Horse Trail Infrastructure Guidelines

For peri-Urban precincts in Australia
ACKNOWLEDGEMENTS
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1. Introduction

This guide seeks to fill the information gap relating to horse specific information in existing technical resources dedicated to trail network planning, design, building and maintenance.

In the peri-urban context, horse trails link horse agistment properties with places to ride, so that residents can enjoy their horses, and meet the horse’s need for exercise and training for health and welfare reasons. These trails differ from the longer distance ‘destination’ experiences linked to tourism accommodation, adventure and cultural heritage.

Peri-urban trail networks are often opportunistic, a joined-up availability of many short sections under the care and control of a variety of entities, including local and state government agencies and private landholders. Trails may be formalised routes on roadsides, unmade road reserves, fire tracks or open space public areas. Recreational horse trails may also include regulatory or administrative permission applied to an existing cycle track, power or pipeline easement, footpath or railway crossing point even though there is no specific infrastructure. A further option includes arranged access to private land, where a government agency has a land use agreement, or the landowner has other legal instruments in place facilitating public use.

Trails closer to cities and regional towns are subject to the pressures of ongoing development, increased traffic and changed land use leading to pressure on public places to ride. This resource will be of interest to trail advocates working in these environments.

This document is a guide only, as there are no Australian Standards for horse trail or related infrastructure design. Ideally, experienced horse trail riders are involved in the consultation and planning phases along with public area planners and if required, engineers.

RECOMMENDED READING
• ACTSD 0600 Series Equestrian Facilities DRAFT (Australian Capital Territory, 2016a)
• Equestrian Design Guidebook for Trails, Trail Heads and Campgrounds (T & D Publications, 2007)
• Guidelines for the Planning, Design and Maintenance of Recreational Trails in South Australia (Recreation SA, 2016)
• Municipal Infrastructure Part 05 Standards Active Travel Facilities Design (Australian Capital Territory, 2016b)
• Recreational Horse Trails in Rural and Wildland Areas: Design, Construction, and Maintenance (Wood, 2007)
• The Australian Mountain Bike Trail Guidelines (Mountain Bike Australia Ltd., 2019)
• Unformed Public Roads Strategic Direction and Use Instruction Manual (Adelaide Hills Council, 2011)
2. Horses in the community

Horses hold a unique place in our contemporary society, having transitioned from their place alongside soldiers in war, farmers in the field and transporting people and products to market, toward a role much closer to our homes and family, with sport, human-horse therapies, and recreational pursuits including trail riding.

This change in use has coincided with an evolution in the societal-wide relationship with outdoors and nature. The opportunity to interact with large animals, from large breeds of dog, to horses, cattle and alpaca, has all but disappeared from a city-centric, internet enabled lifestyle. With this, there is anecdotal evidence of the increasing community’s disconnect with nature, and the associated understanding of sharing trails, roads and public spaces with the ridden or driven horse. Fortunately, community awareness raising is occurring through movements such as ‘Nature Play’, ‘nature bathing’ and nature-based geocaching to re-engage people with the outdoors. These movements informally utilise recreational trails, exposing participants to a wide range of outdoor pursuits, including horse trail riding.
2.1 ABOUT HORSES

Through understanding a little more about horses, trail planners are able to incorporate design features which assist horse riders and other trail users to enjoy the experience and stay safer.

Horses are described as a ‘prey animal’, with eyes positioned to the side, enabling viewing almost around their body. A characteristic of a prey animal is that when they feel threatened, their first reaction is ‘flight’, being to run away, jump sideways or perhaps throw their head up and away from the scary object.

Safer places around horses on the trail

Watch eye, ear and body language at all times. Horses with a high level of alertness will have their heads up, wide eyes and alert ears. Horse owners and other trail users can learn to watch the body language of horses to gauge the level of relaxation. A relaxed horse will have a lower head carriage, ears slightly forward or sideways and rhythmic walk.

In relation to horse trail infrastructure, one of the key design considerations is to allow enough space for a horse to stop, turn around or otherwise not feel too confined.

