



# 5 Trends in Bicycle Planning

The importance of bicycles as an alternative to motor vehicles is increasing as congestion and carbon emissions become more pressing concerns across the Australian landscape, while our sedentary lifestyles have overtaken smoking as the primary health risk.

Many of the biggest impediments to the adoption and increase in bicycle and pedestrian trips derive from the existing road infrastructure. Simply, much of the road network has been designed historically to facilitate car usage. This has created a circumstance where cyclists and pedestrians often find themselves in unsafe conditions irrespective of the current road rules. As a result, this feeds a perception is that cycling and walking are either unsafe, or impractical in the current environment.

Circumstances are changing. There has been an increased emphasis on improved Traffic Planning for bicycling and pedestrians on our road network where they share roads with cars as well as providing alternate routes which have separation from vehicles allowing faster, safer trips.

GTA has been at the forefront of looking at concepts which increase the safety and amenity for travelling cyclists. This paper looks at 5 concepts which have been designed to improve the lot of cyclists and pedestrians in urban and rural environments.

## Bicycle Boulevards – Safe, Active, Green Streets

Bicycle boulevards provide a safer travel environment for cyclists. Using integrated road marking and signage, Bicycle Boulevard highlight that there are bike riders in the area and that road users need to share the road safely.

Typically Bicycle boulevards are designed for local traffic such as short to medium length trips on bikes to schools, train stations or shops. However, GTA research undertaken by GTA, in QLD, WA and SA, suggests there are opportunities for application in busier streets.

The aim of Bicycle boulevards is to provide bike riders with:

- Safe and comfortable bike routes, supported by traditional traffic calming where required
- Reduced speed limit of 30km/h
- Intersections which are designed reduce the need for bike riders to stop frequently and are much safer for riders to cross, and
- An easy, on-street link to local destinations or major bike routes.

GTA has delivered Bicycle Boulevards plans in WA and SA. Construction of one of the Perth projects has commenced and the other will start soon.

⊕ For more information on the work done by GTA on bicycle boulevards in Perth: Check the WA DOT Website.

[www.transport.wa.gov.au/activetransport/safe-active-streets-program.asp](http://www.transport.wa.gov.au/activetransport/safe-active-streets-program.asp)

## Pedestrian and Bicycle Friendly Roundabouts

GTA research for the Queensland government indicates Australian roundabout design does not necessarily cater well for the active modes.

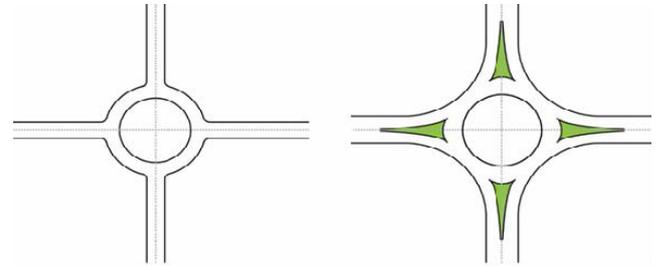
There are, however, a host of opportunities to make things better.

One of the solutions is the conversion of a standard, "tangential" roundabout to a European style "radial" roundabout. Tangential roundabouts are extended and allow for increased speeds through the roundabout. This increased speed directly affects cyclist's safety.

Radial roundabouts (also known as compact roundabouts) are far tighter for the driver which means that cars are far more likely to slow down than on tangential roundabouts. This necessarily is likely to cause fewer, incidents at much lower impacts.

Preliminary research by the South Australian government in the lead up to GTA's work on the SA Bike Boulevard indicates significant reductions in car speeds thus providing a much

safer walking and cycling environment. Conversion costs were relatively low, including mainly adjustments to existing concrete islands and kerb extensions.



European roundabouts employ a radial design<sup>1</sup> (left) rather than a tangential design<sup>2</sup> (right) used on Australian roundabouts. The tangential design allows for too much visibility and encourages drivers to speed through the roundabout.

