Trails Strategy

Part 2 - LăădzŜă and {ǗǊI-ǘŜƎʎŎ Guidelines

July 2012

@leisure PLANNERS

EAST GIPPSLAND SHIRE COUNCIL

July 2012

About this document

This document is Part 2 of East Gippsland Shire Council Trails Strategy. Other Parts included in this strategy are Part 1 Policy and planning context and Part 3 Examples of resources. These documents have been prepared by @leisure on behalf of East Gippsland Shire Council, and in conjunction with staff and other stakeholders.

This strategy sets out:

- The benefits of trails
- Policy principles underpinning this plan
- A process for planning trails
- A trails hierarchy
- Methods and information required to prioritise trail projects
- Issues and strategic guidelines to address these. It also provides examples and a list of resources that can be used to design and construct trails.

A checklist and summary of each is provided in Appendix 7.

Due to the depth of information already available, this document does not seek to provide details about the construction of trails, rather it provides links to where such information is available.

Groups interested in partnering with Council in the development and management of trails can understand Council preferences and policy objectives through reading the strategic guidelines in this document.

Acknowledgements

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- Lester Wharfe – Environmental Officer EGSC
- Rhonda James – Transport Connections Officer EGSC

Rear 534 Mt Alexander Rd
Ascot Vale Vic 3032
P: 03 9326 1662
E: info@atleisure.com.au
www.atleisure.com.au

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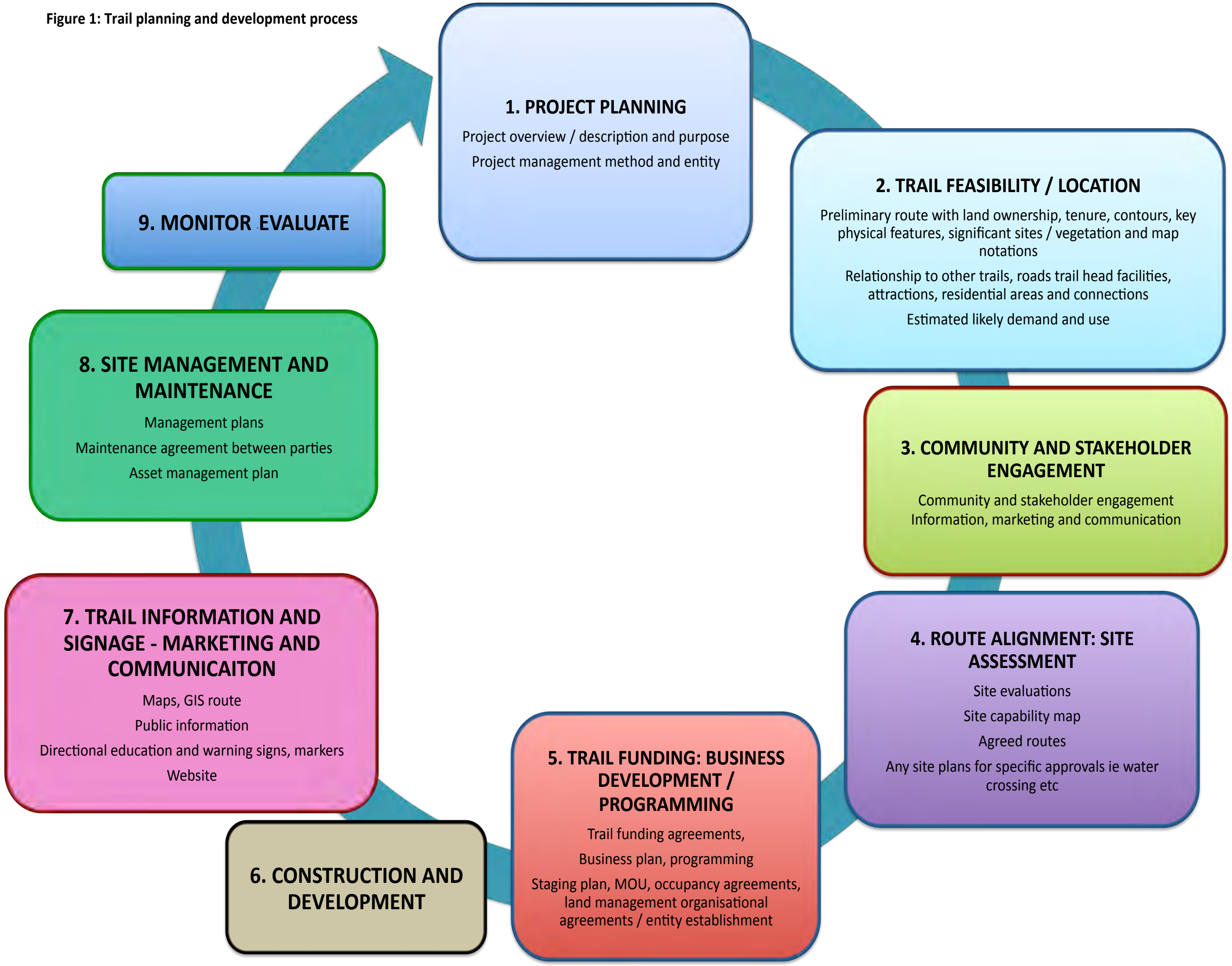
3. Strategic planning and prioritising trail developments

A process for planning and developing trails

The network of trails in East Gippsland has developed originally through a combination of community initiatives, user groups working with land managers and park agencies, tourism and state driven projects, historic tracks and trails developed for fire, forest, and utility management purposes being used for recreation. The trails network has not been strategically developed or systematically managed. The adjacent diagram describes the key desirable phases in trail planning and development.

Figure 1: Trail planning and development process



A number of trail issues have been raised as needing to be addressed in this plan. These are discussed in the following pages under the following main headings:

- Planning and Design
- Trail Management
- Information, Communication and Marketing

Council should ensure that priorities for trail development are determined by strategic importance and value, not just those initiated by residents or community groups.

The typical planning process for trail development is illustrated on the previous page.

Prior to commencing a planning process Council and any community group wishing to develop a trail should:

a) know what trails are currently available

b) be able to identify sites that have a good potential to provide a trail cost effectively

c) understand whether the proposed trail will be considered a priority

d) identify who will use the trail/s

e) determine the intended outcomes

Where to start

a) Know what you have

The place to start is to know what trails are existing, and classify each existing trail according to:

- its type (urban, peri-urban or bushland)
- location served
- tier of town served
- type of catchment it serves; regional, district or local
- the degree of difficulty and accessibility
- suitability for walking, skating, pram, wheelchair, dog walking, cycling, BMX, mountain biking and bushwalking etc.