Note: This information is a guide only
2.2 HORSES REQUIRE SPACE

Horse riders require more space that cyclists or walkers to manoeuvre past other trail users, and around trail infrastructure, signage and street furniture.

If a local trail planning project team have not had much practical experience with horses, it may be possible to arrange a visit to a local riding centre. The horse supervisor can explain different horse behaviours and reactions and arrange for team members to lead a horse.

Team members will have the opportunity to notice how much space is required to tie a horse up and walk around; the space needed when people pass a moving horse travelling in the opposite direction, and the space required to go through a gate and under a tree branch. It may also be possible to inspect the riding centre’s horse float, noting how much room is needed to lower the tailgate and tie up a horse to the side.

The provision of enough space for horses contributes to safer trail experiences for all users. These diagrams are a general guide as to how much space a horse needs, and as with all trails design, planners will need to adapt to suit local conditions.

*Typical horse dimensions.*

*Single track recreational trails which allows for horse riders.*

Trail design will need to include pull-out and pass nodes.

*Shared-use trail.*

Note: where no vegetation, fencing or other barriers exist each side of the trail (open space only) the trail tread can revert to a minimum width of not less than 60cm.
3. Trail user safety

Peri-urban trails close to housing estates are more likely to be utilised by families and beginner cyclists, and by horse riders who may have limited experience. Horse agistment centres closer to urban areas enable first-time owners to keep a horse, participate in local horse club activities and ride around the neighbourhood. Fortunately, conflict on trails between horse riders and other user groups is not prevalent. Where there is a narrow section of trail or bridge or another pinch point within a corridor, designers must always look for innovative, site-specific opportunities to promote safety and positive trail user interactions. Good sight lines, areas to pull over for other users to pass and well-maintained routes alleviate issues. Technical trail planning and design manuals address safety through design.

Other types of conflict may include trail users entering vineyards to take photos or paddocks to pat lambs, raising concern around biosecurity and animal welfare, or groups of trail users on country roads riding in an ad hoc fashion, when in fact the road rules apply.

All trail users will benefit from opportunities initiated by land managers and local clubs to provide trail related skills instruction, educational open days and shared use information online, in hard copy and on-trail signage.

Another type of trail user are commercial operations leading out group rides or conducting events. Businesses and many non-profit organisations are considered a PCBU under the relevant Workplace Safety Act. The SafeWork New South Wales Code of Practice for Managing Risks when New or Inexperienced Riders or Handlers Interact with Horses in the Workplace clearly explains WHS responsibilities. The Code complements a national SafeWork Australia Guideline for interacting with horses, and the Australian Adventure Activity Guide for Horse Riding. While there are no direct references to trail infrastructure design features, these documents provide context and information for trail users.

REFERENCES:
- Australian Trail Horse Riders Association Code of Conduct (2016)
- Guide for Horse Riding (Australian Adventure Activity Standards, 2019)
- Code of Practice for Managing Risks when New or Inexperienced Riders or Handlers Interact with Horses in the Workplace (New South Wales Government, 2017)
- Guide to Managing Risks when New or Inexperienced Persons Interact with Horses (SafeWork Australia, 2014)
4. Environmental management

Trail design promotes sustainable use of the environment, including utilising opportunities to introduce the community to the ‘how’ and ‘why’ of responsible, active outdoor activities.

Well-sited recreational trails have a positive impact or ‘gain’ for the environment, through measures such as controlling water runoff and segregating areas for native vegetation regrowth. Overarching design principles applied to cycle and walking trails are applicable for trails allowing horse riding.

In this section, we will briefly look at aspects relating to water and manure management.

