Growth Management Queensland

Draft Boonah to Ipswich Trail Plan

For consultation
December 2010

Tomorrow's Queensland:
strong, green, smart, healthy and fair

Toward Q Tomorrow's Queensland

Queensland Government

Looking forward. Delivering now. The Department of Infrastructure and Planning leads a coordinated Queensland Government approach to planning, infrastructure and development across the state.

The Queensland Government is committed to providing accessible services to Queenslanders of all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone the Queensland Department of Infrastructure and Planning on 07 3227 8548.

GSp_0029.005_Pu

Contents

1. Introduction 5
   - 1.1 Consultation on the draft Boonah to Ipswich Trail plan 5
   - 1.2 Steering committee 6
2. Background 7
   - 2.1 SEQ Active Trails strategy 7
   - 2.2 SEQ Active Trails implementation guidelines 8
   - 2.3 SEQ Regional Plan 8
   - 2.4 Planning context 8
   - 2.5 Environmental, economic and cultural benefits of trails 9
3. Trail planning for the Boonah to Ipswich Trail 10
   - 3.1 Ipswich City Council section: Flinders Goolman Conservation Estate 11
   - 3.2 South of Flinders Goolman Conservation Estate–North of Wyaralong Dam precinct 13
   - 3.3 Wyaralong Dam Precinct 13
   - 3.4 Lilybrook Station–Schneider Road 14
   - 3.5 Schneider Road–Boonah township 16
4. Trail design and construction considerations 17
   - 4.1 Project management and delivery of the trail 17
   - 4.2 Risk management 18
   - 4.3 Design considerations 19
   - 4.4 Construction considerations 24
   - 4.5 Trail signage 30
5. Trail management and maintenance 36
   - 5.1 Trail management plan 36
   - 5.2 Trail maintenance 39
   - 5.3 Marketing and Promotion 41
   - 5.4 Visual identity and branding 43
6. Maps 48
7. Bibliography 64

Appendix 1: Summary of Australian Trail Horse Riders Association (ATHRA) specifications and recommendations 70

Appendix 2: International Mountain Biking Association (IMBA) specifications and recommendations 71

Appendix 3: Boonah to Ipswich Trail graphic identity and signage guidelines 73

Appendix 4: Queensland Parks and Wildlife Services sign manual (brief summary) 74

Appendix 5: Horse stiles 75

Appendix 6: Submission form 76

Figures

Figure 1 Boonah to Ipswich Trail alignment 10
Figure 2 Flinders Goolman Estate 11
Figure 3 Wyaralong Dam Precinct 13
Figure 4 Tight and technical form of trail design 28
Figure 5 Figure Cross-sections for multi-use recreation trails 28
Figure 6 Optimum viewing distances for low position signs 35
Figure 7 Optimum viewing distance for high position signs 35

Tables

Table 1 Project management stages 18
Table 2 Threat to rare or threatened species 22
Table 3 Trail classification grade comparisons 27
Table 4 General trail maintenance 40
Table 5 Signage–branding matrix 46

1. Introduction

The Queensland Government is investing $8.8 million over five years to develop three new regional recreation trails. The trails were identified in the South East Queensland Active Trails Strategy as part of a regional trails network for South East Queensland. The trails will provide opportunities for residents and visitors to explore and experience some of South East Queensland's most scenic landscapes.

The Department of Infrastructure and Planning is developing the trails in partnership with five local governments—Sunshine Coast Regional Council, Somerset Regional Council, South Burnett Regional Council, Scenic Rim Regional Council and Ipswich City Council.

The Boonah to Ipswich Trail will be a 68 kilometre multi-use, non-motorised recreation trail connecting the communities of Ipswich and Boonah. The trail will also connect to the 40 kilometre network of multi-use and single-use recreation trails developed as part of the Wyaralong Dam precinct and Ipswich City Council's Flinders Goolman Conservation Estate, including Hardings Paddock Picnic Area and Flinders Plum Picnic Areas.

The Boonah to Ipswich Trail will pass through an extensive rugged and regionally significant scenic landscape dominated by native vegetation. Major features include:

- Flinders Peak
- ridges forming the watershed between Purga Creek
- Teviot Brook
- Logan River
- Bundamba and Deebing Creeks
- site of the Wyaralong Dam on Teviot Brook.

High points along the trail have views south and west to the Scenic Rim, east to the greater Brisbane area and Moreton Bay and north to the D'Aguilar Range.

The trail will provide outdoor recreation opportunities for current and future populations of South East Queensland, particularly the communities of:

- Greater Ipswich and the Western Corridor
- Ripley Valley development
- Southern Logan City
- Boonah
- Beaudesert
- proposed urban centres of Greenbank Central, New Beith and Flagstone.

By current estimation, in 2026 these neighbouring communities will have a combined population of approximately 640 000.

1.1 Consultation on the draft Boonah to Ipswich Trail plan

The purpose of this document is to provide relevant stakeholders, in particular adjacent landholders, a guide to the planning, construction and management of the proposed Boonah to Ipswich Trail alignment. Stakeholders are encouraged to provide feedback, express concerns, and submit proposals to enhance the trail.

How to have your say

Please submit your feedback on the draft Boonah to Ipswich Trail Plan to:

The Project Manager
Draft Boonah to Ipswich Trail Plan
Department of Infrastructure and Planning
PO Box 15009
City East Qld 4002

fax: +61 7 3224 4683
email: info@dip.qld.gov.au

For enquiries contact the department on +61 7 3227 8548. Electronic copies of the draft Boonah to Ipswich Trail Plan can be downloaded at www.dip.qld.gov.au/bit.

Closing date
Submissions close on 18 February 2011.

1.2 Steering committee

Wayne Wendt, MP Member for Ipswich West, is Chair of the Boonah to Ipswich Trail Steering Committee on behalf of Rachel Nolan, Member for Ipswich and Minister for Transport. The steering committee provides advice on effective delivery and planning of the trail to state agencies, Local Governments, regional natural resource management bodies, industry and community stakeholders.

2. Background

2.1 SEQ Active Trails strategy

The *South East Queensland Regional Trails Strategy* was developed by the Queensland Outdoor Recreation Federation in 2007 who acted as project managers for the Council of Mayors (SEQ). The four Queensland Government agencies—Queensland Health, (formerly) Sport and Recreation Queensland, (formerly) Department of Natural Resources and Mines, and (formerly) the Environmental Protection Agency—were then included in the planning process. The purpose of this strategy is to inform and guide future investment in recreation trail planning, development and management.

The trails identified in the *South East Queensland Regional Trails Strategy* will be an important component of the emerging *Queensland Greenspace Strategy* and the SEQ Regional Greenspace Network. Greenspace must connect with trails and lineal corridors must be protected for future trail and commuter pathways. This will provide South East Queensland's growing population with increased opportunities for outdoor recreation.