See figure 1: Hierarchy of trails

Locating and classifying trails enables Council to:

- market existing trails to enhance their value and use and connect with potential users
- manage them strategically based on particular conditions, and land tenure

Collecting this information about existing trails also assists with determining:

- what gaps there are in existing trails connecting with residential areas or facilities, or being continuous
- what opportunities there are to extend existing trails, make them into circuits, or develop them to a better quality

If there is already a trail network within an area, managing or repairing deteriorating or run down trails should be a priority over developing an entirely new trail.

Part 3 provides an example of an inventory sheet and an improvement form that can be modified and used to evaluate trails in East Gippsland.

b) Determine key areas with good potential to provide trail cost effectively, and where they are likely to meet demand

This process should occur alongside all urban development/structure planning processes.

For urban shared trails or peri-urban areas

Areas with good potential to provide trails should be identified based on:

Likely available space

- Availability of open space, large parks (for perimeter trails) and key linear open spaces or features, waterway corridors, easements or coastal foreshore reserves
- Opportunities to utilise disused, rail or government roads that have potential for trails

Those likely to add value and be cost effective

- Extensions to existing trails to create circuits gaps in trails routes, or connections from existing trails to local destinations/urban areas

Those accessible and serving more people

- Accessibility from transport facilities such as bus stations, railway lines or road networks
- Trails already accessible to people of all abilities that can be extended into circuits

Those locations where trails are most likely to be in demand:

- Key community, shopping, school, sports facility, and park destinations
- Convenient exercise circuits around the neighbourhood or town
- Scenic or visitor destinations

It would be desirable to define opportunities for these circuits in urban areas quickly to secure as part of subdivisions and before further development prevents access.

For bushland areas

Areas with good potential to provide trails should be identified based on:

- the availability of large areas of forest with a range of topographic features and in close proximity to an urban centre, visitor service or attraction, or trailhead facilities
- a network of existing trails (including fire trails and other tracks)

Care should be taken to identify, and then avoid: fragile environments; sites of cultural heritage; and view sheds, before selecting trail locations and determining priorities.

c) How will Council determine which trail is a priority?

The key criteria Council will use to determine the priority for supporting or funding trails in East Gippsland will be guided by:

a) the benefits, (See Appendix 2)

b) the principles underpinning this strategy, (outlined in Chapter 2):

- Sustainability
- Diversity
- Accessibility
- Stakeholder ownership/stewardship
- Marketing and communication
- Equitable distribution

c) guidelines outlined in this plan addressing common issues

d) the capital and recurrent costs to Council

e) whether existing trails can be maintained given, available resources, as well as the proposed trail developed

The criteria in Appendix 6 provides a basis for evaluating one trail over another.

d) Determining who will use the trail

This will ensure the trail design and the route will meet the target audience's needs. Considerations include: whether the trail needs to be accessible to people using mobile aids; what activities are to be accommodated e.g. horse riding, road cycling, MTB, dog walking, skating etc; the degree of difficulty or proficiency of the rider; and whether it should service visitors or residents (hence if support facilities or links to other services is required).

e) The intended outcomes

It is important to be clear about any assumptions underlying the project, what the purpose of the trail project will be and who will benefit. This will assist in targeting different funding sources and ensuring original objectives are met.

What is needed for Council to evaluate the merit of a trail proposal

All trail proposals should be analysed to determine their merit, even if at any point in time no other trails are competing for funds.

A feasibility test should be applied to each proposal. Information required for this to occur should include that listed below: Note: not all this information would be expected to be prepared by a community group, or be provided at the initial stage.

This information is listed below and summarised in the planning process illustrated in Figure 1.

1. Project Planning

- Project overview, description and objectives
- Trail hierarchy

2. Trail feasibility/Location

- A plan with the proposed trail length, location proposed routeway alignment (including any options), contours, relationship to key physical features, land ownership and likely form of construction
- Locations and nature of trails in the vicinity (this may need to be compiled by Council in conjunction with local information)
- Connections to community facilities, services, accommodation, visitor destinations, other parks/sports facilities
- Estimated demand and usage of the trail
- Any related tourism services (if a regional trail)
- Indicative probable costs to develop and maintain

3. Any community/stakeholder engagement

- Evidence of demand/community/stakeholder engagement
- An agreement or evidence of support from all landowners/managers along the route as appropriate
- Opportunities for partnerships (development or management services)

4. Route alignment/site assessment

- Sign off from the land owner or responsible authority on environmental impact: that there are no sites of environmental significance that would be impacted by the trail e.g. fauna habitat, cultural heritage, soil stability, and vegetation
- Detailed investigations with respect to site capability and treatments to address significant sites, drainage, crossings and risk management etc.
- Any necessary planning permit approvals in place and any Memorandum of Understanding with partners
- Likely support facilities required (e.g. toilets, seating, water, wayfinding/risk management signage, picnic facilities or trail hub

5. Trail funding, business development/programming

- Itemised probable capital and recurrent costs
- A business or management plan (if a regional trail)
- Proposed asset management
- MOU
- Funding/occupancy agreements

The trail should be project-ready before it is submitted for funding.

6. Construction and development

- Any information or proposals related to the process or staging of construction

7. Trail information/signage, marketing and communication

- A proposal related to information, wayfinding, promotion and communication with users and stakeholders about the trail

8. Site management and maintenance

- Preliminary management plan

9. Monitoring and evaluation

- A proposal as to how user feedback will be sought, conditions monitored and usage recorded.

Key information to be collected for evaluation is listed in Appendix 6.

Appendix 7 provides a summary and checklist of information in this plan that will help community groups plan trails.

How can trails be funded?

There are a number of one-off grants available from time to time i.e. targeted sustainable transport, physical activity, park and regional development, tourism initiatives, recreation projects and implementing State and Federal initiatives.

If projects are planning ready, there are better chances of acquiring this funding. Priority projects should be developed up, to be planning ready.