4.1 BUFFER ZONES AND WATER QUALITY

Trail design includes built-in features to manage trail water off and away from the trail surface, as an aid to prevent erosion. Water moving off the trail can be further filtered through high-quality vegetation and managed by low-impact landscape features, for example, swales. Horse riders on well-designed trails are managed in the same way as other trail users, through a holistic approach to promote water quality involving a multi-facet approach to design, use of vegetation and trail user codes of conduct.
4.2 HORSE DRINKING WATER SUPPLY

Many peri-urban trails will not require the provision of horse watering points due to the proximity of horse properties, and the short trail distance. Water will need to be accessible on long-distance trails, trails with geographic challenges such as steep hills and at overnight camping spots.

Reticulated (piped) water, stored in tanks and available by tap is a suitable option. Creeks or rivers are not likely to be suitable as a permanent option if the water supply and quality could be seasonably variable, and if frequent regular access and egress could significantly compromise creek bank stability. In this latter case, where it may be cost prohibitive to provide a reticulated water supply, positioning hitching rail a distance from the watercourse coupled with community reminders to bring a collapsible bucket may provide a suitable alternative.

The provision of public stock troughs is problematical. Drinking from a public trough risks cross-contamination between horses who may have a minor ailment, for example, a runny nose, and ongoing dirt or contamination from any number of factors, including dogs jumping in with objects found during their daily walks. If troughs are available, it may be safer if they are left empty when not in use.

Trail managers may also arrange for access to private water supplies, or public infrastructure located on private land, for example, a tank and tap near a property boundary making use of the refill provided by an adjacent shed roof.

4.3 CREEK CROSSINGS

Protecting water quality is a key focus for land managers, and well-sited trails can help to manage risks through shaping user behaviours, managing water run-off through design, filter zones and buffers, and through providing context for community education programs.

Low gradient approaches into a creek at a point where the creek bed has a firm, obstacle-free base is suitable for horses. Existing fords are likely to be suitable, either natural or enhanced with a roughened cement vehicle crossing. As with all trail infrastructure and features, overhanging branches and other hazards will need to be identified and removed or managed, especially after high water or flood events. Associated signage may feature messages relating to the ideal crossing point, and for horse riders, to discourage allowing horses to stop in the centre of the watercourse and paw at the creek bed.
4.4 HORSE WASH DOWN AREAS

A horse wash down area is unlikely to be needed on peri-urban trails set within agistment and horse property precincts. Wash down bays at beach sides, and at overnight campsites are possible if a reliable supply of water was available and runoff managed. There is the option for wash down facilities to be available for horse trail riders on private properties, at showgrounds and racecourses with prior arrangements.

4.5 WET AREAS ON TRAILS, IN HORSE YARDS AND TIE UP AREAS

When managing occasional damp or wet areas, geocell products may provide an option, whereby a plastic product is stretched out over a site and filled with sand or gravel. Soil, sand and steep slopes can be stabilised using modern cell and fabric products and are quite suitable for horses when laid on a firm base with a natural infill.

This type of infrastructure is suitable for use on damp trails, for yards or tie-up rails located in areas prone to mud.
4.6 STEEP TERRAIN AND TRAIL OPTIONS TO MINIMISE WATER EROSION

Occasions may arise when the legal access corridor permitting public access for a recreational trail is on a fall line, that is, straight up or down a hill. This situation is less than ideal as additional maintenance will be required for the lifetime of this trail section, in order to manage water erosion.

Standard staircases are unsuitable in these locations. However, there are two options in use which may provide a sustainable solution. The first is ‘horse steps’ whereby steps are situated with enough landing space for at least half a horse length on each deck before the next step, the second is to design a switchback trail. While not for all horse riders, for those with horses used to negotiating steep, narrow trails, these options provide suitable access.

Both installations will require periodical maintenance at a greater level than surrounding trail on a gentle gradient.

4.7 MANURE MANAGEMENT

Permitting horse riding on peri-urban trails will need support by trail managers to shape community expectations around manure and its management.

Horses, if being unloaded and ridden from a trailhead, will primarily deposit manure within this area whereby riders can take manure home or place in a container on site identified for the purpose. Once on the trail and horses are settled, there is likely to be less ‘need’ to manure. All shared use trail users can be informed, through signage and other information, to expect to meet horses (and horse manure). Within many communities, this approach is enough, and complaints are minimal.

