



DISTRICT COUNCIL OF MT BARKER

SHARED PATHWAY AND CYCLE WAY DESIGN & CONSTRUCTION SPECIFICATION.

JULY 2009

SHARED PATHWAY & CYCLE WAY DESIGN & CONSTRUCTION SPECIFICATIONS

INTRODUCTION.

The District Council of Mt Barker have included as part of their Transport Master Plan the desire to increase walking and cycling, use of public transport and correspondingly to reduce the reliance on the private motor vehicle.

This has arisen for a number of reasons, including environmental and sustainability measures, but increasingly related to issues of community health and well being.

Pedestrians and Cyclists whilst equally being more susceptible and vulnerable to accidents than occupants of motor vehicles, differ greatly from each other in terms of speed of travel, ability to take evasive action and the nature of the movement activity, which in most cases is more likely to be of a social activity particularly for pedestrians.

The interaction between cyclists and pedestrians is more likely to make pedestrians less aware of the presence of other users and in particular cyclists, particularly whilst conversing with each other.

The continuing interaction between pedestrians and cyclists is steadily increasing which will exacerbate safety concerns. These safety concerns are increasing especially with the introduction of wheel chairs, gophers and powered scooters.

The more Council is successful in encouraging walking and cycling on commuter networks the greater the concerns with safety of these users will become and the more importance will be placed on good sensible design principles.

At the same time the population is aging which places greater pressure on the provision of safe pedestrian and cycling networks.

Pathways and footpaths are essential spaces in the transport network to support walking and cycling activities. If they are to continue to effectively support increased usage by both groups, management of shared use pathways, particularly where that results in actual or potential conflict will need to be addressed.

It is well recognised that moderate exercise which can be obtained from walking and cycling is known to provide health benefits including reducing heart disease, obesity, stroke & diabetes among others. In addition the use of walking and cycling as transport modes can substitute a number of car journeys undertaken such as trips to school and shops which leads to better air quality and sustainable land use planning.

For this reason Council is encouraging more residents to utilise the alternate transport option.

If Council is to continue to encourage participation in walking and cycling then it must provide areas where cyclists and pedestrians can travel safely and they must be constructed to acceptable standards.

The development of shared use pathways should satisfy the following criteria :

- To be safe for all pathway users with disabilities and visual impairments.
- To be accessible from the main carriageways at junctions and have minimal give way points.
- To be based on genuine desire lines without detours.
- To be a convenient link between trip generators, attractors and other network elements.
- To be a well designed, attractive, comfortable and have a good riding surface.
- To encourage users to utilise the alternate transport mode.

The design specifications have not been developed to determine future network linkages and routes (Council's Recreational Trails Master Plan will provide these recommendations and should be read in conjunction with these design specifications.) but provide detail on the construction and support works features of trail design within the District Council of Mt Barker.

GENERAL

1. SCOPE

1.1 This specification sets out requirements to be used in the design of various types of cycle ways and pathways.

1.2 All relevant design principles contained in the Aust Roads Guide must be integrated in the design of cycle ways, pathways and associated infrastructure. This Guideline serves as a companion document to the Aust Roads Guide extended to incorporate basic requirements for pathways. ***AustRoads***

2. OBJECTIVES

2.1 This Guideline aims to set standards and document requirements related to the provision of cycle ways and pathways that encourage pedestrian activities and cycling for transportation and recreational purposes.

Cycle ways and pathways are to be safe and convenient and shall maintain a satisfactory level of service for all pathway users including users with disabilities and limited mobility.

2.2 In designing any new paths, the designer shall take into account the existing and proposed network.

2.3 Where required in Council's Road Hierarchy Plan or Council Bicycle Plan the designer shall provide for the inclusion of the appropriate cycle way or pathway. In making decisions about the extent or location of either the cycle way or the pathway network, the designer shall also consider the location of the existing and proposed network. ***Bicycle Plan***

It is Council's intention to provide long-term connectivity between existing cycle ways and pathways and extend the linkage of both paths. This will be included in Council's works and required by developments where required to conform to this aim.

2.4 Where access places are to form part of a pedestrian or bicycle network, access links should provide suitable connectivity with adjoining access places or open space systems to ensure such pedestrian and bicycle networks are functionally efficient. The minimum width of land that provides pedestrian or bicycle linkage is 15m.

2.5 The Designer must be familiar with cycle way geometric design requirements in terms of:

- width
- grade
- stopping sight distance
- change in grade
- horizontal curvature
- cross fall and drainage
- super elevation
- sight distance on horizontal curves
- appropriate treatments at the road / path interface

***Geometric
Design***

2.6 The Designer shall incorporate all the requirements for disabled access as appropriate for pathway design in accordance with any **Council Policy or Development Control Plan on Access and Mobility** and **AS Collection 005**.

