

COMMUTER CAR PARKING IN NEW SOUTH WALES

Organisation:

Name: Amy Gillett Foundation

Position:

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Attention: Eleni Petinos MP
Committee Chair,
Committee on Transport and Infrastructure,
Parliament House, Macquarie Street
Sydney NSW 2000
Lodged via: parliament.nsw.gov.au/commutercarparking

Dear Chair,

Response to New South Wales Parliamentary Inquiry into Commuter Car Parking

Thank you for the opportunity to provide a submission to the New South Wales Legislative Assembly Committee on Transport and Infrastructure's Inquiry into Commuter Car Parking. The Amy Gillett Foundation (AGF) has a direct interest contributing to the conversation about commuter car parking, particularly as it relates to access to public transport and road safety.

As identified in the Committee's media release, public transport provides a range of benefits to increasing the efficiencies of the way we move in our communities. However, for these gains to be realised, we need to be able to access public transport stations and stops safely. The AGF encourages the Committee to consider access to public transport in broader terms than private motor vehicles and to consider the safety of active transport. Providing safe access for people to cycle to public transport will have the added benefit of increased access to public transport for a lower cost in land and building space than providing parking for motor vehicles.

Across the public transport network, unless priority is given to encouraging alternative means of travel to public transport, it is unlikely there will ever be enough car parking spaces to satisfy demand. Decades of prioritising space for car parking, particularly around train stations, has led to induced demand, as the users of parking have not been required to meet the full cost.¹ This is unlikely to abate with continued population growth and increased urban housing density.

In this submission, we recommend that the focus should be on encouraging alternative means of travel to public transport, such as cycling and walking, and that government policy is directed at providing a safe and accessible environment for doing so. This involves rethinking how we move in our communities and how changes recommended by the Committee in this inquiry can maximise public transport access as well as health and environmental benefits by contributing to safer communities. We also recommend that the NSW Government ensures the safety of vulnerable road users such as cyclists is prioritised over convenience in the planning and construction of any facilities.

We look forward to the next steps in this process. Please do not hesitate to contact me directly if you have any questions or require any additional information.

Yours sincerely



Phoebe Dunn
Chief Executive Officer
Amy Gillett Foundation

Amy Gillett Foundation

The Amy Gillett Foundation (AGF) is a national organisation with a mission to reduce the incidence of serious injury and death of bicycle riders in Australia. We draw on evidence and international best practice and collaborate with governments, business and the community to create a safer environment for cyclists, while maintaining an efficient road network for all road users.

AGF responses to Terms of Reference

The response to the Terms of Reference of this Inquiry focuses on two specific terms which are interrelated and are addressed together below. These two terms are:

- d) Consideration of alternative modes of first mile/last mile travel, including point to point transport, active transport and on demand buses; and
- e) Any other related matters.

The benefits of cycling for transport are well-documented and include both personal fitness, social and health benefits and community level economic and environmental benefits.^{2,3} Bicycles are part of the solution to improved access to public transport, particularly the journey from home to public transport. Bicycles can extend the reach of a public transport network and provide flexible, independent, door-to-door transport options for those members of the community who are able to ride a bike.

Bicycles are especially suitable for short trips and can help to relieve the pressure for car parking and further government investment in parking at train stations where available land is limited. Regular bike riding, even for very short trips, can help to normalise cycling as a viable transport option.

Examples from Europe show that people are willing to cycle further (up to 2km) compared to walking (<1km) to connect to a train station.⁴ The New South Wales government has published the bicycle facilities guidelines which describe the bicycle network feeding to public transport as a radius of 2.5km or 10 minutes of comfortable cycling. Figure 1 is the map from the guidelines which illustrates the catchment and the current and future bicycle routes.⁵ While in Melbourne, people who are already riding their bike to the train station report riding up to 5.5km to the station.⁶ However, action is needed to support people to shift from their car to their



Figure 1. Walking and cycling catchment, NSW guidelines

bikes when accessing public transport, including by making it safer to do so.

Safer streets are more active streets

Improving the safety of travelling by walking or cycling in the streets surrounding public transport stops/stations will have a direct impact on increasing active transport as well as improving safety for existing users. Concern about safety is the major barrier to cycling in Australia and must be addressed if we are to support people to ride.