The key sources of funds available for trails development

- Many grant programs require dollar for dollar funding, and hence need to have a Council contribution
- Council could set aside a proportion of its road budget for trail development, in the same way that community art projects are often funded as a percentage of building developments
- Funds may be available through partnership projects with community health, water/catchment management, transport, VicTrack/VicRoads agencies, or schools, parks and environment; DSE and Parks Victoria
- Development or open space contributions should be used for trail developments, in new subdivisions in residential, commercial or industrial areas (unless they are in a road reserve.
- Council should ensure all structure plans identify future trail routes
- User contributions (mostly in kind) will be important to ensure trails are sustainable, and maintained
- Different levels of resources are typically available to support the different types of trails identified

For urban-shared trails, Council may:

- Require the provision of trails in planning permit conditions, and through developer contributions
- Find users to contribute to either development or maintenance of trails
- Negotiate with VicRoads when shared trails are required along bypasses or arterial roads
- Partner water and utility authorities to provide trails along easements

In peri-urban and high profile locations:

- Corporate programs, volunteer, charity or conservation groups, and personnel provided through the justice system may be available to contribute to the construction of trails and vegetation management or planting in the corridor

In bushland trails:

- Contributions to develop mountain bike trails are typically forthcoming from land management agencies such as DSE, and user groups
- Mountain bike and bushwalking clubs are typically organised and willing to undertake management of such trails

Staging

If insufficient funds are available upfront for trail construction there may be several options for staging the construction:

- Levering additional funds: Using funds available to lever additional funds (through grants) so that the trail may be constructed in one go, or attracting partnerships from allied agencies or user groups

Staging is a good option to protect quality e.g. appropriate surface, the best (not necessarily the cheapest) route and width. These attributes are what makes the trail valued.

Staging however must ensure that the length of the trail is adequate to link destinations, make connections to other trails or reach a logical end point. Staging should not end up with seal, or the trail finishing in the middle of nowhere.

Options for staging may also include preparing the entire routeway, base, any drainage required, (to a rideable state) but not sealing in the first stage.

4. Trail planning and design

Economic/tourism development

East Gippsland is marketed as a nature-based destination. Iconic walks and trails can motivate visitors to come to East Gippsland.

Given the distance from Melbourne visitation for trails is likely to be in conjunction with other activities, during short trips or several days stopover on the way through to another destination.

There are many small businesses that can benefit from trails, and services that can be established to support trail users.

Strategic guidelines: economic and tourism development

1. Council should support trails that contribute to economic development and community capacity building.
2. Council should foster the development of businesses that support cycling trails, and related tourism businesses; (e.g. accommodation, repair services, personal services e.g. lunches, drying, storage or luggage transfer), events, guided rides, fitness trainers, and information products.
3. Council should encourage provision of cycle friendly facilities in private developments and community facilities: such as provision of parking, showers etc. and connections to trails.
4. Council should support the development of trails, and trail head facilities, and those that support events to generate economic and social benefits for local people.
   These trails should feed off the main trail infrastructure already provided: (e.g. the rail trails), and be in close proximity to urban centres where support facilities and accommodation are present.
5. Council should support other agencies, tourism bodies and clubs, in attracting and conducting trail based events, and providing information for event users that generate social and economic benefits e.g. utilising local services.
6. Council in conjunction with other land managers, clubs and tourism groups should develop a one stop shop website for trail information within the Shire.
7. Council should encourage and support the conduct of events and organised activities for cycling and walking, orienteering, trail running, equestrian and related trail activities, through marketing, logistics and where possible sourcing of funds. However the conduct of these should be the responsibility of clubs, peak bodies or event organisers.

Routeway planning

Urban areas

In urban areas key aspects of trail routeways that influence use are[1]:

- functional treadway surface, width, exposure to traffic, permeability (street and intersections design)
- safety (lighting, traffic, verge widths and crossings)
- aesthetic (streetscape, maintenance and cleanliness), and views (sights and architecture), and
- destinations (parks and shops)

Peri-urban areas

In peri-urban areas for touring cyclists, the following are beneficial:

- connections with public transport, and
- connecting tracks to urban centres (e.g. fire, forest or other management tracks)

Bushland areas

The varied and steep topography of some natural areas in the Shire provide challenge and diversity, and opportunities for advanced MTB riders.

Key considerations in relatively steep country are:

- degree of difficulty/accessibility required
- suitable surface, and
- route design to minimise damage by erosion and amount of maintenance required.

Site analysis

An assessment of a proposed trail route should be undertaken prior to approval of the trail.

The choice of location and the alignment of any new trail should consider:

- the presence of any existing trails and disturbed areas
- the character, function and landscape setting types of the open space, and the context (the broader park surroundings)
- whether it is compatible with the planned future site character and landscape context

In choosing an alignment: select routes connecting and along existing routes through disturbed areas or over looking scenic features, rather than through pristine or significant areas, even though the aesthetics of an area will be a major attraction for the trail users. The trail corridor can be redesigned and revegetated once a trail has been constructed.

Off-road trails in structure planning and new residential subdivision design

All master plans of large urban reserves (e.g. over 2ha) should consider opportunities for, and the capability and suitability of reserves to accommodate shared perimeter trails.

Routeways in potential new residential areas should be determined in structure plans and subdivision design, to ensure these are provided in the land development process, (by developers and VicRoads for example).

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1 Dr Terri Pikora Walking for Recreation Journal of Health and Medical Sciences 2003.

In new residential development, shared trail networks need to be included at the structure planning level and then subdivision. They should be designed:

- As circuits to encourage exercise (to run, walk the dog and take a daily walk)
- As perimeter trails around major parks in the vicinity (unless the parks are too small) to connect with urban areas, and with the potential to link into future development
- Through settings which are attractive for leisure and exercise: primarily through open space corridors and lower order roads
- To connect families with schools and other community and leisure facilities
- To connect with adjacent residential areas and destinations outside the precinct, and with broader networks
- With sufficient space and at levels which mean they can be safely accommodated on the perimeter of drainage ways so that they are fit for purpose and able to be used in wet weather

Strategic guidelines: trail and routeway planning

8. Council should assess all proposed trail routes prior to approval.
9. Trail proposals where Council investment is sought should have support in a relevant approved strategy or plan.
10. Consider providing trails to scenic, distinctive features, unique to East Gippsland and attractions appealing to tourists.
11. Routes along existing tracks, and through disturbed areas are a priority over pristine or significant areas. Least disturbance occurs if existing tracks are modified rather than constructing new routes.
12. When siting and constructing trails, avoid further environmental impact where possible.
13. Include trail routeways in structure plans and subdivision plans, to ensure trails are provided and funded in new residential, commercial and industrial areas; in partnership with developers and VicRoads.
14. Briefs for structure, development and master planning projects should include identification of trail routes.
15. Ensure there is a good distribution of trails across the municipality, that are connected to existing rail or other trails, or urban areas.
16. In determining trail routes, seek to ensure that functional, safety, aesthetic, environmental and destinational requirements are met.

