

# Design Innovations Working Group

Use of Banana Deflection Rails

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#### **O1** INTRODUCTION

The CWANZ Design Innovations Working Group undertook a review of the use of banana deflection rails [banana bars, Figure 1] in Australia. In undertaking this review, they considered the <u>Traffic and</u> <u>Road Use Management Volume1–Guide to</u> <u>Traffic Management Part6: Intersections,</u> <u>Interchanges and Crossings</u> [2020] prepared by the Queensland Department of Transport and Main Roads [TMR], and <u>Municipal Infrastructure Standards [MIS]</u> O5 – Active Travel Facilities Design, prepared by Transport Canberra City Services [TCCS].



#### **02** USE

It is recognised that physical barriers are often necessary to prevent access by unauthorised vehicles to parkland or infrastructure such as bridges and paths. The barriers prevent vehicles from causing damage to infrastructure, utilities [e.g. irrigation and drainage] and protects paths for intended users.

However. barriers placed at the termination of paths, on bridge approaches and at property boundaries can present a danger to cyclists and pedestrians if not carefully designed and sited. There is documented evidence of serious harm to path users, including death.



**Figure 1.** Example of banana deflection rails. Photo credit: Brisbane City Council



Access restriction devices to prevent unauthorised vehicle entry should be assessed in conjunction with the land custodian of the affected area or asset [e.g. bridges] and installed only if the following conditions are warranted:

- there is a documented recurrent issue with unauthorised vehicle access;
- an existing contiguous barrier designed to protect the asset is not effective in preventing vehicle access;
- the issue cannot be resolved by other methods [e.g. CCTV, police enforcement, user reports]; or
- vehicle access may damage path infrastructure (for example, lightweight bridges etc).

The second bullet point is of particular significance, which is often overlooked. The lack of a contiguous barrier allows vehicular access further afield, therefore making the barrier redundant and the barrier simply creates an unnecessary path-side hazard. The lack of a contiguous barrier allows vehicular access further afield, therefore making the barrier redundant and the barrier simply creates an unnecessary pathside hazard. Banana deflection rails create a parallax error because the top rail bends away from the vertical posts and path users cannot accurately interpret the extent of the intrusion into the pathway. TCCS has completely restricted their use and they may not be used under any circumstances. TMR allows use with specific design quidance to allow adequate path widths and clear enunciation of the alignment, with the banana deflection rails set back from the path itself.



#### edit: Department of Transport Western Australia

#### **O3** ELSEWHERE IN AUSTRALIA

of A quick overview path access restrictions throughout Australian jurisdictions indicates:

- The ACT has strict guidance on the design of access restrictions; banana deflection rails are being removed and, if necessary, replaced by bollards
- Brisbane City Council have funded a program to remove all banana deflection rails within the council area
- TMR has detailed design guidance for path terminal treatments in its road planning and design manual
- Victoria has some banana deflection rails but they are disliked by path users
- South Australia only uses bollards for path access restrictions, however the Bike Institute of SA has highlighted significant non-compliance with quidelines

 New South Wales only uses bollards with clear quidance on their use [although this is often not adhered to], which has been incorporated in the Austroads Guide to Road Design - Part 6A Paths for Walking and Cycling.

There are some emerging design concepts with taller and flexible plastic bollards which are more readily seen by path users and more forgiving in case of collisions.

In all cases, it is essential that the supportive signs and markings are applied in accordance with the documented quidance by Austroads and others.

### **O2** ATTACHMENTS

- 1. Department of Transport and Main Roads Queensland [2021]. <u>Traffic and Road Use</u> <u>Management (TRUM) Volume 1 Guide to Traffic Management, Part 6 Intersections,</u> <u>Interchanges and Crossings</u> [2020]. Section 9.2.2 and Appendix C.
- 2. Department of Transport and Main Roads Queensland [2020]. <u>Road Planning and Design</u> <u>Manual Edition 2: Volume 3, Supplement to Austroads Guide to Road Design Part 6A:</u> <u>Paths for Walking and Cycling</u>. November 2021. Sections 7.5.2 and 7.5.3.
- 3. Transport Canberra City Services (2018). <u>Standard Drawing ACTSD-0502-rev0. Vehicle</u> <u>Restriction to Trunk and Intermediate Paths Main and Local Community Routes, Inner</u> <u>Urban/Suburban</u>. September 2018.
- 4. Transport Canberra City Services (2021). <u>Municipal Infrastructure Standards 05. Active</u> <u>Travel Facilities Design</u>. September 2021. Section 4.4.7.







### DISCLAIMER

The views and opinions expressed in this document do not necessarily reflect those of any member of CWANZ. Although reasonable efforts have been made to ensure that the contents of this publication are factually correct, CWANZ does not accept responsibility for the accuracy or completeness of the contents.

## ACKNOWLEDGEMENT OF COUNTRY

CWANZ acknowledges the Traditional Owners of the land on which we meet and work, and all Traditional Owners of country throughout Australia and New Zealand. We recognise Aboriginal and Torres Strait Islander peoples' continuing connection to land, place, waters and community. We pay our respects to their cultures, country and elders past and present. We also recognise the Māori as tangata whenua and Treaty of Waitangi partners in Aotearoa New Zealand.

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