

Appendix 10. Relevant Design Principles

Regional Design Principles

The M2 cycle lane provides a regional route in terms of coherence, directness, safety attractiveness and comfort. Any alternate route must match the existing M2 shoulder lane in these parameters.

Cycle usage in this corridor is increasing in line with Government policy on promoting cycling in Sydney and will become more even more attractive as facilities expand, petrol prices rise and cycling becomes the social norm. Cycling on the M2 is "regional cycling" with cyclists wanting fast continuous cycling for exactly the same reasons that motorists want the same in roads. This is even more important for human powered vehicles than motor vehicles, because cyclists personally suffer from steep hill gradients and loss of momentum at stoppages.

The M2 is the enabler for the cycling which otherwise could not occur in this area. Without matching the regional design principles the any interim detour route would result in a massive reduction in cycling. Regional cyclists won't use a route unless it matches the design principles from the NSW Bicycle Guidelines, version 1.2 July 2005, published by the RTA (copied below)

Table 3.1: Key design principles of the bicycle transport system.

| Principle | Criteria | Design considerations | | |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------|
| | | Regional routes | Local routes | Mixed traffic streets |
| Coherence | Continuity of routes | No breaks in route | Connect to regional route | Easy access to local routes |
| | Consistent quality of routes and facilities | Minimal quality changes | Minimal quality changes | N/A |
| | Easy to follow | Regional route signage | Local route signage | All street signs visible |
| | Freedom of choice of routes | Choice of at least two | Choice of at least two | Less than 250m to a route |
| Directness | Efficient operating speed | 50 km/h design speed | 30 km/h design speed | Consistent with street design |
| | Delay time | 15 sec/km | 20 sec/km | 20 sec/km |
| | Detour factor * Detour factor is the relationship between the most direct distance between origin and destination and the distance taken by the actual route taken. A detour factor of 20% means that the route will be 20% longer than the distance as the crow flies. | 20%* | 30%* | 40%* |
| Safety | Minimum risk of accident on routes | Monitor use of facility and | Monitor use of facility and | Monitor use of facility and |
| | Minimum risk of conflict with car traffic | investigate any links between accidents and design. | investigate any links between accidents and design. | investigate any links between accidents and design. |
| | Minimum risk of unsafe infrastructure | | | |
| Attractiveness | Support for the system | Public support and ownership | Public support and ownership | N/A |
| | Attractiveness of environment | Well lit and open appearance | Well lit and open appearance | N/A |
| | Perception of social safety | Minimum reports of vandalism & harassment | Minimum reports of vandalism & harassment | N/A |
| | System attractiveness | Coordination of all supporting system elements (maps, fittings, signage etc) | Coordination of all supporting system elements (maps, fittings, signage etc) | N/A |
| Comfort | Smoothness of ride (Refer to Austroads - Part 14 Section 8.5) | Smooth riding surface | Smooth riding surface | Smooth riding surface |
| | Comfortable gradient | Steep climbs minimised | Steep climbs minimised | N/A |
| | Minimum obstruction from vehicles | Minimise illegal parking | Minimise illegal parking | N/A |
| | Reduced need to stop - number of stops (average per km) | 0.5 | 1.0 | 1.5 |
| | Protection from adverse climate | Shade trees and wind | Shade trees and wind | N/A |

Separation of Bicycles and Motor Vehicles

The designers of the proposed interim cycle detour for the M2 have not taken into account the need for separation from motor vehicles depending on the road conditions. The NSW Bicycle Guidelines provides an excellent guide (copied below) which shows what is needed.

The on-road sections of the proposed route required the installation of bike lanes and the reduction of speed limits to match the guidelines. Without this, the facility will NOT be used by most cyclists who will find the route too intimidating and they will effectively be terrorised off the road by car, buses and trucks.



Figure 3.2: Separation of bicycles and motor vehicles according to traffic speed and volume.