The Department of Infrastructure and Planning is responsible for delivering the recommendations of the *South East Queensland Regional Trails Strategy* and three of the nine regional trails identified in the strategy, which are the:

- Brisbane Valley Rail Trail
- Maroochy River Trail
- Boonah to Ipswich Trail.

Since the completion of the strategy in 2007, population growth projections for South East Queensland have increased. The State Government has announced its Toward Q2 targets and held a growth summit to address the challenges of a growing population. Furthermore, 18 local Councils have amalgamated into 11 local Councils. There has also been increased pressure and concern from the community to ensure protection of green space and to develop strategies to minimise impacts of urban development and population growth on the landscape.

The *South East Queensland Regional Trails Strategy* recommends coordinated action to achieve consistent information to assist regional trail planning and management including:

- developing consistency in definitions and methodology associated with the collection of data on outdoor recreation demand and participation
- developing consistent terminology and guidelines for spatial representation of digital trails data (maps)
- using the *South East Queensland Regional Trails Strategy* trail assessment criteria and methodology
- securing potential trail alignments and future trail alignment corridors identified within the strategy.

In 2009, a review of the implementation of the strategy and future trails development and management priorities was undertaken. Consideration to this and to the emerging *Queensland Greenspace Strategy* has been given In developing this strategy.

As a result, the department and the Queensland Outdoor Recreation Federation held public consultation workshops throughout the region with all Local Governments, other state agencies and community and outdoor industry organisations. The workshops provided the department with feedback which then informed the *South East Queensland Regional Trails Strategy*.

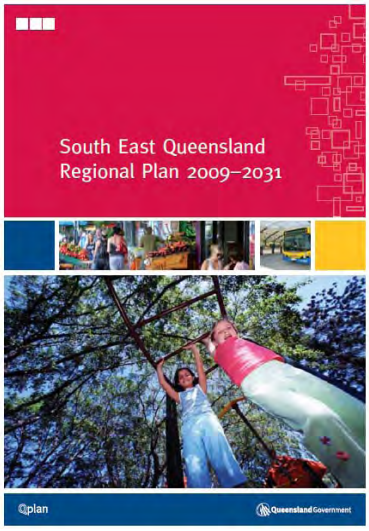
The strategy recommends nine regional trails and included a methodology to identify local and district trail networks. The strategy is now referred to as the *South East Queensland Active Trails Strategy* and provides the basis for recreation trail planning and promotion of trails in South East Queensland*.*

2.2 SEQ Active Trails implementation guidelines

This draft plan for the BIT has been formulated using the draft SEQ Active Trails implementation guidelines 1—A guideline for non-motorised, multi-use, land-based trail development and planning for local governments and trail planners. For more information regarding this document, please visit www.dip.qld.gov.au.

2.3 SEQ Regional Plan

The purpose of the *South East Queensland Regional Plan 2009–2031* is to manage regional growth and change in the most sustainable way to protect and enhance quality of life in the region.



The State Government reviewed the *South East Queensland Regional Plan 2005–2026* to determine appropriate action to address emerging regional growth management issues such as continued high population growth, housing affordability, transport congestion, climate change and employment generation.

The SEQ Regional Plan is part of Queensland's land-use planning framework. The plan informs Local Government plans and policies, non-statutory processes, planning for natural resource management, rural futures, traditional owner engagement, public transport, urban renewal and new growth areas at the district and neighbourhood levels.

Residents and visitors value the combination of diverse and culturally significant landscapes that shape the region's economy, culture, liveability and lifestyles. This quality and diversity of the region's landscapes are major reasons for migration into and within the region. To remain attractive and functional, the regional landscape must continue to support values such as biodiversity, rural production, scenic amenity, landscape heritage and outdoor recreation.

2.4 Planning context

The provision of recreation trails has been defined within South East Queensland's regional planning processes through principle 3.7.6 of the SEQ Regional Plan to 'review, refine and implement the South East Queensland Active Trails Strategy in consultation with local government'. Trails will contribute to the integrated regional community green space network policy 3.4.4 to 'define, identify and map a preferred future regional community green space network, including new regional parks, regional trails and corridors'.

The *South East Queensland Regional Trails Strategy* supports other strategies and policies of the SEQ Regional Plan, including the *SEQ Outdoor Recreation Strategy*, the *SEQ Natural Resource Management Plan* and the *SEQ Rural Futures Strategy*. Other guidelines such as Open Space for Recreation and Sport: Planning Principles 2003 will also assist planners preparing planning schemes.

2.5 Environmental, economic and cultural benefits of trails

Recreation trails deliver recreation, social and health benefits to urban users as well as adjacent rural and rural residential communities. Trails offer free, diverse recreational opportunities to families, residents, visitors, bicycle tourists, mountain bike riders, historical enthusiasts, horse riders and walkers.

Active recreation improves health outcomes and the increasing use of trails in South East Queensland is already saving health dollars. Approximately A$75 million annually can be saved if an extra 10 per cent of South East Queensland's population becomes more physically active. People can use trails in a variety of ways, depending on their abilities and preferences. The use of trails yields significant health benefits for both the individual and wider community. Trails provide a healthier community and relief from spiralling medical costs. They should be seen as an essential component of the health care system, and warrant funding accordingly (Maher Brampton Associates, 2001).

Trails also provide significant economic benefits in service and tourism industry, particularly in providing refreshments, meals, accommodation, camping supplies and group transport.

Research and other publications have addressed the economic benefit to local communities of regional and district recreational trails. Some examples are:

- In the United States of America, a comprehensive health economics study showed every US$1 invested in recreational trails for physical activity yielded a direct medical benefit of US$2.94 (Wang et al, 2005).
- The Riesling Trail (a 27 kilometre shared-use rail trail in South Australia) injects A$1.08 million per year into the Clare Valley wine region (Market Equity, 2004).
- Visiting trail users on the Mundaring trails network in Western Australia, which includes the Mundaring Railway Reserves Heritage Trail, inject a total of A$10.39 million annually into the local economy (Jessop and Bruce, 2001).
- The Murray to the Mountains Rail Trail in north eastern Victoria is one of the better known rail trails in Australia. Recent research done on this trail (Beeton, 2006) found that average expenditure was A$258 per person per day.