If a problem arises in the community and the land manager is receiving significant complaints, it is important for all users to work together to resolve the issue. Discuss within your community, including with horse riders, what is acceptable and support this with public education and a reminder message.

As a note, riders may suggest it is unreasonable to dismount during the ride to manage manure, as many riders will not be able to remount without assistance. Further, the use of manure bags occasionally seen with harness horses is not practicable for ridden horses.
5. Biosecurity

Managing recreational trails for all user groups requires an understanding of plant and animal biosecurity risk management practices.

Animal health is overseen a national level, by the Department for Agriculture with support from Animal Health Australia. At a state level, the Department for Primary Industries or Agriculture can assist local government staff. Before establishing a new trail, it is useful to find out if there are any localised issues to consider for animals on or adjacent to the trail. General information is also available from the Farm Biosecurity national website.

Authorities responsible for plant health and biosecurity (native, agricultural and garden) will be familiar with diseases which are endemic to the local area and in relation to public trails, are considered higher risk. Two plant diseases we will discuss are Phytophthora and Phylloxera.
5.1 PHYTOPHTHORA

Phytophthora (PC) is a plant disease commonly known as ‘dieback’. It is spread by infected soil and mud, particularly during rainfall events and wetter months. The carrying of mud on boots, vehicle wheels and hooves may contribute to the spread. The spread of Phytophthora is managed on public land using a combination of on-ground interventions, for example, trail closures during winter, and community education.

When planning infrastructure in a PC risk area, discuss with local authorities and trail builders current risk mitigation techniques employed. The use of dolomite surfacing around trail entry points and ensuring drainage over the trail is functional are two ways to help reduce the impact of PC, along with closing infected trails in the wet season.

5.2 PHYLLOXERA

Phylloxera is a tiny insect pest which can kill vines, currently present in Victoria and New South Wales. There is the potential to bring the pest to South Australia and other uninfected states on vehicle tyres, clothing, footwear and horse equipment. Vineyard Health Australia has developed public education materials, including signage which is suitable for erecting along sections of trail which may run adjacent to vineyards.

REFERENCES

• Horse SA Phytophthora Educational Postcards (The Horse Federation of South Australia Inc., 2019)
• Department for Environment and Natural Resources. Phytophthora dieback: Horse riding guidelines
• Vineyard Health Australia (Vinehealth Australia, 2019)
6. Trail infrastructure

Ideally, the design of recreational trails which permit horse riding occurs before installation. However, this is rarely the case. In reality, the pressures of a growing population and associated development leave pockets of horse keeping in the suburbs and around our major towns and cities, requires existing legal places to ride to be ‘retrofitted’ as a recreational trail.

Advocacy by local horse riders to see trail facilities installed or maintained have the challenge of providing evidence of participant numbers. Rarely as prolific as walkers or cyclist statistics, lower numbers should not deter the land manager from providing facilities.

In this following section, we will look at a range of horse trail infrastructure options. In planning, design and site considerations, nearly all sites will require:

- Level, near level site with drainage
- Best sight lines available
- A hardened surface where horses stand or concentrated traffic occurs
- Avoidance of low branches, nearby barbed wire or other hazards
- Room to pass other trail users, either at the infrastructure site or nearby
- Allowance of space for a horse to turn around, allow 4 m x 4 m
- Buffer zones, or space allowance, between horses and vehicle traffic or watercourses
A concentrated area of infrastructure installations at a feature entry point to a trail network is called a trailhead. The level of investment will be reflective of the importance of the trail and where the entry point is within the network. For horse riders, a major trailhead is a staging area which allows for horse floats and trucks to be parked, horses saddled in preparation for riding, and rider rest facilities.

Trailhead infrastructure is reflective of the importance of the trail, for example, a minor trailhead may consist of a designated area for a float to pull off a road, while a major trailhead services overnight accommodation.