The Safe System approach underpins road safety in Australia. Figure 1 illustrates the Safe System in Australia. Action in relation to safe roads and safe speeds are fundamental to safer cycling in proximity to commuter parking.

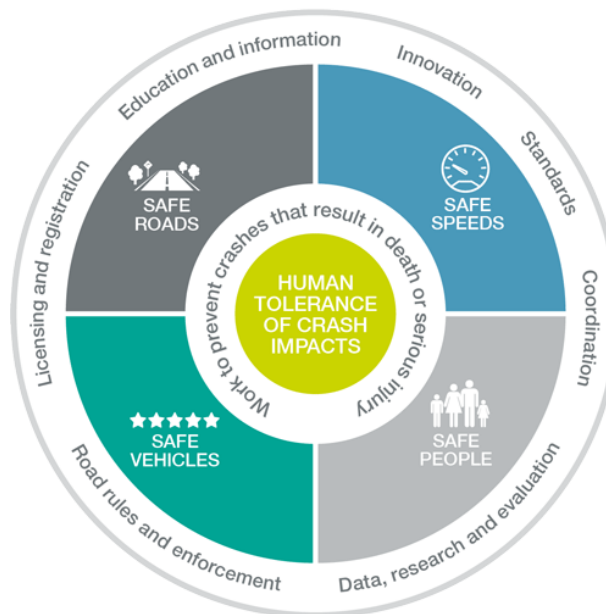


Figure 1: Safe systems principle interaction. Source (Transport and Infrastructure Council, 2010b)

Recommendations

The Amy Gillett Foundation recommends that the Committee include the following recommendations to the NSW Government in their final report:

1. The NSW Government, and where relevant local governments, maximises safety for active transport in the streets surrounding train stations within a 2km radius. This action should include traffic calming measures, cycling infrastructure that connects neighbourhoods directly to the train station, short cuts for cyclists to create the most direct route and ensuring that where on-street parking is permitted, the risks of door opening into the path of cyclists is minimised.
2. The NSW Government, and where relevant local governments, reduce the speed limit to a maximum of 40kph in local streets in the vicinity of train stations.

Maximising parking at train stations – add more bike parking

Experience from other states in Australia shows that adding commuter parking at train stations is an expensive exercise. For example, there are significant parking congestion issues at many train stations in Melbourne as demand exceeds available spaces. Commuters will often park illegally in areas not designated for parking and there has already been investment in additional car parking spaces.

Additional car parking spaces have been built across the metropolitan train network in Melbourne. Recent research at Monash University⁷ has provided the breakdown of costs:

Vehicle-based access solutions to accommodate rail patrons are expensive. At ground level parking space can cost up to \$10,000 and the cost increases significantly for multi-level structures.⁸ The Victorian state government is currently constructing a new multi-story parking complex at one metropolitan Melbourne station (Syndal on the Glen Waverley line) to provide an additional 250 spaces at a cost of over \$10 million – equating to a capital costs of approximately \$40,000 per space.⁹

At some locations in New South Wales, consideration may be given to multi-story parking to cater for motor vehicles. If this is being considered, the provision of bicycle parking should be incorporated as part of the new development. Further planning around any such car parking must prioritise the safety of vulnerable road users to ensure their safe access to the public transport facility is not compromised.

However, compared to car parking, bicycle parking is significantly cheaper to install and requires a fraction of the land space.

Fully secured bicycle parking at the most expensive option. For an investment of approximately \$12,000 a fully secured bike cage can be installed in an open car park in the same space as required for 3-4 car parking spaces. With capacity to store up to 26 bicycles, these storage facilities require an investment of approximately \$3000 per bicycle. By comparison, the installation of bike hoops offers a cheap solution that requires little land space.

New South Wales

The New South Wales Bicycle Guidelines issued by the Road and Traffic Authority in 2005 and updated in 2011, provide information on facilities for bicycle transport in New South Wales. The guidelines include specifications for provision of bicycle parking at public transport stations and interchanges.