3. Trail planning for the Boonah to Ipswich Trail

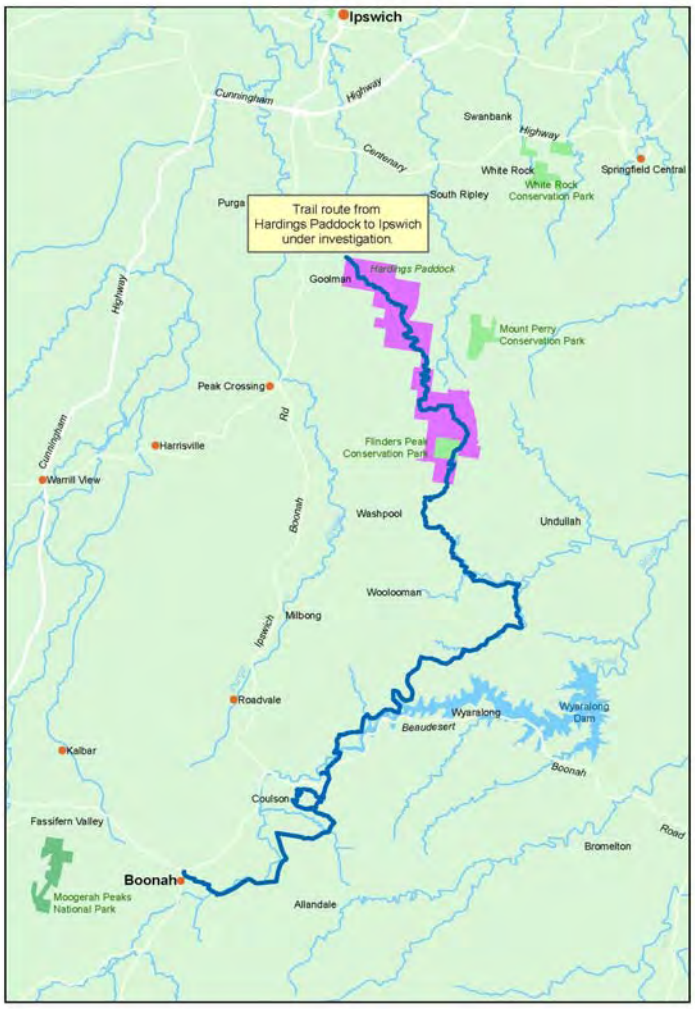
The 2007 South East Queensland Outdoor Recreation Demand Study investigated the nature and extent of participation in outdoor recreation activities by the residents of this region. The demand study provides State and Local Government agencies with the information to coordinate planning and delivery of outdoor recreation services to maintain current outdoor recreation opportunities.

Prior to the development of a recreation trail, future goals and priorities for land for public recreation must be determined. The variety of needs of trail users including horse riders, mountain bikers, hikers, nature watchers and dog walkers must be considered before a trail inventory is completed and planning begins.

It is important to obtain information on the type of trail the local community and visitors want. A survey of local users, residents and business will help determine demand for:

- user preferences (e. g. short walks, day walks, overnight walks)
- scenic preference
- permitted users and user groups
- location of trail alignment.

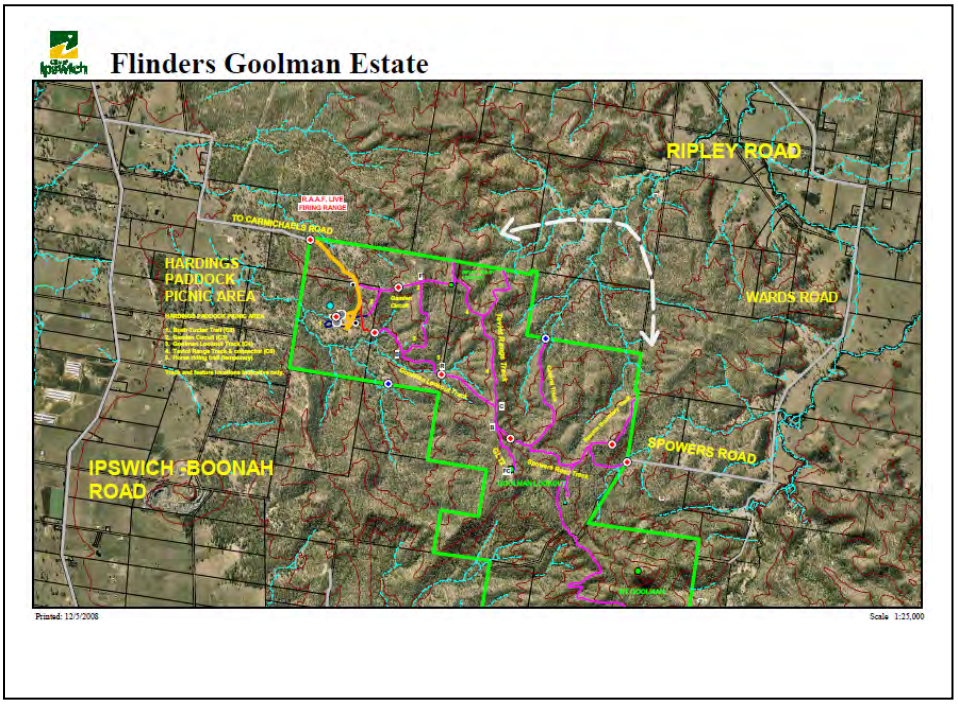
Figure 1 Boonah to Ipswich Trail alignment



3.1 Ipswich City Council section: Flinders Goolman Conservation Estate

Status: constructed
Maps: E5, E6, F5, F6, G4, G5 (see pages 60-65)

Figure 2 Flinders Goolman Estate



The 19 kilometre section of the Boonah to Ipswich Trail within the Ipswich City Council boundary is located in the Flinders Goolman Conservation Estate which is owned in freehold by Ipswich City Council[1]. The department has provided $100 000 in financial assistance for the planning and construction of this section.

The Flinders Goolman Conservation Estate will help cater for the recreation needs of the residents of Greater Ipswich and the Western Corridor, the Ripley Valley Urban Development Area, southern Logan City, Boonah, Beaudesert and the urban developments at Greenbank Central, New Beith and Flagstone.

Access to the Flinders Goolman Conservation Estate, the current northern terminus for the trail, is off Carmichael's Road, Purga. Hardings Paddock picnic area includes a trails network, picnic facilities, toilets, horse float parking and stock yards (images below).

Seven multi-use and single-use recreation trails have been constructed from Hardings Paddock picnic area including the Boonah to Ipswich Trail, which is on an existing management road.

[1] With the exception of the Flinders Peak Conservation Park which is dedicated as a conservation park, all lands in the Ipswich City Council conservation estate are freehold lands or roads rather than protected areas dedicated under the *Nature Conservation Act 1992*.

Further south is a smaller site, the Flinders Plum picnic area. This site does not have horse float access but does have a toilet and picnic facilities (images below). Two short trails start at Flinders Plum picnic area and the trail passes through the homestead site, which is approximately 500 meters east of the picnic area.

The trail continues to follow the existing management road from the Flinders Plum picnic area to the southern boundary of the Flinders Goolman Conservation Estate.

Most recreation trails located within the conservation estate are open for use. Further information on these trails can be found on the Ipswich City Council website.