Checklist of Trailhead Common Use Community Facilities

- Signage
- Vehicle parking, bike racks
- Perimeter fencing (ideal)
- Toilets, shelter, picnic tables, BBQ, fire ring
- Facilities for other types of trail users, e.g. bike rack
- Camping permission
- Powered sites (for some overnight camping options)

Horse specific facilities may include additional parking allowing for the size of horse floats, yarding, tie up areas and a stock water supply.
Horses are ridden ‘barefoot’ (the natural hoof), with traditional metal shoes, or may wear special hi-tech material boots which fit over the entire hoof.

Trail design manuals will provide design advice relating to reducing the impact of water erosion, compaction and ‘spread’ of the trail surface. Important factors for horse riders relate to ‘traction’, the absence of sharp objects such as stones, and noise.

The ideal surface is a natural dirt trail; however, this is not always the preferred surface for all types of peri-urban trail users, nor will it withstand high numbers of users. If possible, there may be an opportunity to provide different surface options within the same travel corridor, for example, a sealed surface for wheeled users and for horse riders, a shoulder or easement of dirt.

Suitable surfaces also include sand that is not too deep (< 10 cm), compacted aggregate (crushed small diameter stone), and dolomite. Woodchips provide a good riding surface; although it requires a higher level of maintenance.

Asphalt, cement, pavers and similar surfaces are slippery and concussive, and not suitable for a horse trail surface, but would be expected where the trail crosses roads, or as part of a short ‘join-up’ between two other trail sections.

Reconstituted plastic found on many modern ‘off-the-shelf’ bridge surfaces is quite slippery for horses, leading to the horse losing confidence and potentially refusing to step onto the surface. Smooth, lightweight timber footings may also fall into this category. If a surface is likely to be slippery, treatments should be investigated, for example, laying a strip of rubber matting over a bridge.

The trail surface colour and consistency should continue over bridge decking and culverts, to assist the horse in maintaining confidence with his surrounds.
6.2 TIE UP RAILS

Horses are tied up to infrastructure known as a hitching or tie-up rail which caters for two or more horses. A hitching ring attached to a wall or post caters for a single horse. On public horse trails, there is a need to cater for more than one horse; therefore, tie-up rails are better suited for the purpose.

Horses are tied up to the rail via a lead rope attached to a halter (American term) or head collar (English term). The lead rope may be tied up directly to the rail, or a piece of baling twine tied to the rail and the rope through the string. While tied up, horses may become startled and ‘pull-back’ which means to throw all their body weight against the rope. If the string breaks, often a horse may only go a couple of steps and stand still again. If the rope does not break and a sub-standard rail snaps instead, this can be extremely dangerous.

It is for this reason that hitching rails need to be built super-strong and maintained, or not built at all. It is unusual to provide shelter over a hitching rail, but consideration can be given to this if build and maintenance budgets allow, as there are welfare benefits for humans and horses alike.

6.3 HORSE YARDS

Horse yards contain a horse without having to tie it up, providing separation from the general public and an overnight accommodation option. The rails of horse yards may also double as a tie-up rail for the site. Yards need to be of solid construction, as horses will rub, push and lean on the railing.

**DESIGN CONSIDERATIONS**

- 4 m x 4 m is ideal, may be larger
- solid well-drained base, e.g. dolomite over crushed rock or geocell
- solid rails of timber, metal or there may be a suitable recycled plastic product
- Gateways wide enough to lead a horse through easily, a minimum of 1.5 m
- Shelter to reduce the effect of wind and sun
6.4 MOUNTING BLOCKS AND RAMPS

A mounting block is one or more steps leading a small level platform, while a mounting ramp is designed to allow pushing of a wheelchair up to a platform. Mounting aids (block or ramp) are located at trailheads while mounting blocks can be found at some gates or other infrastructure requiring a rider dismount, e.g. low underpass or gates.

A mounting block serves several purposes including for riders who may have a disability or injury, be fatigued or wishing to reduce strain on the horse's back. Provision of this type of infrastructure ensures that the trail is user-friendly to a wider range of riders with differing abilities.