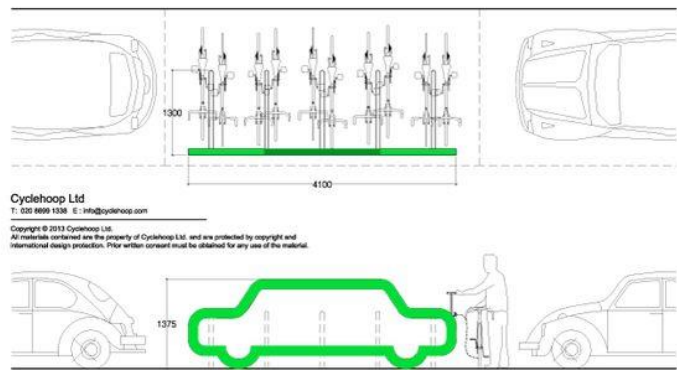
Train stations are considered high demand locations and require bicycle parking for more than 20 bicycles. Recommendations include high volume bicycle rack installation, frames that hold two bicycles at once and low-cost bike hoops. The section of the guidelines relating directly to public transport stations has been included at the end of this submission.

1 car space = 10 bikes

Bike hoops at \$150-300 each, is one of the cheapest options for bicycle parking. For an investment of less than \$2000, parking is available for 10 people in the same space allocation as for one car (see Figure 2).



Source: M Johnson, 2017



Source: PSFK.com

Figure 2. Bicycle parking hoops – 1 car space = 10 bikes

Recommendations

The Amy Gillett Foundation recommends that the Committee include the following recommendations to the NSW Government in their final report:

3. The NSW Government invest in ensuring there are more than 20 bicycles parking spaces at all train stations across New South Wales in accordance with the current guidelines.
4. The NSW Government ensure the safety of vulnerable road users is prioritised in the planning and construction of any commuter parking facilities.

11. Bicycle parking and access to public transport interchanges

Table 11.1: Scope of Section 11.

Type of facility	Coverage in <i>Austrroads - Part 14</i>	Coverage in these Guidelines
Bicycle parking facilities	10.3.5 Types of parking devices	11.1 High volume on-street bicycle parking installations
Bicycle network access to public transport stations and interchanges		11.2 Bicycle network access to public transport stations and interchanges

Section 10 of *Austrroads Guide to Traffic Engineering Practice, Part 14 – Bicycles* and the Australian Standard AS2890.3 provide general coverage on bicycle parking and end of trip facilities and installations suitable for low volume parking installations (less than 10 U-rail racks) suitable for most main street and trip generating locations.

The section below provides additional coverage for bicycle parking provision at large shopping centres, schools, railway stations, public transport interchanges where the bicycle-train/transit combination is actively promoted and encouraged and a higher demand for parking is expected.

A coverage of the issues relating to the provision of bicycle parking facilities and network routes to feed public transport interchanges is also provided at the end of this section.

11.1 Medium volume bicycle parking installations

In situations where there is a medium volume demand for bicycle parking (10-20 bike parking spaces), and space is at a premium, alternative arrangements and guidance to that provided by AS2890.3 and *Austrroads – Part 14* should be considered. This is particularly applicable in urban areas and in developments such as undercover parking stations, shopping centres schools, educational institutions, sporting complexes and at bus or rail interchanges where the floor space available for bicycle parking is limited and user demand is substantial.

Application

In medium demand locations, the generous mounting centres recommended by AS2890.3 and *Austrroads – Part*

Figure 11.1: Medium volume bicycle parking installation.