Hardings Paddock picnic area



Flinders Plum picnic area

3.2 South of Flinders Goolman Conservation Estate–North of Wyaralong Dam precinct

Status: not yet constructed
Maps: C5, D5, D6, E5 (see pages 56, 58-60)

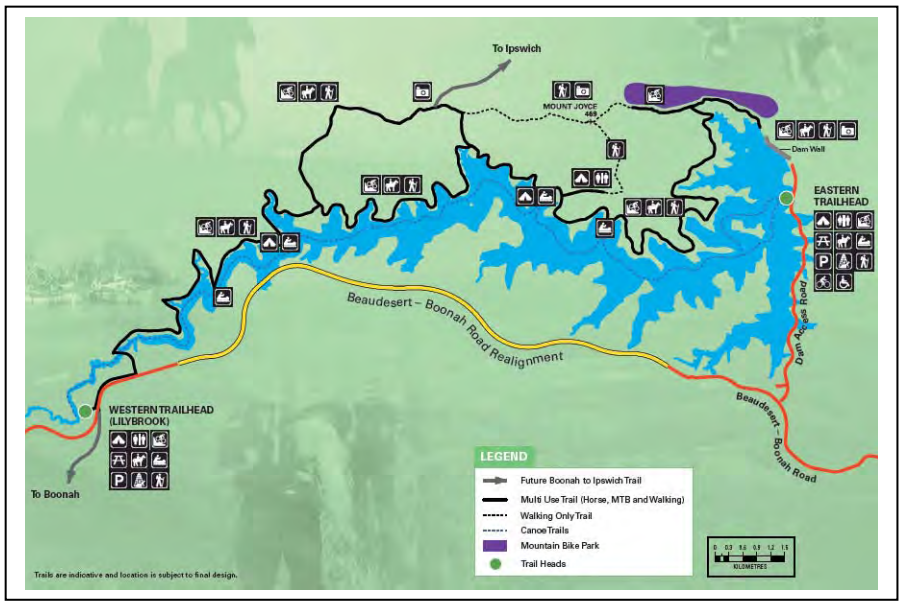
The southern boundary of the Flinders Goolman Conservation Estate links to the Wyaralong Dam precinct by public roads, most of which are surveyed but unformed through to Wild Pig Creek Road. The trail alignment follows Woollaman Creek downstream (southeast) from the eastern end of Washpool Road through to Wild Pig Creek Road at the junction of Woollaman Creek and Wild Pig Creek.

From this point, the proposed alignment follows the existing formed and maintained (unsealed) Wild Pig Creek Road heading southwest. The trail then crosses Wild Pig Creek at the base of a steep spur leading to the east-west ridge of Mount Joyce. This ridge is also the northern boundary of the Wyaralong Dam precinct.

3.3 Wyaralong Dam Precinct

Status: expected completion April 2011
Maps: B4, C4, C5 (see pages 54-56)

Figure 3 Wyaralong Dam Precinct



A 40 kilometre network of multi- and single-use trails which includes a purpose-built mountain bike park is being constructed by Queensland Water Infrastructure in accordance with the Wyaralong Dam Recreation Master Plan. This site is officially known as the Mount Joyce Escape Recreation Park.

The 14 kilometre section of the trail in the Mount Joyce Escape Recreation Park is a multi-use trail management road.

There will also be trail loops that cater for individual user groups. For example, mountain bike riders at Wyaralong Dam will have access to a purpose-built mountain bike park which was

planned, designed and constructed by Queensland Water Infrastructure in partnership with International Mountain Bicycling Association. The mountain bike park is north of the Mount Joyce Escape Recreation Park eastern trail head and will have tracks ranging from easy to extremely advanced.

3.4 Lilybrook Station–Schneider Road

Status: not yet constructed
Maps: B3, B4 (see pages 53-54)

This section of the trail starts at Lilybrook Station campsite and day use area and passes under the Boonah–Beaudesert Road via a stock underpass.

In the Wyaralong Dam Recreation Master Plan, Lilybrook Station is the proposed major western trail head consisting of campsite, horse yard and watering point for horses. The Lilybrook Station site has the potential to provide infrastructure that would be suitable to support the approved horse activities on the trail. It would also be suitable for outdoor education along with step-off points for bushwalking, mountain biking and canoeing.

The Lilybrook Station site is being developed by Queensland Water Infrastructure with the following features:

- existing yards and holding paddocks available for equine use (minor repairs required)
- a loading ramp
- significant cleared, flat areas around the property ideal for equine events or for groups such as scouts and guides in large scale tents or other forms of temporary accommodation
- the access road to the western trail head will be upgraded (but will remain gravel) to ensure safe entry and exit from Boonah–Beaudesert road
- a circulation access road will be created to enable cars and vehicles with floats ease of turn around
- informal parking will be available to the western side and rear of the homestead
- the Lilybrook Homestead will be converted to offer amenities such as showers and toilets for trail head users. The homestead could be developed by future user groups or commercial interests to include various amenities such as toilets, showers, changing facilities, kiosks or a café, an outdoor shop and hire, meeting rooms or administrative space
- in the general vicinity of the homestead is a series of shed and outbuildings. A barn could serve as outdoor education and catering facilities. The remaining out buildings will be developed as potential overnight style accommodation, group activity rooms, meeting and lecture rooms or club and administrative areas for user groups
- a canoe entry point will be close to the trail head at a naturally formed water hole to provide for water access at the western end of the dam. A secondary entry point has been provided for off the Old Beaudesert–Boonah Road heading towards Beaudesert after leaving the entrance to the Lilybrook property
- dam and trail access pathways will be created stretching northeast from the trail head to link it to the network of multi-use trails in the Mount Joyce Escape Recreation Park.

Queensland Water Infrastructure have identified that the site will serve the horse riding community, become a venue for outdoor events and will be an educational hub for school, university and corporate groups looking to conduct small group training activities in a natural or semi-rural setting.

This site will be utilised extensively by users of the trail and the Mount Joyce Escape Recreation Park.

The trail follows the crest of a gentle spur rising south towards the Goan's Hill ridge. This section of the trail crosses the proposed access road from the Boonah–Beaudesert Road to

the Wyaralong Trail Bike Park. After climbing to the crest of the prominent Goan's Hill ridge there will be the choice of heading directly towards Boonah via Schneider Road. A longer loop option (see map B4) via a day use area and view point (site to be confirmed) overlooking Boonah township and the Scenic Rim mountains. This longer loop option will join the main trail leading to Boonah.