## Separated Cycleways

Separated Cycleways are now starting to become familiar in many parts of the country, with examples in most Australian. The cycleways were first introduced in inner urban environment and are slowly advancing into the suburbs.

Separated Cycleways use kerbs, parking lanes and verges to form a physical separation between car and bicycle traffic, over and above differential line markings.

GTA has been actively involved creating separated cycleways in many projects, with one of the best examples being the Bourke St separated cycleway in Sydney.

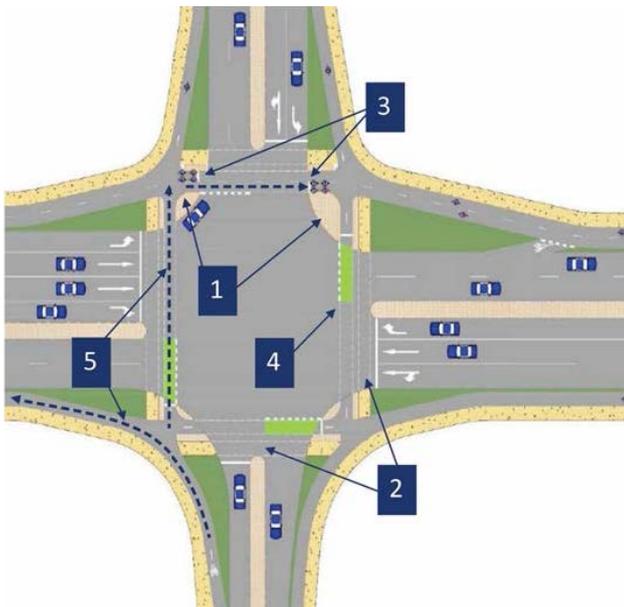
GTA has recently assisted the Queensland government with the development of a design guide, noting the most recent edition has adopted a new term – cycle track – in recognition of its unique role in the transport network.



## Protected Intersections

As the implementation of separated cycleways progresses around the country, there is a need to better manage signal controlled intersections.

A particularly interesting detail is the concept of "protected intersections". Protected intersections extend separation from cycles to vehicles through an intersection by creating buffer zones between cars and pedestrian/cyclists.



This concept has been nicely documented on YouTube:

- <https://www.youtube.com/watch?v=FIAbxLz6pA>
- <https://www.youtube.com/watch?v=LXqEqqUVVLY>

The Queensland Separated Cycleways Guideline confirms the concept can be readily and legally adapted for Australian conditions.

### Features include:

1. Corner 'safety' islands protect pedestrians and bicycles from turning cars acting as buffers as well as increasing visibility and shortening the crossing length
2. Bicycle and pedestrian crossings are set back from the intersection
3. "Forward Holding Lines" for bicycles - these allow the cyclist to move out into the intersection safely, giving them a 'head-start' against vehicular traffic
4. "Give Way" lines for cars - these afford priority to bicycles without changes to the road rules
5. Turning into the adjacent bike path can be done while safely remaining on the bike path. Turning into the opposite bike path requires a two-step approach, effectively crossing the intersection twice before moving on. This requires bicycle-friendly signal phasing<sup>1</sup>.

## End-Of-Trip Facilities

As the cycling network expands, there is an increasing need for End-of-Trip facilities, not just on-street parking but also long term secure off-street parking, showers and lockers.

GTA has been at the forefront in developing a range of design instruments to facilitate this process, including:

- The new Australian Standard – 2890.3:2015 Bicycle Parking, which was released last year
- An update for the Austroads Guide to Traffic Management, Part11 – Parking, which was published recently and is now available from the Austroads website
- The related Austroads Research report, which is also available from the Austroads website
- The ACT End-of-Trip Facilities General Code and related design guide – these are due imminently

## How we can help

GTA has a proud tradition of developing bicycle and pedestrian traffic solutions as well as considerable expertise and knowledge of trends worldwide.

 To discuss any of these concepts and many others please contact one of our Active Travel specialists.

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