Horse riders will often seek out a rock, a mound of dirt or fallen log to serve the same purpose, often these may be slippery when wet, or poorly positioned near other hazards. Occasionally riders will leave old milk crates or boxes out on trails for the same purpose, which are not suitable as public infrastructure. If this occurs, there is an indication that the site would benefit from a well-designed and sited mounting block.

Commercial, lightweight mounting blocks are readily available in the marketplace. Manufactured for use in private riding arenas, they are generally not suitable for public infrastructure (theft, lightweight), but will provide design ideas. Riding for the Disabled Australia has a fact sheet available, linked in the reference section.

- Trailhead sites to allow for a vehicle with disability access to lower their ramp nearby and to allow for easy transfer
- The side the horse stands must allow for the horse to walk forward easily onto the trail (no sharp turns).

REFERENCE

- Standards for Ramps: RDA Australia Fact Sheet (Riding for the Disabled Australia Association, 2019)
6.5 BARRIERS AND BOLLARDS

Barriers are a control point on a trail, usually placed at the entry to a network to prevent access by motorised vehicles or perhaps to modify speed or direction of legal users when moving from one trail section or type to another, or before crossing a road. Bollards, rocks, posts or zig-zag style gateways are examples of barriers. Poor siting, design or material choice may lead to a ‘crush-point’, whereby confinement of trail traffic to a narrow point occurs may generate user conflict or a safety issue, especially if horses are present. Therefore, a must for horse riders is a recommended space allowance of 1.5 m between bollards.

Bollards deter motorised vehicle entry onto this rail trail, which allows horse riding Coast to Vines Rail Trail, McLaren Vale, South Australia.

A step-over assists to reduce motorised vehicle entry into the forest, near Meadows, South Australia.
6.6 STEP-OVERS

Step-overs (also referred to as cavaletti or stiles), is a horse friendly barrier to deter against vehicles or motorbikes entering the trail network. Designs feature between one to four rails for a horse to negotiate or ‘step-over’.

The step-over is often placed within a fence line and may have a standard gate for vehicles sited adjacent. The gate, if left unlocked, provides an option for riders who have horses that find step-overs difficult.

Horses will need to be trained to walk over the infrastructure, and cyclists may need to carry a portable folding ramp.

Horses more readily accept wooden rails to step over, as metal can make a loud noise if a hoof makes contact. Hitting a rail with a metal shoe or hoof frightens the horses, and they may leap over the rest of the fixture, or step back and refuse to be ridden forward for a second attempt. A rail height of 30 cm is generally accepted, with not less than 1.5 m width.

The images on this page show two step-over rail types, one is wooden, while the other is metal with a rubber coating to soften the noise and reduce the risk of a horse taking fright should a hoof hit the rail.
6.7 GATES
Negotiating gates on recreational trails is a problematical exercise for many horse riders, a factor not faced in the same way by walkers or cyclists. Off the shelf pre-made farm gates, while cost-effective and easy to install, are not specifically designed for horse riders to open and close while mounted. It is preferred to fit new or existing gates with a long-arm handle latch.

Poorly maintained gates shift on their fittings over time, resulting in latches which become difficult to open or close.

Horse riders may have problems opening a gate, requiring a dismount, if the gate is poorly positioned against a wall or other hazard, or is caught up in long grass.

Remounting a horse may be difficult once out on the trail due to age, disability, injury or difficulty with a horse that may not be cooperative. Therefore, the installation of a mounting block would be most welcome by riders at strategic locations along the route.
6.8 BRIDGES

When planning for a bridge that will also cater for horse riders, it is important to ensure that the final installation will not sway, vibrate, and become excessively noisy when in use. The horse will be assisted to stay relaxed if bridge construction features materials are encountered elsewhere on the trail, and the trail surface continues over the deck. The bridge may need to cope with the weight of two or more horse riders, which is a similar weight as a small maintenance vehicle.