Land management/tenure

As trails are likely to cross land owned and managed by a number of government agencies (e.g. Parks Victoria, DSE, Council, water authorities), and committees of management etc. Collaboration and good co-operation between landowners and trail users will be essential.

Trail routeway planning needs to consider land ownership and management options prior to detailed design. A trail may need to pass through land in multiple ownerships with different regulations and planning controls.

Council has a system to enable it to quickly gain approval to create a committee of management over a State government owned site to facilitate the local management of a trail on Crown land.

Where it is not practical to provide a trail within one land ownership, clear development objectives and management plans will need to be documented prior to occupancy agreements being prepared.

Strategic guidelines: land management and tenure

17. Ensure land ownership and management arrangements are identified early for all land affected by a proposed trail.
18. Continue to establish local committees of management for trails on Crown land.

Need for connectivity loops and circuits

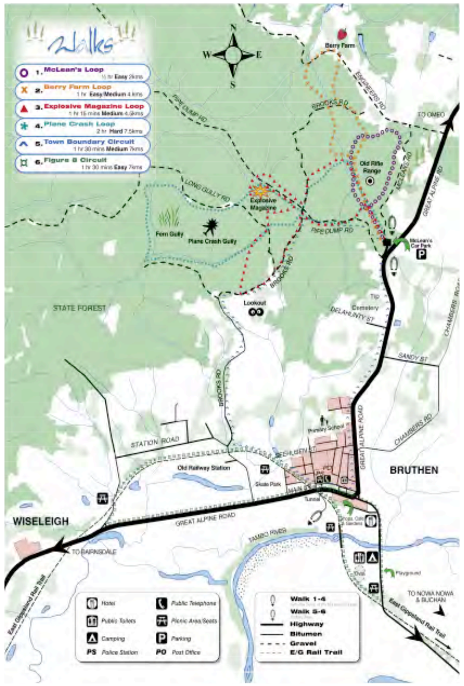
Most trail users do not want to retrace their steps when using trails. Loops and circuits are more stimulating and practical for users.

Trails should be developed as circuits, interconnecting routes, and loops. In peri-urban or bushland trails connections should be made to: local urban shared paths or footpaths, regional trails, and/or trailhead facilities.

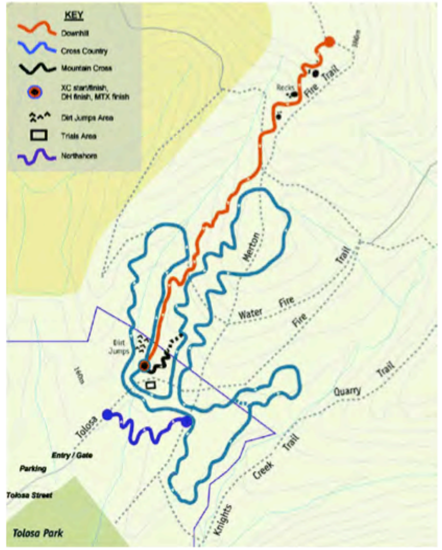
Loops and circuits can be developed through utilising waterway, transport, and utility corridors, as well as existing reserves.

The following images illustrate loops and circuits that may be created in urban, peri-urban and bushland settings.

EXAMPLE OF PERI-URBAN TRAIL CIRCUITS



EXAMPLE OF BUSHLAND TRAIL CIRCUITS



EXAMPLE OF URBAN TRAIL CIRCUITS

Stakeholders indicated that some trails have been established in isolation of existing trails – thereby limiting opportunities for linkages, connections and short self-contained loops. Other trails have gaps and obstacles such as locked gates – thereby limiting their appeal and use. Other paths are discontinuous.

Stakeholders identified that many trails do not connect to neighbouring residential areas.

Mountain bike trail alignment

Many walking tracks have evolved along the shortest route; along the easiest way around, or through vegetation or other obstacles etc. These often are too steep, have tight turns, or go to sensitive areas that cannot withstand wear from mountain bike tyres.

Council should ensure that trail builders have relevant experience or are prepared to undertake training from experienced trail builders.

Strategic guidelines: routeway planning in bushland settings/sensitive areas

19. Council will use the principles established by the IMBA as a guide to designing and locating mountain bike trails and ensure that track builders have relevant experience. See ER4 in Part 3.
20. Trails must not go through sensitive areas unless specifically designed to address environmental impacts (e.g. though elevated structures).
21. Use loop, horseshoe or spur trails around sensitive areas whilst providing vantage points of features and managed points of access e.g. to riverbanks.
22. A trail should have a buffer and a single approach to a watercourse, so there is only a single impact point, rather than running on the waterway edge.
23. Mountain bike single tracks should not be provided in flora and fauna reserves or wilderness areas, where trail activity is inconsistent with management of areas dedicated for conservation.
24. Provide buffers between trails, riparian zones and wetland areas, to protect these fragile areas from trampling. See following image.

Neighbourhood/private land interfaces

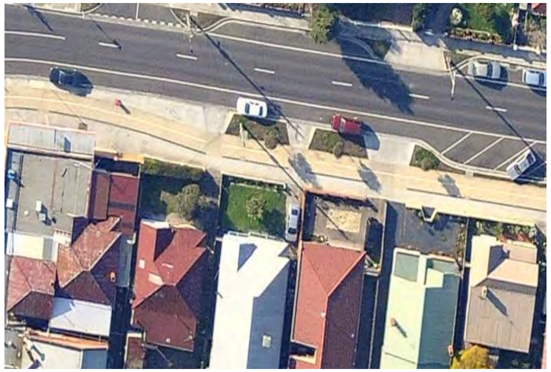
Conflicts can develop between trail users and adjacent landowners where trails travel between private land and waterways for example and where trails are close to rear yards. These conflicts can include: noise, leaving rubbish, lights at night, illegal camping, fires or security concerns.