There is potential for a bridle trail on the south side of the Boonah–Beaudesert Road for horse riding use only. This trail would be narrower and provide an advanced trail riding experience. Opportunities for other trail loops for all user groups are being investigated with horse riding organisations such as the Australian Trail Horse Riders Association as part of the development of the final trail alignment. Review of equine infrastructure and facilities and further outdoor recreation opportunities on this section of the trail will be in partnership with the Scenic Rim Regional Council. The partnership will, in particular, identify opportunities to deliver on the following recommendations from the *Scenic Rim Regional Council Sport and Recreation Plan 2010–2020*:

- **Recommendation 16**—A number of significant recreation trails have been proposed for the area including the Boonah to Ipswich Trail (incorporating the Fassifern Rail Trail), Tamborine Mountain Trails and the Logan to Beaudesert Trail.

  Each of these trails provide opportunities for increased economic benefits for the region; however, advice regarding the action of these initiatives is required.

  A Recreation Trails Plan could form part of the Scenic Rim's outdoor recreation strategy (Recommendation 15) or could be developed separately. The strategy will help guide Council regarding costs, design, feasibility and priorities for trails development.

  The development of the strategy may not be the responsibility of Council; however, Council will need to be actively involved in all stages to ensure the strategy aligns with other strategic goals.

- **Recommendation 20—**Walking and cycling are likely to continue to increase in popularity, so too will the demand on Council to provide safe, quality connections and meandering paths. Council, in conjunction with local community groups, should undertake a walkability and bikeability audit using available free national resources. Throughout the consultation process much information has been provided by communities for this plan and should also be included in the walkability and bikeability audit.

  This audit can be used to then develop a Walk Cycle Strategy. Such a strategy would prioritise connections for both on- and off-road opportunities. This will also guide budget and grant applications. The strategy should also look at regional opportunities such as cycle connections to Wyaralong Dam etc.

- **Recommendation 36—**Equestrian activities in the Scenic Rim are popular; however, attention should be given to ensure their long-term viability. Horse trails will be developed as part of the Wyaralong Dam Recreation Master Plan. This will present opportunities for equestrian providers to use this area as a base. A number of community groups have already expressed interest in the use and management of these facilities.

- **Recommendation 44—**Ensure the open space network meets the needs of the current and future population and provide clear forward direction for parkland provision. Review existing open space plans and coordinate the consolidation of these plans to:

  – ensure that standards for Council parks (size, quality, location and embellishment) are included in the planning scheme to ensure adequate provision of open space and appropriate park embellishments, particularly for emerging residential areas around the Scenic Rim.

– develop a park infrastructure asset register and parkland service performance criteria to ensure appropriate and cost-effective management and servicing.

3.5 Schneider Road–Boonah township

Status: not yet constructed
Maps: A2, A3, B3 (see pages 51-53)

This section of the trail starts at the intersection of Schneider Road and McConnel Road. It follows McConnel Road through the intersection with Dunns Road into Allandale Road. The trail then follows Allandale Road to Church Street, then right into Ley Road, left into East Street, right into McDonald Street and a left onto Dover Street.

The proposed Boonah terminus is in the Boonah Sports Reserve at the pedestrian bridge across Salt Gully at the intersection of High Street and Walter Street.

4. Trail design and construction considerations

This section of the trail plan addresses trail design and development. It provides a summary of how the unopened sections of the trail will be constructed and maintained. Development and delivery of the trail will be staged in line with available funding sources and the availability of resources.

Likely user numbers and sources, user experience and development and the possible development of complementary facilities and opportunities will be researched during the consultation period in partnership with the Boonah to Ipswich Trail Steering Committee, Queensland Outdoor Recreation Federation and the Queensland Trails Alliance. Work programs of project partners including the Ipswich City Council, Scenic Rim Regional Council and Queensland Water Infrastructure have also been considered and are provided as part of the draft plan.

4.1 Project management and delivery of the trail

The project consists of three main components.

1. Planning and consultation

- Plan and implementation stakeholder consultation and communication strategy
- Consultation with key stakeholder
- Review of sections of trail already constructed, e.g. Flinders Goolman Conservation Estate and Wyaralong Dam section
- Consultation on draft Boonah to Ipswich Trail Plan
- Analysis of submissions
- Amendment and release of final Boonah to Ipswich Trail Plan.

2. Construction

Construction of multi-use trail (north to south):

- Flinders Goolman Conservation Estate–North of Wyaralong Dam
- Lilybrook Homestead–Schneider Road.

Table 1 Project management stages

Stage	2010	April 2011	Mid 2011	End 2011	June 2012
*	Flinders Goolman Conservation Estate*				
*		Mount Joyce Escape Recreation Park (BIT)			
1				Lilybrook Station—Schneider Road	
2			South of Flinders Goolman Conservation estate to north of Wyaralong Dam		
3				Schneider Road—Boonah township	
4					Finalisation of long-term maintenance program

* in place or close to completion

3. Post construction

- Provision and input of maintenance schedule data
- Evaluation of trail delivery
- Establishment of management arrangements with Ipswich City Council and Scenic Rim Regional Council.

4.2 Risk management

A risk is the chance of something happening as a result of a hazard or threat that will impact on an activity or planned event and must therefore be managed. Risk arises out of uncertainty and is measured in terms of the likelihood of an event and the consequences if that event does occur. Ignoring risks that apply to the trail or events planned along the trail could impact on:

- the health and safety of trail users, staff, volunteers and event participants
- the reputation, credibility and status of the trail and its manager (or trail association)
- public and customer confidence in the trail manager
- the trail manager's financial position
- equipment and plant.

A systematic approach to managing risk is good management practice. With recent significant increases in the cost of public liability insurance and its decreased availability, the issues of risk and critical incident management are critical for organisations involved in the maintenance and management of the trail.

There are many benefits in implementing risk management procedures. Some of these include:

- more effective strategic planning
- better cost control
- increased knowledge and understanding of exposure to risk

- a systematic, well-informed and thorough method of decision making
- increased preparedness for outside review
- minimised disruptions
- better utilisation of resources
- strengthening culture for continued improvement
- creating a best practice and quality organisation.

The trail is close to a large population and is likely to be well used. It traverses a variety of landscapes and provides some significant challenges in the development of a risk management plan. The trail in general will be wide enough to accommodate several user groups; however, there will be risks associated with the use of the trail. Some of the risks are:

- encountering motor vehicles at the road crossings and on sections of the trail that use Local Government roads and management roads
- encountering conflict between user groups (especially horses and walkers, horses and cyclists, cyclists and walkers)
- encountering illegal trail users such as cars, four-wheel drives and trail bikes
- falling from high embankments where there are no barriers
- being caught in a bushfire
- being bitten by a snake.

Many trail projects have a maintenance plan in place. Such a plan clearly sets out items requiring regular inspection, frequency of that inspection and assessment, actions to take in response to degraded surface conditions or infrastructure and remedial action to rectify a problem or fault.

