (TGSI) are to be considered in association with kerb ramps for new RMS works (including reconstructions) in accordance with this Appendix and the following guidelines.

In summary PDCN believes that RMS should have the discretion to use directional TGSIs for both new works and reconstructions depending on environmental circumstances but needs to apply warning TGSI's in a consistent manner that conforms with AS 1428 Part 4 for all improvements whether it is for new works or reconstructions.

RMS model drawing MD.R173.B01.A.1 is to be used for kerb ramps.

[1] NSW Government- Roads and Maritime Services- Review scope
[2] NSW Government- Roads and Maritime Services (2005) Kerb Ramp Infrastructure (MD.R173.B01.A.1) http://www.rms.nsw.gov.au/doingbusinesswithus/designdocuments/modelroaddrawings/mrd_generalconcretepaving.html .

Technical information contained in Sheet 1 includes Plan A, Plan B and notes. The model drawing contained in Plan A illustrates a typical kerb ramp and this conforms to AS 1428 Part 1 in that it requires the following conditions:

- The minimum width of a kerb ramp is 1000 mm (Plan A),
- The length of a kerb ramp is a maximum of 1520 mm (Plan A),
- The maximum height of a kerb ramp is **150/ 190** mm (Section A-A),
- The maximum gradient of the kerb ramp be 1:8 (Section B-B)
- The direction of the kerb ramp must be aligned with the kerb ramp in the opposite direction

Warning TGSI's are not to be used with kerb ramps constructed with a grade of 1 in 8 or more, and

Warning TGSI's are to be used with kerb ramps when the ramp grade is shallower than 1 in 8.5 (Refer Figure C1).

A kerb ramp with a gradient more than 1:8 is considered as noncompliant with the Access Standards and subsequently should not be considered by RMS. PDCN would recommend that warning TGSIs be installed in all kerb ramps with a gradient lesser than 1:8 for both new works or as part of a reconstruction. On main roads where RMS may be considering reconstruction of noncompliant kerb ramps it may be necessary to elevate the height of the footpath, rather than trying to retrofit an existing kerb ramp where needing to move complex infrastructure below the kerb ramp such as telecommunication cabling and/ or plumbing may become costly.

PDCN is aware of the over use of warning and directional TGSIs, it is important to maintain consistency of tactile treatments throughout Australia, and therefore compliance with AS1428.4 is recommended. [3] A publication produced by the Western Australian government; - 'Guidelines for Designing and Planning for Pedestrians' contains resources and illustrations that may be a useful resource when implementing TGSIs in the urban environment. [4]

In the past advocacy organisations for people with physical disability have identified concerns with the installation of TGSIs due to concerns regarding that their mobility is inhibited and/ or that TGSIs are slip hazard. PDCN believes these concerns would be addressed if TGSI's were appropriately and correctly installed.

[3] Association for the Blind of WA- Providing access for People who are Blind or Vision Impaired - A handbook for designers, owners and managers of buildings and services

[4] Western Australian government- Department of Transport, Department of Planning and Public Transport Authority (2012) Guidelines for Designing and Planning for Pedestrians

Directional TGSI's are not required at traffic signal sites with audio tactical push buttons, and
Directional TGSI's are to be used with kerb ramps where kerb ramps and angled pedestrian crossings do not align with each other to ensure that a person with a sight disability crosses the road using the crossing

PDCN is concerned the inconsistency of this statement puts safety at risk. People with vision impairment use a variety of different visual, audio and tactile cues when crossing the road to enhance their safety, and subsequently PDCN believes that RMS should provide as many technologies as possible to facilitate safe pedestrian access.

Warning TGSI's are not to be used at traffic signal sites where a cut through is provided in the median as signal timing allows a pedestrian to complete their crossing.

Regardless of having signal timing people with vision impairment use a variety of different visual, audio and tactile cues when crossing the road to enhance their safety, and subsequently PDCN believes that RMS should provide as many technologies as possible to facilitate safe pedestrian access.

Warning TGSI's are to be considered at splitter islands at traffic signals using pedestrian crossings with either kerb ramps and/ or traffic signals.

When crossing a road, people who have impaired vision often use the kerb ramp to align themselves and then walk in a straight line to the other side. If the ramp does not align squarely with the kerb, it can lead people on an angle into the roadway, rather than directly across the street. It is important, therefore, that:

- Kerb ramps align squarely with the direction of road traffic;
- Kerb ramps on either side of the road are directly aligned with each other;
- Kerb ramps align with pedestrian refuge islands.

Similarly PDCN would recommend that warning TGSIs be used at all splintered pedestrian crossings to facilitate safe pedestrian access in addition to other sensory cues.

The provision of any additional TGSI's is a matter for Council.

Local councils should not be prevented from installing additional warning and directional TGSIs as long as these are consistent with the AS 1428 Part 4.1 and the Access Standards.