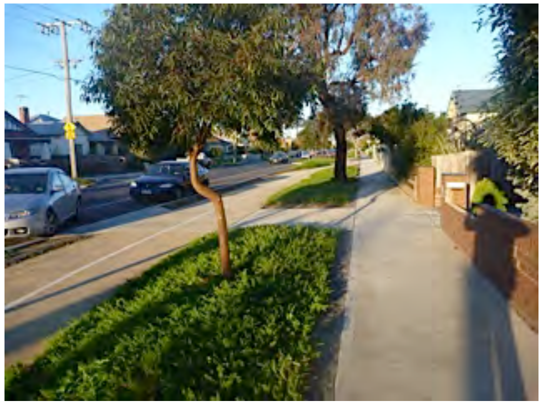
Shared trails should not be hard up against building lines, so as to provide greater response times and enhance sight lines from vehicles backing across paths.

Trails should not be designed in narrow corridors that make users or adjacent residents feel uncomfortable or insecure.

Trails along road verges

Trails can be provided in road verges where an open space corridor is absent. Roads can be placed to one side in the road reserve to allow a wide verge on one side, or where necessary, set the trail into the verge away from the building line to create good sightlines. See following images.





In the street shown in the previous images, users of the shared trail have priority over cars crossing into/from the side street. The shared trail is set away from private fence lines, and due to potential high use, the footpath has been retained.

The separation of children from high speed traffic is desirable due to an undeveloped sense of judgment and therefore the inherent dangers. As indicated in Safe Routes to School[2] during the period between 1990 and 1996, primary and secondary school-age children accounted for about 30% of pedestrian accidents in Victoria.

Placing shared trails along major roads instead of lower order roads or through open space corridors exposes children to major air pollutants and noise.

[2] Safe Routes to School; Implementation in Australia. Australia Road and Transport Research 9 (3), 3-16; Rose, G (2000)

Strategic guidelines: road reserves and private interfaces

25. When planning trail alignments, consider the proximity of the trail to private property and seek landowner's support.
26. The trail corridor (especially in urban areas and when travelling at the rear or side of private yards) should be greater than 10m wide, to allow for buffers, views, surveillance, maintenance of the right of way, and to ensure the trail is not hard up against rear private fences.
27. Where urban trails are to be included in a road reserve, they should be provided along local roads rather than collector or arterial roads.
28. Trails along roads should be set away from the building line to enhance sightlines and response times.

Vegetation in trail design

Vegetation is important in trail design however vegetation alongside trails can:

- accelerate deterioration of surfaces
- obstruct sight lines
- create hazards if tree roots invade the treadway
- provide deep shadows that may make it difficult for the rider to see hazards, and
- generate debris that provides slip hazards

If vegetation overhangs the trail it will need to be maintained.

In trail design, vegetation should be used to:

- channel the walker/rider and contain the use
- act as a landmark and assist wayfinding
- retard trail erosion
- protect from the weather (wind and sun)
- provide a buffer or visual screen into and outside the corridor and insulate walker/rider activities etc.
- enhance the visual appeal of a trail corridor, and provide restorative values for trail users

Strategic guidelines: vegetation

29. Seek to design trails with appropriate corridor vegetation.
30. Carefully select species of trees for placement adjacent to trails, so as to avoid: issues with sightlines and interference from tree roots and from nuts, fruits and limbs falling onto the trail.

Trail widths

The width of a trail determines who can use it and how many people can use it safely.

There are considerable risks associated with use of a narrow trail by different users such as cyclists, groups of walkers and dogs. These groups have different requirements, behaviours and travel at different speeds.

Obstacles too close to the edge of paths cause a hindrance and hazards to trail users. There is a history of serious crashes caused by obstacles such as fences and rails too close to paths and judges have found Councils liable for damages. [3]

Strategic guidelines: trail width

31. All double track trails should have a treadway of a minimum of 2.5m wide to allow two cyclists to pass safely.
32. In high use areas, and where cyclists and walkers need to pass, the width of trails may need to be considerably greater than this (up to 4m wide).
33. Paths expecting commuter traffic should be at least 3m wide.
34. Paths with heavy commuter and recreational traffic should be at least 3.5m, or paths for cycling and walking should be separated.
35. Single track trails in bushland settings maybe a minimum width of 300mm if they have a high degree of difficulty.
36. For a trail with a treadway of 2.5m the trail right of way needs to have an absolute minimum width of 0.3m or 1m preferred clearance on both sides of the treadway.
37. Trails in popular coastal locations should be greater than the minimum width recommended, and the right of way and the trail corridor should be planned to protect the trail from development and allow future increases in width.
38. A minimum vertical clearance of 2.5 m from the treadway is also required.

[3] Bicycle Network Victoria Good Design Guides; Paths Wide enough for Everyone

Treadway surface materials

There are a wide variety of different trails surfaces, often selected because of what is readily available and due to cost. Examples include; vegetated, native organic, wetland vegetated, floating organic, native fine mineral, mixed fines and gravel, sand, gravel, cobble/brick, imported gravel, gravel over geotextile, wood chips, timber/planking, corduroy, perforated metal (see following image), wire mesh, porous pavement panel, rock water crossing, concrete, reinforced concrete, asphalt, stone pavers and others.

Trail surface types are generally classified as:

- Unsealed
  - Unsealed formed trail
  - Unsealed reinforced trail
  - Unsealed track
- Sealed
  - Reinforced concrete
  - Concrete
  - Asphalt

Where possible there should generally be consistency in surface types and standards of trails for each trail type and hierarchy.

However, in peri-urban and bushland trail surfaces, it will be determined by physical conditions, local material, ecological sensitivity and projected use, the core visitor activity group and whether the trail is single or double track.

There is a clear relationship between intended visitor activity groups, tread material and the ability to manage the trail.

Unsealed trails

Unsealed trails are likely to be appropriate where:

- the area is of high environmental quality
- a seal would be inconsistent with a natural setting
- the topography is suitable to minimise erosion
- the use is high enough to keep the tread material relatively compacted
- low impact activities are important; e.g. park perimeter trails for jogging, equestrian trails and bushwalking trails
- a trail is required for specific activities: e.g. running, mountain biking, and BMX
- The accessible use by people with mobility aids is not a high priority
- paths are not likely to be regularly wet or inundated

Crushed rock toppings or loose sand/pebbles are not suitable for older adults and people with mobility aids and hence are not preferred trail surfaces.