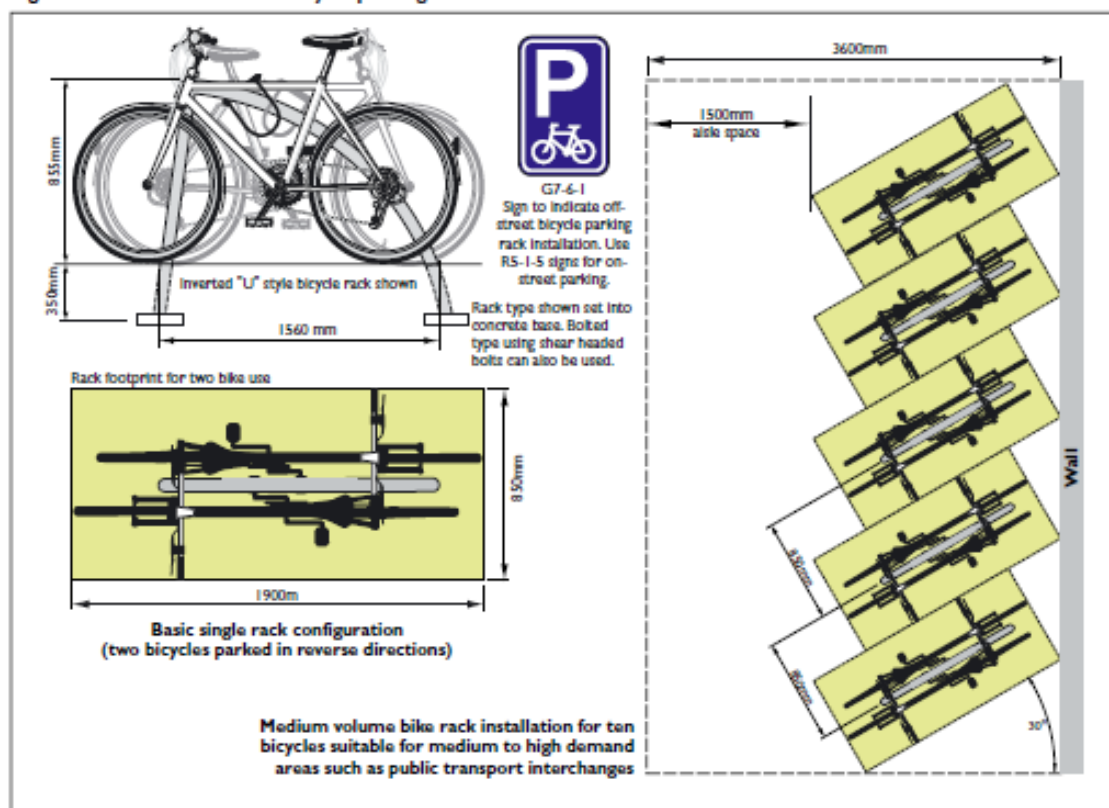
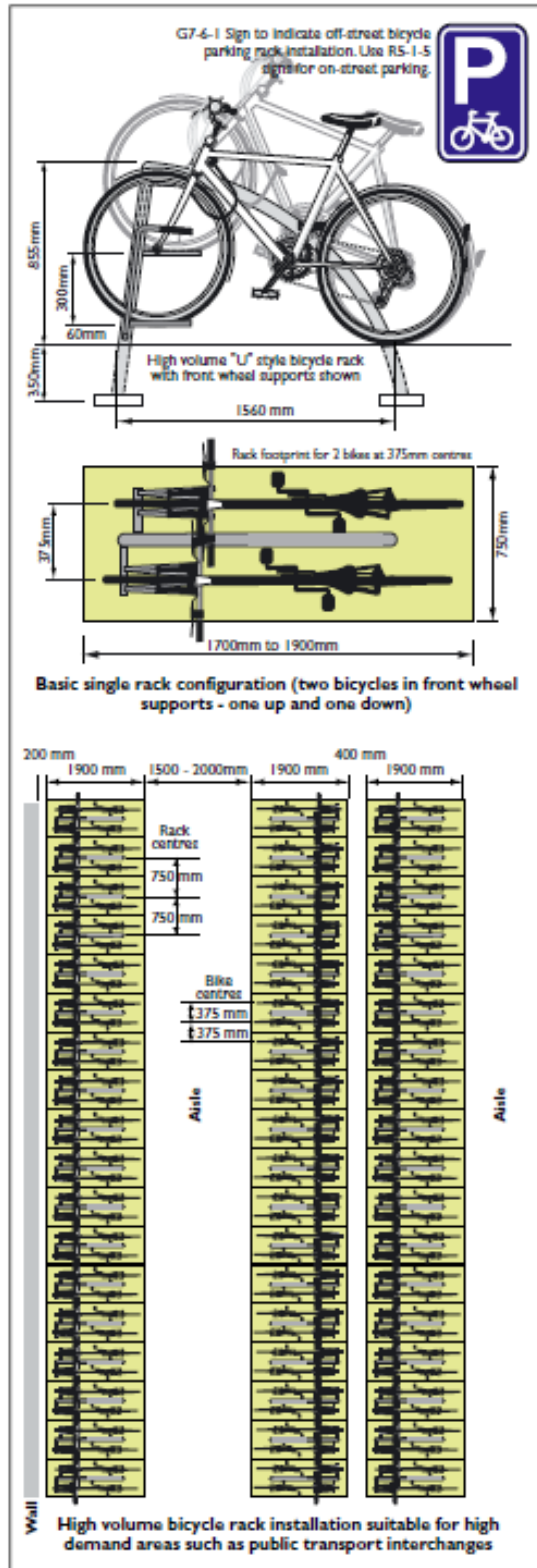


Figure 11.2: High volume bicycle parking installation.