Section 5 of this plan provides general information about the need for ongoing maintenance of the trail. Clear records of each activity and inspection by the trail manager who has responsibility for maintenance of the trail are required. This will help maximise user safety and minimise liability risks. It will also provide a valuable record of works undertaken and make for efficient use of maintenance resources over time. For example, the maintenance of warning signage and clear sight lines at all road crossings ensures risks at these locations are minimised.

4.3 Design considerations

Trail design, construction and infrastructure will be governed by the types of users, environmental impact and adjacent landowners' needs. The trail will support the needs of its main users; however, this does not mean the trail must support its core users in all sections or locations. For example, horse riding is not permitted on certain sections of the Brisbane Valley Rail Trail for safety reasons, whereas on other sections horse riding is actively encouraged.

The design of the trail will consider potential conflict between users. For example, there is often conflict between mountain bike riders and horse riders due to the potential speed at which cyclists can travel without providing warning when they approach.

Safety provisions for trail users will be considered with some sections utilising public roads and management access roads. All sections of the trail will accommodate access for emergency and maintenance vehicles.

The estimated intensity of use and user demand for the trail will have a substantial influence on design, construction and management. Establishing current use and future demand through a consultation with key stakeholders will provide a baseline for minimum construction and design standards.

Trail users are generally categorised into two user groups: local residents and tourists. The use of sections of the trail by local residents of Ipswich and visiting family and friends will be taken into account.

The following will be collated prior to initiating design or construction of the trail:

- comprehensive maps showing cadastral boundaries, topographic features such as drainage lines and contours and aerial photos
- lot and plan numbers and ownership and uses of land adjacent to the trail
- linkages to other green space and land for public recreation
- information about the landscape and cultural heritage of the trail.

4.3.1 Trail user groups

The main users of the trail have been categorised in the following four groups:

Walkers—a walker broadly describes anyone who travels by foot on recreational trails. Walking includes all forms of recreational walking and a variety of trail experiences from a leisurely stroll in the local park to strenuous treks across rugged terrain. Walking may also involve exercising dogs, nature appreciation, bird watching or overnight stays. Walkers use both urban and rural trails. The majority of these types of walkers use trails for fitness and social reasons. Walkers in rural areas often seek a variety of trail experiences including more challenging trails that visit interesting natural features. They may be self-sufficient and carry adequate clothing, food and water for sustained and demanding walks. As individual fitness and expertise increase, these walkers often seek experiences in more remote and difficult terrain.

Mountain bike riders—there are a range of sub-groups which sit under the broad heading of mountain bike riders:

- Family, occasional or beginner mountain bike riders—these riders generally like short loops of fairly level terrain, with some challenges to introduce them to off-road cycling.
- Cross-country riders—cyclists of this nature seek moderate to very challenging terrain and like to get away from busy trails to areas of more solitude. They are usually self-sufficient, carry tools, water, food, spare tubes, maps and first aid kits. They like trails that include a variety of interconnecting loops that provide a 10 to 100 kilometre ride.

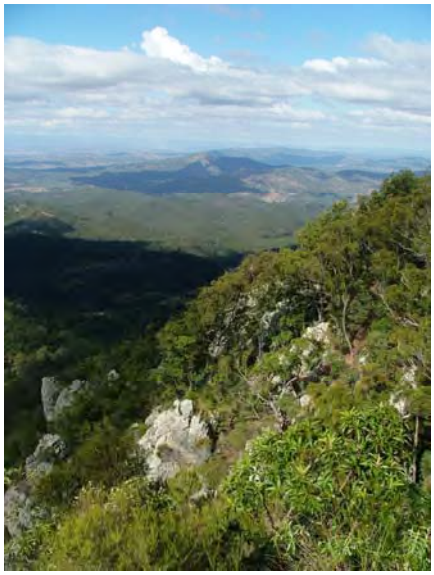
Runners—runners like to use a variety of trails ranging from urban, hard paved trails to more challenging experiences in rural areas. Orienteerers and rogainers may also traverse trails as part of longer distance navigation through the environment.

Horse riders—horse riders have been divided into a number of sub-groups:

- Recreational or weekender riders—these users will be looking to exercise their horses and ride in attractive rural settings for a few hours to a day-long ride. Traditionally their trails exist on roadsides and unmade roads. Trails with a durable tread that contain watering points are suitable for these riders.
- Long distance riders—these are non-competitive riders who often travel long distances along linear trails or on daily loops of up to 30 kilometres from a base.

All trail construction and planning will be done in accordance to the Queensland Parks and Wildlife Service *Walking Track Implementation Guidelines* (AS/2156.1 and 2—Walking Tracks) and with guidance from peak user bodies associated with multi-user recreation trails—the Australian Trail Horse Riders Association of Australia and International Mountain Biking Association. Queensland Outdoor Recreation Federation is also a key stakeholder in the planning and construction of the trail.

4.3.2 The environment



View from the summit of Flinders Peak

Awareness of the likely impacts of various recreational activities on nature conservation values require an understanding of geological substrate, soils, landform, vegetation, and the flora and fauna communities. Events such as fire and other forms of disturbance or change, natural or human induced, are often specific to particular species or groups of species of plant and animal. In cases where such effects are not fully known the precautionary principle will be exercised.

The principle embraces actions such as introducing activities in less sensitive areas with close monitoring of effects. Priority is given to rare or threatened species with a focus on threatening processes and the means to combat them.

Another important aspect of the surrounding environment is the highly valued scenic amenity of the Scenic Rim which has resulted from the combination of a variety of landscape qualities—peaks, rock crags, valleys, rural landscapes and continuous vegetation cover. Flinders Peak and Mount Joyce are distinctive landscape features and are visible from many elevated areas within South East Queensland.

Currently, Goolman lookout is the only designated viewpoint along the trail (refer to map G5). The alignment south of Flinders Plum Picnic Area has outstanding views to Flinders Peak, creating potential sites for lookouts. Further investigations are required to identify sites along the proposed alignment on the Mount Joyce ridge as well as Goans Hill (south of Lilybrook Station), which have views to the Scenic Rim Mountains, Boonah Township and Wyaralong Dam.

View from Goolman Lookout

View along the trail south of Flinders Plum Picnic Area

Flinders Goolman Conservation Estate
From Hardings Paddock Picnic Area to the Mount Joyce ridge, the trail passes through landscape which forms the watershed between the Bremer River system and the Logan River system. South of the Mount Joyce ridge the trail is within the Teviot Brook catchment which feeds into the Logan River.

This landscape is dominated by Flinders Peak and several other peaks separating the Logan River floodplain to the east and the Warrill Creek and Purga Creek floodplain to the west.

The scenic Flinders Goolman Conservation Estate consists of peaks, rock crags, valleys, rural landscapes and native Eucalypt forests interspersed with small patches of softwood scrubs and heath vegetation on the summits of the peaks. Flinders Peak itself is a distinctive landscape feature which is visible from many viewpoints within South East Queensland.