***AustRoads
Guide***

2.7 Designers shall consider the best way to provide for the uninterrupted movement of cyclists and pedestrians at proposed and existing structures wherever possible. Structures include bridges and underpasses over rivers, roads or railways. The reference and source documents provide information on:

- acceptable widths and clearances
- types of cycle ways and pathways
- handrails and barrier fences
- bicycle bridges
- approach ramps

***Bridges
Underpasses***

3. SIGNAGE AND PAVEMENT MARKING

3.1 The Designer shall provide appropriate signposting design for cycle ways and pathways.

3.2 Signs and pavement marking will provide for the safe and convenient use of the facility. The signs and pavement marking will comply with the relevant Australian Standard.

Compliance

4. END OF JOURNEY FACILITIES

4.1 Consideration must be given to the design of adequate facilities at common destinations of cyclists and pedestrians so as to encourage cycle way and pathway usage.

Facilities

4.2 Such facilities should include:

- seats
- standby areas
- secure bicycle parking
- picnic facilities
- drinking fountains
- solar lighting

4.3 Bicycle parking installation design should meet appropriate criteria discussed in the Aust Roads Guide and be fabricated to meet AS 2890.3.

5. MINIMUM DESIGN STANDARDS

5.1 Notwithstanding the Reference and Source Documents referred to in this Guideline the following minimum standards as shown in Table D9.1 are to be complied with for off-road paths.

Minimum Design Standards

	Cycleway	Pathway	Shared Use Pathway
Path Width	2.5m	1.5m ¹ 1.2m ²	2.0m (absolute) 3.0m (preferred) ³ ₄
Formation Width	3.5m	2.0m	3.0m
Cross fall min. (preferred) max.	1:40 1:20	1:40 1:20	1:40 1:20

Note:

1. Full width bitumen path to be provided within defined areas within the City Centre area)
2. With prior approval only and required to match existing path widths
3. For off-road shared paths within road reserves
4. For shared paths within park and drainage reserves

Note : Where there is a high volume of cyclists, paths need to be wider and with good sight lines and edge clearance to avoid manoeuvres. The same also applies to high volumes of pedestrians. In these circumstances path widths should be modified to allow for increased movements and the widths be extended to either 4.0 metres or to a maximum of 6.0 metres depending on the potential volumes. All other construction criteria outlined within this specification must be adhered to.

The maximum longitudinal grade of any off-road cycleway shall comply with the relevant Australian Standard.

- 5.2 The designer shall ensure that design details for all cycle ways and pathways comply with the requirements detailed in Councils relevant standard drawing.
- 5.3 The wearing surface of all cycle ways and pathways **shall** be bitumen .Where the designer wants to propose an alternative treatment, they shall seek and obtain separate prior approval

Design criteria. (Minimum standard)

The design standard below has been established to cater for excessive soil movement of local soil profiles (especially adjacent to water courses) to protect the integrity of the pavement surface. .

Select fill must be utilized to build the trail to approximately 400 mm above natural ground level utilizing materials such as pit rubble.

- A) A 50mm layer of gritty sand is to be laid over the select fill.
- B) A 150mm layer of A grade rubble (compacted) to be placed onto the sand layer as the base course.
- C) A fibre deck course consisting of a single coat of 10mm is to be applied.
- D) The finished surface is to be a 25mm layer of 7mm bitumen.
- E) NOTE: An additional 50mm layer of Quarry sand may be required in areas of extreme soil movement as indicated by soil tests to reduce extremes of soil movement.
- F) A longitudinal grade of 2% is required along the length of the trail.
- G) The trail cross fall is to be a minimum of 1:40 and a maximum of 1:20. The trail may be alternately crowned in the middle and sloped to either side on a 1:40 slope.

6. DOCUMENTATION

6.1 The following listing outlines Council's minimum requirements for presentation of cycle way and/or pathway designs

- Plans for all cycle ways/pathways are to be submitted for approval
- The cycle way plan sheet may be incorporated into the road plan where clarity permits
- Longitudinal Sections will be required for all off-road cycle ways where grades exceed 4%.

- Cross Sections are to be provided and transition tables will be required where cross falls vary or super elevation is provided
- A typical cross section will be detailed to indicate pavement materials and layer depths

6.2 All drawings and documentation to be submitted to Council for approval shall conform to the requirements of Council's *Drawings and Documentation Guidelines*. A copy of these Guidelines will be made available upon request.