14 for U-rails and other types of bicycle rack systems may result in a shortfall in the provision of parking facilities or an excessive or wasteful use of floor space.

Design notes

Figure 11.1 shows recommended 850mm mounting centres and layout arrangement for a bicycle parking installation suitable for medium demand bicycle parking installations (10-20 bicycle parking spaces). This type of rack mounting configuration allows the user to securely lock the bike frame and at least one wheel to the rack using a high security U-lock or cable.

An essential requirement of this type of installation is that the racks be mounted at angles of between 15 and 45 degrees. This angled mounting reduces conflicts between adjacent handlebars and pedals. Angle mounting of the bicycle racks also reduces the depth of this footprint and enables more bicycles to be stored within a given space.

This bicycle rack mounting layout method uses approximately 30% less space than standard U-rails mounted at 1200mm centres.

11.2 Bicycle parking installations at transport interchanges

In high demand locations (more than 20 bicycle parking spaces) such as railway stations, bus transit stations and other types of public transport interchanges, the wide mounting centres recommended by AS2890.3 and Austroads – Part 14 for bicycle rack systems may result in a shortfall in the provision of parking facilities or an excessive or wasteful use of floor space.

Design notes

Figure 11.2 shows recommended mounting centres and layout arrangement for a high volume bicycle parking installation suitable for railway stations and transport interchanges. This type of storage method is commonly used in European stations and public transport interchanges and allows the user to securely lock the bike frame and at least one wheel to the rack using a high security U-lock or cable.

For parked bicycles to be effectively stored using this scheme, a special type of rack must be used. These racks are mounted at 750mm centres and support the front bicycle wheels above the ground. Each alternative bicycle is mounted higher than the one next to it. This arrangement ensures that handlebars do not conflict. Due to the closeness of storage centres, angle-mounting of bikes is not recommended as it makes the racks difficult to use.

This bicycle rack mounting layout method uses approximately 40% less space than standard U-rails mounted at 1200mm centres.

11.3 Bicycle network access to public transport stations and interchanges

Public transport cannot function effectively without some other method of transport before and after transit as very few transit patrons live right at their origin stop, or travel to a destination next to their final stop or station. The purpose



Photo 11.1: Bicycle locker installation at Liverpool Railway Station.

of providing for bicycle-plus-train travel should be to make it easier for a person to access the station from a greater distance than by walking. People living within a comfortable walking distance are unlikely to use a bike to get to the station, as their trip is quicker and simpler without a bike. Using a bicycle for shorter trips (under 5 minutes) involves comparatively extra effort (adjusting clothing for riding, securing luggage, fitting helmet, lights at night, wheeling out of garage or house, getting into parking area, finding vacant rack or locker, locking bike and securing belongings etc) compared with walking.

However, riding a bicycle over about 5 minutes to a station involves less physical effort than walking, so the decision to ride to the station is a trade-off and is only made when the advantage of travelling the extra distance for less physical effort outweighs the other aspects of bicycle usage. Therefore it is important to consider all these aspects so that the bicycle park 'n' ride experience is made as easy, comfortable and convenient as possible.

Design features of good bicycle parking

The major issues relating to the provision and location of bicycle park 'n' ride facilities at public transport interchanges stations are:

- Storage areas need to be open and attractive and in easily supervised areas that feel safe and non-threatening and have good active and passive public surveillance to deter acts of vandalism and theft (away from roadways and dead-ends);
- Bicycle parking facilities need to be sited as close as possible to the station platform entrance(s) with a maximum walking distance from parking facilities to station entrance less than 100m;
- Bicycle facilities need to relate to the travel requirements of the user (lockers for regular commuter use and racks for rapid access short term use);
- Bicycle parking racks need to be located under cover and out of the weather;
- Bicycle parking facilities need to be easy to find, well signed and marked;
- Racks and lockers need to be easy to use and have

Figure 11.3: Bicycle network feeding public transport.



helpful signage to assist new users to understand the method of use;

- Bicycle parking areas need to be well lit and ventilated;
- Bicycle riders need to be able to access the parking facilities easily and quickly from bicycle network feeder routes;
- Bicycle parking areas need to be designed for quick and easy maintenance and kept clean along with surrounding station areas on a regular basis; and,
- Bike storage areas should not obstruct traffic flows from either pedestrians or motor vehicles.