Consolidated gravel pavement, or a material such as decomposed granite or similar surface materials are more appropriate for unsealed paths than crushed rock toppings or blue metal screenings (that leave large loose stones when fine ones wash away).

The colour of the surface material should be sympathetic to the colours in the surrounding landscape.

Unsealed paths will be susceptible to erosion.

Unsealed reinforced paths (those such as single tracks where there is no additional tread surface except reinforcements, berms, or drainage works and alignments are planned and designed) are required for MTB trails.

BMX tracks and trails require formed paths without rocks and roots in the surface material, unlike MTB facilities.

Timber slat trail: Wilsons Promontory

Sealed trails

In urban areas reinforced concrete is the most durable surface, however it is more expensive to construct than non-reinforced concrete or asphalt paths.

Asphalt surfaces typically are easy to repair, however they are susceptible to weed invasion and deterioration along the edge of the seal, and hence they require ongoing maintenance. See following image of edge deterioration on the Capital City Trail in Melbourne.

Sometimes two surfaces can delineate different users (e.g. walkers from cyclists in high use areas. See following image of St Kilda foreshore.

Other materials in adverse or ecologically sensitive areas may need trails to be other surfaces; such as timber or recycled plastic slats, wire or perforated metal.

Strategic guidelines: surfaces and accessible design

39. The colour of trail tread materials should be sympathetic to the surrounds.
40. Trail surface materials shall be stable, firm, relatively smooth and slip resistant in wet or dry conditions. In shaded or dark locations wire may be needed over some timber path structures to promote slip resistance and increase durability. See image following.
41. Cross falls on trail surfaces should be no steeper then 1 in 40.

42. Trails in urban and peri-urban locations should minimise the use of steps and seek to provide gradients suitable for users with prams and mobility aids.
43. To aid accessibility, use hard surface materials in easy locations and extend the width of the trail to 1m to enable wheels of a mobility aid to be contained on the treadway surface.
44. Where stairs are necessary on trails, use deep treads and shallow rises to allow people with mobility aids to be assisted to use such trails. See following image.

45. Where boardwalks or timber slats are used on elevated sections of easy trails, ensure these have curb rails or wheel stops.
    In wet locations these curbs should have gaps left at regular intervals to allow water to flow off the trails. See following image.

46. In urban locations trails should be designed to conform to an ‘accessible path of travel’ adjacent to steep slopes or waterways. Ensure a trail has adequate width for the safest passage of a mobility aid or wheeled recreational vehicles. See following image.

47. Alternate routes may be promoted for people using wheelchairs or mobility aids where views of features can still be seen if the feature is not directly accessible by trail. See following image.

48. Where sealed and unsealed surfaces are used together, care must be taken to ensure loose materials do not migrate onto the sealed surfaces and cause slip hazards.

49. Vegetation that has high leaf, nuts or twig fall (e.g. spotted gums) should be planted well back from sealed trail treadways.

50. Ensure surface materials brought in from other places are free from weeds and pathogens.

51. Plan for breakout spaces with facilities for resting and recuperation off trails.

5. Trail management

Maintenance and asset management

Effective management is dependant on continual maintenance. All trails need regular maintenance.

Maintenance programs can be quite expensive if outsourced to contractors. To minimise the overall cost, maintenance tasks can be separated and delegated between partners.

Primary trail maintenance activities should include:

- maintaining water-control structures, ditches and culverts
- fixing erosion/wash aways
- clearing fallen timber, rock falls or land slip
- keeping overhanging vegetation trimmed
- maintaining signage and trail markers
- maintaining bridges and technical features on free riding trails. These might include bridges, seesaws, berms, ladders etc. See following image.
- maintaining the surfaces of formed trails; with gravel, concrete or asphalt in a safe condition
- weed control on asphalt paths
- controlling sand drifts on coastal trails

Management plans are needed for significant and clusters of trails and these should clearly articulate:

- major tasks and frequency of these being undertaken
- clear identified roles and responsibilities and ownership of issues by each partner
- Identify how existing concerns are going to be addressed
- risk management processes

Strategic guidelines: asset management

52. All trails that are to be constructed and managed by others with Council support, need to have a management plan approved by Council.
53. Council should ensure that trails are an element of Council's asset management plan.
54. Ensure existing trails are maintained in a good condition and are not at the expense of new trail development.

Use of trails in the wet

In natural areas, wet tracks are more susceptible to erosion than dry tracks.

In urban areas trails are typically provided along watercourses, because of the availability of land. With increasing intensity of storm events trails will need to be sited carefully in waterway corridors, and the use of these trails will need to be managed.

Codes of conduct should deter riding in sensitive/erodible areas in the wet. Some tracks may need to be closed in extreme weather events.

Strategic guidelines: wet trails

55. Council should seek to educate riders about the damage to tracks in the wet: though codes of conduct, marketing and partnerships with club and peak bodies.
56. Siting of future trails along watercourses should minimise hazards to users, associated flooding and storm events.
57. Flood, emergency markers and warnings should be installed on trails in susceptible areas (see following images).

Impacts on residents and wildlife

In urban areas there are benefits of trails being lit to enhance safety of users (especially children) and to encourage sustainable transport at all hours.

Riders use mountain bike trails at night, and for endurance events.

Strategic guidelines: night riding; impacts on residents and wildlife

58. Consider the potential impacts of trails on adjacent residents and on wildlife in park settings, when determining the location of trails and whether to light them.

Management of conflicts between users

Potential conflicts between incompatible users needs to be considered when managing trails including unintended users, (such as motorbikes, remote control vehicles and dogs).

Prior to the construction of trails (especially peri-urban and regional trails), Council should undertake some modelling to project user numbers and therefore determine the form of trail and what its capacity will be.

In some peak locations – such as coastal promenade areas, trails for walking and cycling may need to be separated, as the need for a path greater than 4 metres wide may not be practical and effective to provide. If there is a mix of users (people walking and cycling at varying speeds) travelling in opposite directions, then once path user numbers rise above 150-200 per hour at any time of the day, then separate paths for cycling and walking should be considered.[4]

[4] Bicycle Network Victoria Good Design Guides; Paths Wide enough for Everyone

To prevent conflicts, suitable and expected use should be defined in onsite and offsite information, and a code of conduct prepared.

Any specific activities to be excluded on trails should be clearly identified.