A series of sedimentary rocks (mostly sandstones) of the Marburg subgroup underlie most of the area. Igneous rocks, more resistant to erosion, form the main peaks.

From Hardings Paddock Picnic Area to the headwaters of Woollaman Creek, the terrain consists of a series of small valleys in forested hills rising to a system of ridges and hills trending south-east to north-west between the valleys of Purga and Undullah creeks. Several significant peaks are visible—the highest of which are Flinders Peak (680 metres), Mount Blaine (455 metres), and Mount Goolman (453 metres).

The Department of Infrastructure and Planning identified possible risks to the environment within the Flinders Goolman Conservation Estate and as a result commissioned a report on the assessment of nature conservation risks, impacts and opportunities for the trail. The section of trail under investigation was from Mount Goolman to Flinders Peak. The following table summarises the assessment of the threat to rare or threatened species in relation to the use of the trail.

Table 2 Threat to rare or threatened species

Species	Level of threat and recommended activity on the trail			
	Walking	**Walking with dog on leash**	**Horse riding**	**Mountain biking**
Brush-tailed rock-wallaby	No threat Minimise dusk and dawn activity	Some threat Avoid refuge areas and dusk and dawn activity	No threat Minimise dusk and dawn activity	No threat Minimise dusk and dawn activity
Koala	No threat	No threat Avoid night time activity	No threat	No threat
Black-breasted button-quail	No threat	No threat	No threat	No threat
Grey-crowned Babbler	No threat	No threat	No threat	No threat
Macropods	No threat	No threat Minimise dusk and dawn activity	No threat	No threat
Tephrosia sp.	Not known	Not known	Not known	Not known

South of Flinders Goolman Conservation Estate–North of Wyaralong precinct
South of Flinders Peak, the trail follows Woollaman Creek downstream where it joins with Wild Pig Creek. These creeks are part of the Logan River catchment. They flow into Teviot Brook downstream of Wyaralong Dam before flowing into the Logan River. This landscape features watercourses surrounded by prominent ridges.

After the junction of Wild Pig Creek and Woollaman Creek, the trail turns south-west following Wild Pig Creek upstream toward the Mount Joyce ridge which is the watershed between Wild Pig Creek and Teviot Brook.

Soils in this section are prone to erosion. During high rainfall events, both Woollaman Creek and Wild Pig Creek may be fast flowing and deep. The combination of erosion prone soils and potentially large flood flows will be addressed through trail design and construction.

Brushtail Rock Wallabies are recorded on rocky peaks in this section. It is likely that rock wallabies move between the breeding colonies on the rocky peaks. Continuity of habitat between the rock wallaby colonies provides for the conservation of the species. It is unlikely that the construction of the trail will threaten the colonies due to its minimal impact on the environment and landscape.

Wyaralong Dam Precinct (Mount Joyce Escape Recreation Park)
A prominent ridge running west to east leads to Mount Joyce. This ridge forms the northern boundary of the Wyaralong Dam precinct. A significant part of the dam precinct was selectively cleared for agricultural use with timber harvesting. Areas have been degraded through previous land use and weed invasion. This is particularly the case in the southern and western regions.

Habitat corridors in the dam area have been significantly disrupted by land clearing activities in the Teviot Brook area. A number of strategies have been employed to mitigate the impacts of the project, for example:

- rehabilitating habitats next to the Wyaralong Dam to compensate for those lost and to improve wildlife movement corridors previously impacted by land clearing
- creating new wetland habitats to provide local refuges for aquatic species impacted by level fluctuations in the dam.

An environmental impact statement and supplementary report were prepared as part of the broader Wyaralong Dam project. The following is a summary from the environmental impact statement:

- six regional ecosystems were mapped in the dam area including a variety of woodlands, swamplands, and fringing forests
- 300 native plant species are recorded
- weed control is an issue to be addressed in recreation management
- 37 species of mammal, 116 species of birds, 21 species of reptile and 17 species of frog were identified during the environmental impact assessment
- thematic interpretive signage will provide an opportunity for users to identify local flora and fauna and their associated ecosystems and foster an interest in care for the land based environment.

The environmental impact statement and supplementary report are published on the Queensland Water Infrastructure website at www.qldwi.com.au.

Lilybrook Station–Schneider Road
The trail follows the crest of a gentle spur rising south towards the Goan's Hill ridge then heads south-east to cross Sandy Creek at Schneider Road. The northern and western parts of Goan's Hill ridge are a mix of grasslands and various eucalypt species. The primary land use has been cattle grazing for many years and much of the original eucalypt forest was cleared.

Soils on the ridges are shallow and erosion prone. The Goan's Hill ridge is close to Teviot Brook and Sandy Creek (both of which flow into Wyaralong Dam) making management of erosion and sediment control important issues to be addressed through trail design, construction and management.

No formal ecological assessment has been undertaken for this area; however, the mix of grasslands, forests and woodlands provides habitat for Eastern Grey Kangaroos, and possibly Whiptail Wallabies, Redneck Wallabies, and Koalas.

Schneider Road–Boonah Township
The surrounding land uses are rural residential and cattle grazing. The trail follows quiet rural unsealed roads with views south to the Scenic Rim and Moogerah Peaks into the Boonah Township.

4.3.3 Adjoining landowners

It is important to consider the issues that may be raised by adjoining landowners and other interested and concerned people, and investigate what options are available for resolving any concerns.

Adjacent landowners who understand and support the reasons behind the trail, and who see the trail is going to be well organised and efficiently managed, will prove to be extremely valuable partners in years to come.

The opportunities also exist for adjacent landowners to consider business opportunities offered by the trail including bed and breakfasts, horse agistment and bike repairs for people who visit from elsewhere to enjoy the facility of the trail. Such users spend money on many things including food, accommodation, and transport costs.

The intention of this draft plan is to alleviate as many concerns of adjacent landowners as possible and to provide a mechanism to raise issues not already identified. The department is committed to further consultation with adjoining landholders and local communities as planning and construction of the trail proceeds which inturn will potentially minimise negative and unknown factors regarding the trail.

4.3.4 User preference

Users of the trail are likely to prefer a recreation trail that:

- complements and adds to existing high quality tourism product—for example, the trail is well integrated with key tourism destinations along the trail. Alternatively, infrastructure will be developed specifically near the trail such as a bike hire outlet/café, which inturn provides a meaningful and emotionally fulfilling tourism experience
- applies themes and design characteristics that relate to the local environment—for example, the BIT infrastructure and signage reflects the rural landscape and scenic amenity of the trail utilising recycled fenceposts and recycled materials wherever possible. The BIT logo reinforces the location and spectacular scenery of the trail with the image of the mountains included in the logo design
- is educational and acknowledges the historical and cultural context of the surrounding area—for example, the provision of information boards as well as sculptures or art works reflecting the creative population of Boonah will relate to and explain the local Indigenous and non-Indigenous history as well as providing points of interest
- enhances the natural environment through landscaping and planting—for example, removing introduced weeds and grasses and re-vegetation with native species. Any re-vegetation areas will be planted with native trees, shrubs, herbaceous plants and grasses, and fenced off from stock.