Where bicycle parking facilities are located on the opposite side of the railway line to the main station entry/exit,



underpasses or overpasses should be designed to provide a well-lit and attractive passageway preferably with ramped access. If existing stairways are used these should be fitted with grooved wheeling ramps at both edges to facilitate bicycle access.

Recommendations for provision of bicycle parking facilities

Design phase

- Cycle parking should be located where there is good active or passive public surveillance. The prime concern of users is theft and damage. If a rider has their bicycle stolen or vandalised at a station parking area it is highly likely that they will abandon this form of use of the system.
- Cycle parking should be coordinated and planned as part of local and regional bicycle networks. Additional local routes should be developed to connect stations to established regional and major local routes on the bicycle network, as well as to local trip attractors and popular destinations.
- Access to bicycle parking facilities from local and regional bicycle routes should be planned to enable safe and easy travel from anywhere within the station cycling catchment (see Figure 11.3);

- Cycle parking should 'look' like it is an integral part of the system. It should appear to the user that they are encouraged to ride to transitway stations and are a welcomed user of the system.

Operational phase

- Supervision of the bicycle parking area should be considered as an integral part of the overall station precinct security.
- Bicycle parking should be promoted as a key element of the transport system and cycling to stations as an attractive and 'smart' way of accessing the system.
- Train/bus timetable, route information etc should show the location of bicycle parking facilities and on the racks themselves, an explanation of how to use these facilities.
- During the initial 'ramp-up' operational period the use of bicycle parking facilities should be monitored and additional demand met quickly if this is within predicted future capacity.
- Regular monitoring, cleaning and maintenance of bicycle facilities should be undertaken as part of the normal security and upkeep operations of the stations and their environs.

¹ Næss, Petter, Morten Skou Nicolaisen, and Arvid Strand. "Traffic forecasts ignoring induced demand: a shaky fundament for cost-benefit analyses." *European Journal of Transport and Infrastructure Research* 12.3 (2012): 291-309.

² Pucher, J. and R. Buehler, *Making Cycling Irresistible: Lessons from the Netherlands, Denmark, and Germany*. Transport Reviews, 2008. **28**.

³ Oja, P., et al., *Health benefits of cycling: a systematic review*. Scandinavian Journal of Medicine & Science in Sports, 2011. **21**(4): p. 496-509.

⁴ Krygsman, S., Dijst, M., & Arentze, T. (2004). Multimodal public transport: an analysis of travel time elements and the interconnectivity ratio. *Transport Policy*, 11(3), 265-275.

⁵ Roads and Traffic Authority. (2011) NSW Bicycle Guidelines. www.rms.nsw.gov.au/business-industry/partners-suppliers/.../nswbicyclelev12aa_i.pdf

⁶ Rose G, Wiliwitiya H, Tablet B, Johnson M, Subasinghe A. (2016) Bicycle access to Melbourne metropolitan rail stations. Australasian Transport Research Forum Proceedings. 16-18 November, Melbourne.
http://atrf.info/papers/2016/files/ATRF2016_Full_papers_resubmission_122.pdf

⁷ Mead, D., Johnson, M., & Rose, G. (2016). Factors Influencing Variability in the Usage of Secure Bicycle Parking at Railway Stations in Melbourne, Australia. In Transportation Research Board 95th Annual Meeting (No. 16-3283)

⁸ Martin, S. and den Hollander, J., *Parkiteer - Secure bicycle parking at transport nodes in Melbourne*, in *Australian Transport Research Forum*. 2009: Auckland, New Zealand.

⁹ Carey, A., *Commuters stung by lack of space*, in *The Age*. 2013, Fairfax Media: Melbourne.