Some single activity trails may be justified (such as walking only) and must be advertised offsite and signed as such.

Ski trails are often used for walking and cycling. Trails developed for walking are often used by mountain bikes, however these types of trails are not always compatible. See Appendix 4.

Strategic guidelines: managing conflicts

59. Council should undertake some modeling of projected user numbers of trails before construction.
60. Motorised recreational vehicles should not be allowed on trails with the exception of motorised wheelchairs and mobility scooters if travelling at a walking pace on trails appropriate for them.
61. Conflicts between users should be monitored, managed by codes of conduct and addressed by partnerships where they eventuate.
62. When existing trails or routes are being considered for further trail development, consider activities that may be displaced by the development, especially those that may be dependant on the inherent characteristics of the area, before the route is constructed.
63. Short trail duplications in some areas may minimise conflict between users such as dogs and cyclists in urban areas, and in bushland trails. Cyclists must be encouraged to give way to walkers.
64. Council should have a code of conduct for different types of trails and different types of activities.
65. Prevent off-leash dogs being on trails. On key trails for cycling; require dogs to be walked off the treadway and on-lead.

Animal management

Whilst dog walking is a very important activity in encouraging people to exercise, there are many areas where dogs should not be encouraged, especially off-leash, and in the vicinity of areas with wildlife.

Dogs and cyclists are generally not compatible on trails.

In routeway planning consider known fauna movements such as routes used by wombats, that provide risks to riders.

Strategic guidelines: dogs and wildlife

66. Do not provide trails through off-leash areas or across known fauna movement corridors.
67. Some trails may need to be fenced adjacent to where livestock are farmed.
68. Fencing/trail design may need to respect the movement of wildlife e.g. wombats to protect fauna and safety of riders.

Risk management

Risk management plays an important role in trail management. It will define maintenance decisions and has implications for insurance.

Risk management will need to be addressed in management plans, and will need to include regular trail inspections, a system for recording and rectifying issues and be built into planning, design and construction processes.

Creating public education and awareness of using recreational trails is very important when it comes to risk management, as it is extremely difficult to completely close trails. Therefore risk signage and raising awareness is the best approach for the safety of users.

Strategic guidelines: risk management

69. Provide management access points along key trails and avoid maintenance vehicles entering at multiple locations and damaging vegetation.
70. Consider mobile coverage when planning remote trails and providing pre-trip information.
71. Provide emergency vehicle access where technical sections of regional mountain bike trails are provided.
72. Provide standard emergency markers to assist with emergency services locating key trails. See the following image.

Information regarding risk

Sufficient offsite and onsite information as well as filters are required so as potential riders can make sound decisions about whether they should ride the trail.

Strategic guidelines: onsite and offsite information

73. Ensure information is provided for (onsite/offsite information) trail users about: degree of difficulty, accessibility (for bush trails; ride with others), hazards to look out for e.g. fallen limbs, washouts, land slips or inundation etc.

Graded challenges

Multiple loops (MTB) or runs of jumps (BMX) with graded challenges and good information (offsite and onsite) about degree of difficulty for each, will encourage the development of young riders and allow for riders to ride within their ability.

Strategic guidelines: graded challenges

74. Council will generally support technical features on trails where there are options for less proficient riders in the vicinity or in the same network, and where other agencies, clubs or user groups have the expertise to manage them.

75. Technical track features are important in catering for proficient free rider mountain bike riders. Providing challenges may minimise the chances of riders modifying or creating their own challenges.

76. Jump and MTB trail parks should have two or three runs of differing difficulty degrees that provide graded challenges, and allows modeling for young riders.

Treadway surface

Strategic guidelines: management of the treadway surface

77. The surface of trails should be consistent with the nature of activity and challenges expected for each degree of difficulty assigned to the trail.

78. The surface of urban trails should be maintained without trip hazards, potholes, broken pavement, wash outs or fallen obstacles etc.

Common hazards

Trail crossings of roadways and waterways often provide hazards for users: The change of levels and surface of trail at crossings are often a problem for cyclists.
Sightlines of crossing points may be too short, entries to the crossing may be steep, and trail crossings may not be obvious to car drivers. See following warning sign.

Strategic guidelines: waterway crossings and clearances

79. Road and waterway crossings should be well signed and carefully designed to minimise risk.

80. Vegetation should be trimmed to prevent user contact from low overhanging branches.

81. A minimum of 2.5m of overhead clearance should be maintained on all tracks.

Trails must conform to vertical and lateral clearances (see previous section on trail widths).

MTB Technical features

Strategic guidelines: MTB technical features

82. Technical features on mountain bike trails need to be designed by experienced industry professionals.
83. Technical features should have a B line (rollover), C lines or 'chicken runs', so a rider can bail or choose a simpler path around an obstacle or drop.
84. Trail entry points need to be controlled so a rider cannot accidentally enter a technical track.
85. Free riding and downhill trails should, where possible be designed with fall zones.

Riders building their own tracks and trails

The location of trails must be authorised by landowners: to determine site capability, suitability and sustainability <u>before</u> construction.

The impacts of unauthorised tracks is likely to be significantly greater than that of planned tracks as riders are not likely to know of any significant flora or fauna, or site capability data, water catchments and sensitive cultural sites.

Trails that have been developed by user groups without authorisation can contribute to habitat fragmentation, weed invasion and soil erosion. They also may create risk management concerns due to management issues and lack of access for emergency vehicles, see following image.

Strategic guidelines: unauthorised trails

86. If an unauthorised trail is found, Council should assess the risks to the public, communicate with users, and then determine appropriate management, demolition or relocation of the trail.

Monitoring

Over time trail requirements and expectations evolve, as does the form of trails with use.

Therefore as part of any asset management program, there needs to be a monitoring system to inspect trails for hazards and unacceptable wear, and to collect accurate and up to date records.

Users should be encouraged to report hazards and changes (see image above).

Some trails have camera posts for users to record changes in the trails. See example following on the Great Ocean Walk.

Monitoring is an important process in the planning and management phases for a trail, as it ensures the future of the trail is considered and will be monitored and reported on.

Trailhead facilities should provide opportunities for users to make comments and send feedback.

Strategic guidelines: monitoring

87. Build in a monitoring program of existing trails through asset management and user/committee management plans.

6. Information, communication and marketing

Information

All onsite and offsite information about all trails is essential to: allow for strategic planning; asset management; rider choice and safety.