Railings can be used as an aid to guide horses onto the bridge and protrude from the parapet (railings on the bridge) to guide horses away from the edge. Infill along the base of the parapet and the bridge deck may prevent a hoof slipping off should a horse become startled.

As bridges are expensive installations, they may need to serve a purpose in addition to recreational trail usage to justify, or pay for, the expenditure associated with the build and ongoing maintenance.

6.9 CULVERTS

Culverts allow water to pass under a trail, managed through the installation of a pipe, cement moulding, stonework channel or similar structure. These are low profile instalments, with the trail surface continuing over the top ensuring that horses take to these easily. In many cases, no special edging or parapets are required.
6.10 OVERPASSES

An overpass is a type of bridge that spans a road or railway line. Overpasses which are a specific build for horse riders are unusual in Australia; instead, horse riders are required to share existing infrastructure with motorised vehicles. In a similar manner as for bridges, the overpass should not sway, vibrate, be noisy when in use or be made of materials not already encountered elsewhere on the trail. Safer riding experiences are provided by tall, opaque fencing leading into the overpass and continues as a tall parapet, featuring infill so that the traffic below cannot be seen by horses, and if possible, provide separation from adjacent vehicle traffic.

6.11 UNDERPASSES

An underpass provides a safer option for horse riders to travel from one side of a road or railway line to the other, particularly if traffic rates are high, fast, or there are poor sight lines. Underpasses may be specifically designed to segregate types of trail users, or all users can share the corridor, which occurs when utilising the existing local infrastructure.

Horses will need to become accustomed to using underpasses, as it involves unfamiliar stimuli including travelling from bright light into darkness and noise from overhead traffic.

Horse riders will require an underpass to have a height of 4 m or more, although lower tunnels are possible on routes, with riders needing to dismount from their horse and lead. As for bridges, the same trail surface approaching the underpass should continue through, which assists in maintaining the horse’s confidence.

Signage will be required featuring messages about safety and how trail users are to pass each other within the confined space.

*Shared use trail separating through the underpass, with horse riders taking the right-hand side option of a dirt trail, while walkers and cyclists continue on the asphalt, Canberra.*

*Shared use trail utilising existing infrastructure to pass under a busy road. Morphett Vale, South Australia.*
7. Roads and railway lines

Recreational trails located in peri-urban areas are likely to be located alongside roads at many points within a trail network, and on occasion, alongside railway lines. The Australian Road Rules recognise the horse as a vehicle, which is challenging as the horse is a sentient animal and reactive to his rider and the dynamic surrounds.

7.1 RIDING ALONGSIDE ROADS AND RAILWAY CORRIDORS

Horses and vehicles are often not a good mix in built-up areas or where speed is a factor. One way to reduce risks is to utilise natural or artificial separation between the horse and traffic. Ad hoc, informal trails often develop around neighbourhoods with traffic separation, as all recreational trail users intuitively seek this, even if it means crossing forwards and back several times on one road to secure the best route.

Roadsides (often called road related areas) are subject to vegetation management plans. Therefore, site by site negotiation and agreement may be required, as to how trail access and conservation values are both able to be achieved, especially at higher risk points such as bends and crests.

In some cases, permission may be gained to access neighbouring private land, and a dedicated corridor built adjacent to the existing road reserve.

Riding alongside a road on the carriageway is likely to be more dangerous than crossing over a busy road, due to the period exposed to vehicle traffic.

Riding alongside busy railway or tram lines, with the trail co-located within the transport corridor, is not recommended for shared use recreational trails which cater for horses. However, if the corridor has only occasional or seasonal use, there will be opportunities to provide an open trail during the off-season for trains.

Proposals to locate recreational trails outside the transport corridor, but adjacent to a busy train line will need to form part of a public consultation involving horse riders. Trains and horses can quite successfully mix in parallel corridors, especially if horses live in the local area and are used to trains as part day to day routine.
Established trees and vegetation provide a visual barrier between the trail and road. Sheoak Road Horse Trail, Belair, South Australia.
7.2 ROAD CROSSINGS

If a trail crosses a road, this should be identified for all road users.