6.3 Failure to comply with Council's *Drawings and Documentation Guidelines* may result in the drawings and/or documentation being returned to the designer without consideration by Council.

7 SPECIAL REQUIREMENTS

7.1 All pedestrian and shared paths shall include tactile indicators in accordance with AS 1428.4 design for Access and Mobility – Tactile Indicators.

7.2 All cycle ways and shared pathways that lead to, or join, an existing or proposed public transport facility (such as a bus stop or taxi rank) shall comply with the Federal legislative requirements detailed in Disability Standards for Accessible Public Transport Guidelines 2004.

CYCLEWAY AND SHARED PATHWAY ELEMENT SPECIFICATION

1. **FURNITURE** – Picnic tables, these are to be placed no closer than 500 metres apart and to be located off trail within existing reserves or parks. The picnic setting comprises, integrated table and two bench seats. (Timber).

2. **SEATING** – Seating along the trail is to be installed no closer than 200 metres apart and to be located on a concrete pad adjacent to the trail. (In accordance with Bike SA Standards). There are two (2) styles of seating to be utilised along the Shared Pathway depending on their location being the

Central Business District, Township, and outer Township areas. These styles are Formal Style being the "Ballarat" to be utilised in Heritage areas and the "Park" seat and supplied by Innovation Engineering.

3. **LIGHTING** – The provision of lighting for the path network will be bollard solar lighting being Exilites 213 Solar LED being placed no less than ten (10) metres and no more than twenty (20) metres apart. The solar lights are to be located in designated dark areas that pose a potential risk to users and where the pathway meets intersections such as, bridges, poorly lit culverts, high use areas, junctions, underpasses and similar infrastructure. The lights are to be located adjacent to the path surface and not incorporated into the path surface.
4. **SAFETY FENCING** – Fencing is to be provided in identified high risk areas where there are significant drop offs by designated waterways, culverts and where there is potential for users to leave the sealed surface. The fencing should consist of mesh panels such as "Pool Style " being 2440 mm x 1200mm. Posts are to be galvanised 90 x90mm HW Maximum post spacing to be 2440mm.
5. **LINE MARKING** – Trail markings will include the use of shared pathway generic symbols and white dividing lines. Pavement markings are to be utilised to designate crossing points such as intersections, bridges and linkages. These symbols are to be utilised on all entry points to the shared pathway and must be placed a maximum of fifty (50) metres from the beginning or end of the trail. All line marking must adhere to current Australian Standards. Additional trail markings are to be located no more than five hundred (500) metres from the previous markings. White dividing lines are to be placed at all entry points and extend at least fifty metres along the trail. Additional lines are to be placed no less than two hundred metres from the previous markings and extend for at least fifty metres.
6. **SIGNAGE- INTERPRETIVE & DIRECTIONAL** - The provision of directional and advisory signage will be located at intersections, bridges and at strategic locations at each entry point to the shared pathway and be placed adjacent to the pathway and not located within the pathway surface. Directional signage is to be of timber bollard construction with carved directional arrows and advisory signs are to meet current Australian Standards.

Interpretive signage is to be strategically located at points of interest along the trail or pathway and are to be constructed of timber with anodised metal plaques and be located adjacent to the pathway.

7. **Bollards** – Safety bollards are to be constructed of timber with a minimum width of 100mm x 100mm with a checker plate cap. Bollards are to be placed around culverts to prevent accidental entry and to direct users of the trail around potential obstructions. To be placed where required.
8. **PEDESTRIAN BRIDGES**- The construction of pedestrian bridges shall be of a prefabricated design and be at least 3.0 metres in width along the

shared pathway. Bridges over spur trails or linkages can be narrower but not less than 2.0 metres in width. Bridges are to be of the "Mt Barker Walking Trail Steel Beam Bridge" construction (refer to design drawings). Bridges are to conform to current Australian Standards and Council's Engineering Standards. Board walks and similar structures must comply with Australian Standards and Council's current Engineering standards, (Refer to design drawings)

9. LITTER BINS – Bins are to have stainless steel tops and cowls and be of charcoal coloration. The bins are to be located at each end of the pathway or at intersecting nodes and not located along the length of the pathway. They should be located adjacent to the pathway to avoid vehicle damage to the pathway surface and to be easily accessed for collection.

10 DOG BAG DISPENSERS- Dog bag dispensers are to be located at each entry point to the pathway and be attached to timber bollards. Additional dispensers can be placed no closer than three hundred metres apart and be located adjacent to the pathway.

The provision of Shelters and Drinking Fountains are to be determined on an as needs basis according to need.