Provision of accurate information about trails is essential and must be completed at the time of construction so one official set of information can be distributed to a range of sources.

Visitors are likely to be a key user group of all trails: as a way of getting around, as well as to experience local attractions (if they are able to access a bike, trails and associated facilities). Local accommodation outlets and businesses promoting general visitation to the area should be involved in the promotion of trails.

To coincide with where trails are being developed, Council should, through existing local services, support programs to foster walking and cycling, use of trail circuits for fitness training etc, and promote the trail through existing sports, recreation, community health organisations, walking groups, cycle clubs and through schools.

The clear naming of trails is important for assets management, identification and promotion. Naming of trails is typically poor on tourist information.

Trail location documentation

Good locational data is required for all bushland trails. Trail location documentation requires plotting the location of the trail in a geographic database. Documenting the alignment with a mapping-grade global positioning system (GPS) unit is best. The GPS unit can record geographic coordinates of a trail alignment that can overlay digital topographic maps or be downloaded into a geographic information system (GIS).

The GIS allows trail locations to be plotted over other geographic databases such as land ownership, soils and terrain. Accurate trail location information is also critical for agreements with landowners and land management agencies, and obtaining any legal right-of-way easements for a trail alignment. See following image.

Strategic guidelines: information

88. All trails should be mapped as part of planning and at the end of construction.
89. Routes should be included in Councils GIS as soon as they are constructed.
90. All trail routes should be published for potential rider information.
91. All trails should be given a name to enable clear and consistent information management.
92. Council could develop a trails website to become a one stop shop for all trail information within the Shire.
93. Council should encourage the visitor information centres, local accommodation outlets and businesses promoting general visitation to the area, to be involved in the promotion of trails.

Signs

Trail identification and directional signage should be consistent across trail types and the Shire, and easily read by all members of the public.

Where possible, signs should use: clear international symbols, the Australian walking track or IMBA grading, and images.

Track markers should be placed at right angles to the track or line of sight, be clearly visible and with the apex pointing toward the direction to be followed.

Strategic guidelines: trail signage

94. Provide directional signs at:

- All junctions of trails (unless the surface and hierarchy of one of the options is clearly lower than the main trail). See following image
- All junctions between trails and roads
- Any adjacent road system to guide cyclists to a path
- Suitable locations on major long distance trails and peri-urban trails to direct cyclists to important services such as toilets, water and food stops

95. Signs should be provided before a trail user gets to a junction in the trail.

96. Directional signage should highlight major known destinations first, before local specific locations e.g. Bairnsdale 5km, John Smith Reserve 1.5km.

97. Signs are desirable at key hazards:

- Where the trail is located close to water and at water crossings, signs should indicate water depths
- Where vegetation has been sprayed
- Where any seal ends
- Where there are works being conducted
- Where there have been washouts/landslips etc.

98. Key hazard signs should include:

- A location emergency marker (see previous image)
- Who to call to report hazards
- Brandings

Interpretative information

Where interpretative information along trails can be efficiently maintained, it can provide enhanced value to users, increase environmental and cultural awareness of users, and encourage environmental stewardship.

In areas where themes may be identifiable, trails could be badged using that theme: i.e. coastal walk, heritage trail, valley of the giants etc.

Strategic guidelines: interpretative information

99. For trails likely to attract high use and visitors, as well as those serving sites of biological or cultural significance, consider providing robust interpretative signage. See following image.

Community engagement

Community engagement and contributions may contribute capital costs; enhanced community pride; additional benefit to the local community in terms of recreation activity outlets, as well as ownership by local residents that mean they are more likely to help protect and maintain the assets.

Council should seek to utilise the local knowledge of trail users to assist with identifying risks, gaps and opportunities.

Strategic guidelines: community engagement

100. Trail projects initiated by and with community engagement should be given higher priority than those without.

101. Where possible, Council should encourage other partners and providers to survey users about their perceptions of existing trails.

Partnerships and users roles

Trails can have a broad range of users and hence represent a range of potential partners and benefactors. These include:

- State or Federal government departments
- Environmental groups
- Peak user groups and potential user groups
- Universities and schools
- Volunteer groups on behalf of the community
- Health agencies
- Parks, forest and waterway land management agencies
- The land owner and adjacent land owners

With the potential for so many partners, it is important to establish the role and responsibility of each group prior to construction.

Users of trails must be committed to behavior that is respectful of others, and to activities that are in keeping with the capability and suitability of the trails, location sitting and design, in addition to environmental sustainability.

To enhance this understanding of respectful use and environmentally sustainability it is essential that trail construction projects be undertaken in conjunction with potential users, local residents, clubs and peak bodies.

Integration of health programs such as VicHealth, Walk for Life etc. can be used to promote new trail developments. The focus of their work is promoting good health through programs of physical activity, social connection and mental health, which can be linked to the benefits of trails.

Communication with users

Where it is practical, communication with users should be encouraged to assist with monitoring the condition of trails and enhancing experiences and services to users.

Strategic guidelines: communication

102. Council should undertake regular communication with users, user groups, providers of related services, land management agencies and schools, about trails and trail related services.
103. In the planning of new trails Council should consider engaging with families, through schools.
104. Encourage users to pinpoint black spots, gaps in trail routes and circuits, and identify opportunities for new extended routes.

Volunteers

Volunteers are an essential element of trail development managed and programming of any event or organised events.

Strategic guidelines: volunteers

105. Where possible, Council will establish local committees to manage trails. These may be committees responsible for multiple trails in the one locality.

Promotion of trails

All trails should be mapped on completion, included in Council's GIS, and a map should be published for users, which provides information about each trail.

Offsite and onsite information about the nature of the trail, gradients, distances, surface, degree of difficulty, degree of accessibility, suitability for specific types of activities and associated facilities should be available in convenient formats, so that users can make informed choices about where to go and what to do.

The following image is from the Porirua Pathfinder System, developed in partnership between Porirua City Council in New Zealand and Explorer Graphics, to provide pre-trip information to people about the trails in Porirua.

East Gippsland Shire Council
273 Main Street
PO Box 1618
Bairnsdale Vic 3875

Tel: (03) 5153 9500
Fax: (03) 5153 9576
Email: feedback@egipps.vic.gov.au
Website: www.eastgippsland.vic.gov.au

EAST GIPPSLAND
SHIRE COUNCIL

Figure 2: Porirua Pathfinder