At a basic level, a crossing may consist of warning signage, and if available, bollards with reflective tape.

Where traffic lights are available, placement of the pedestrian light button back from the edge of the road, and at a height a rider can reach, improves safety. This configuration is called a Pegasus crossing.

Horses may become impatient waiting for traffic and fidget. A rail or fence to stand the horse against while waiting assists the rider to keep the horse under control.

7.3 RAILWAY CROSSING POINTS

Railway line crossing points established on roads for use by vehicles, with associated lights, gates and barriers, may also be suitable for use by horses travelling on the main carriageway. Other crossing points could be established across a train line, at a site unrelated to a road. A site by site evaluation will need to take place.

Horses can cross train tracks, with infill between the rails enhancing safety. Without infill, there is the possibility of incidents including a horseshoe becoming hooked onto a rail track, or the soles of the horse’s hoof become bruised from large sharp stones.

As with road crossings, trail users require good sight lines and suitable (flat) approach and departure gradients from the track. The designated crossing point should have set back waiting areas with a 90-degree approach and departure from the crossing point.

The setback areas will need to be as far from the track as possible, as horses may not be as familiar with the visual and noise hazards as those found on roads.
8. Signage examples

This section contains examples of signage featuring information for horse riders.
I share my trail

☑️ Keep left
☑️ Ride slow
☑️ Say g’day

Onkaparinga River National Park allow walkers, runners and cyclists to connect with nature via a network of shared and walking only trails.

The National Parks Code

- Take your rubbish with you.
- Bike riding is only allowed on designated trails in the park.
- Horse riding is only allowed on the Tom Roberts Trail in the park.
- Leave pets at home, they’re not allowed in the park.
- Motorcycles are not permitted in the park.
- Wood and solid fuel fires are prohibited throughout the year.
- On days of Catastrophic Fire Danger the park will be closed to all visitors (and may be closed on days of Extreme or High Fire Danger or during serious storms).
- Camping is not permitted in the park, except in the campground.
- Fishing is not allowed in the park.
- Keep our wildlife wild.
- Do not feed or disturb animals.
- Do not remove plants or rocks.

Code of Practice for Trail Users

To protect the surrounding environment and to ensure the safety of all trail users, please be aware of the international Trail Users Code of Practice when using shared trails. Important points to remember include:

- Plan your ride or walk.
- Comply with all signs.
- Walk and ride on formed trails only.
- Do not take short cuts or form new trails.
- Avoid riding in wet, muddy conditions.
- Tread or ride lightly and leave no trace or rubbish.
- Control your bike and walk, run or ride within your limits.
- Clean your bike, shoes and/ or horse’s hooves. Don’t spread weeds or plant diseases.
- Carry sufficient food and drinking water.
- Respect the rights of others.
- Tell others about the code.

Give way rules

Cyclists must give way to walkers. Everyone gives way to horse riders.

Know where you can ride

Make sure you check the map so you know where you can ride your bike or horse before you set off.

Horse riding is only allowed in the park on the Tom Roberts Trail. Some trails are for bushwalkers only for safety or conservation reasons.

Stop the plant killer!

Phytophthora (fy-TOFF-thera), also called root rot fungus, is killing our native plants. It also threatens the survival of animals that depend on these plants for food and shelter. This introduced fungus can be found in soil and water.

Please help stop the spread by staying on tracks and trails and by complying with all Phytophthora management signs.

Become involved

To become involved with conservation activities in the park, visit the Friends of Onkaparinga Park website at http://www.communitywebs.org/ OnkaparingaParks/

Thank you for leaving the bush in its natural state for the enjoyment of others.

In a life-threatening emergency call 000

Report hazards and other issues to the Natural Resources Adelaide and Mt Lofty Ranges Willunga Office on 8550 3460.
9. References


Visit the Horse SA website www.horsesa.asn.au for further resources and information.