4.4 Construction considerations

The trail construction will be appropriate for its chosen site and intended users. Groups such as Australian Trail Horse Riders Association (refer to Appendix 1) and the International Mountain Biking Association (refer to Appendix 2) have produced specific recommendations for needs, specifications and infrastructure requirements for recreational horse and bike riding trails.

The trail will incorporate recommendations of both organisations such as rolling contours, trail surface requirements and trail width of a minimum 500 millimetre dimension. Trail construction specifically will meet the minimum requirements of the Australian Standard™ AS

2156.2-2001 Walking tracks—Infrastructure Design (refer to www.standards.org.au/) in conjunction with construction standards of the International Mountain Biking Association.

Section of trail within the Wyaralong Dam Precinct

The standard of the trail between the different stakeholders such as Queensland Water Infrastructure, Ipswich City Council and the Department of Infrastructure and Planning will differ. This is due to the adoption of different tenure, design and construction considerations of the separate organisations.

Ipswich City Council have utilised an existing management road that is now the trail alignment within the Flinders Goolman Conservation Estate (refer to maps G4, G5, F5, F6, E6, E5). South of the Flinders Goolman Conservation Estate heading towards Wyaralong Dam, the trail will follow existing surveyed formed (unsealed) and unformed roads (refer to map E5, D5, D6, C5). Queensland Water Infrastructure has constructed a purpose-built, multi-use recreation trail using International Mountain Bicycling Association's standards (refer to image above and maps C5, C4, B4).

South of the Wyaralong Dam (Lilybrook Station to Schneider Road, refer to map B4) the trail will be purpose-built using standards from the International Mountain Biking Association and Australian Trail Horse Riders Association as well as the Australian Standard™ AS 2156.2—2001. South towards Schneider Road the trail will join up with an existing surveyed unsealed road and will follow formed and maintained local government roads through to the Boonah Trailhead (refer to map B3).

4.4.1 Trail classification system

Ipswich City Council has classified the trail within the Flinders Goolman Conservation Estate. The following classification systems have been utilised on this particular section of the trail:

- Walking—Australian Standard for Walking Tracks
- Mountain bike riding—a difficulty rating under the International Mountain Biking Association Rating System
- Horse riding—South Australian Government's Trails Rating Classification for Horse Riding adapted from the draft *Recreational Trails Strategy for South Australia 2005–2010*.

The proposed classification system for the completed trail was originally developed by the Department of Environment and Resource Management to rate trails on the South East Queensland Horse Trail Network according to international standards in use throughout the recreation industry. This classification system has been endorsed by the Department of Infrastructure and Planning and key stakeholders for all multi-use trails developed within the *South East Queensland Active Trails Strategy*. Ratings are assigned under ideal conditions and are based on technical difficulty rather than physical exertion. Accordingly, track length is not generally considered when assigning a difficulty rating. Conditions are always subject to change due to weather and other acts of nature.

Classification system

 **Easy**

This classification is used to identify the easiest tracks that are suitable for users who do not have the skill or desire for more challenging trails. They have a lower level of risk for the user, and consequently offer less variety than those of greater difficulty. These tracks are appropriate for novice through to advanced users and require little skill or physical challenge to complete. They generally follow obvious, well marked tracks and roads. Grades on average are gentle (up to 5 per cent); although short sections of up to 15 per cent may be encountered. The track surface is generally smooth, level and wide with generous clearing of trees, limbs, and other vegetation. Few obstacles will be encountered. Changes in elevation are minimal. Streams are most often crossed with bridges.

 **Moderate**

Tracks in this classification rating are designed to meet the expectations of the majority of trail users. They require skills beyond that of a novice and will at times challenge the average trail user. These routes are suitable for intermediate through to advanced users. Users should expect to encounter terrain that is on average moderate (up to10 per cent); although some short steeper sections of up to 25 per cent may be encountered. These trails are generally narrower and may contain obstacles such as fallen trees or exposed roots and rocks. Changes in elevation are moderate. Streams are most often crossed by fording.

 **Advanced**

These trails are designed for users with advanced skills who are seeking a higher risk level. They are recommended for advanced through to expert users only and will provide a definite physical challenge. The terrain on average is steep (up to 15 per cent); although users should expect to encounter very steep and long sections up to 30 per cent. Users contemplating these tracks should have considerable skill in their chosen activity and have a high level of competence in outdoor skills such as navigation, first aid and survival. Trails in this category are rarely graded and may be indistinct or not be well marked in places. Minimal clearing of trees, limbs or other vegetation may result in hampering the progress of the user. Users can encounter frequent and sometimes difficult obstacles. Changes in elevation are usually severe. Streams are most often crossed by fording and are sometimes difficult.

Note: An option also exists to add a category at either end of this spectrum consisting of a white circle (easiest) or double black diamond (extreme). However, it is believed that the vast majority of the trail will fall within the proposed three-tiered system (easy, moderate, advanced).

Table 3 Trail classification grade comparisons

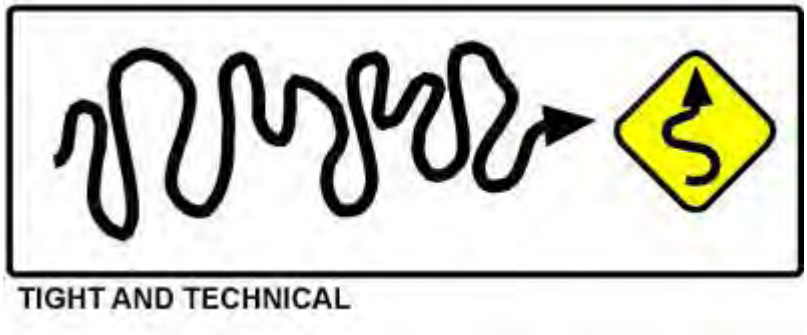
Organisation	Gradient (percentage / degrees)		
	Easy	**Moderate**	**Advanced**
ATHRA	Max 10% / 5.17˚	Max 15% / 8.53˚	Max 20% / 11.31˚
IMBA	Max 10% / 5.17˚	Max 15% / 8.53˚	Max 20% / 11.31˚
US Forest Service (Mountain bikes)	Less that 5% / 2.86˚ (average) Max. 10% / 5.17˚ up to 30m	Less that 10% / 5.17˚ (average) Max. 30% / 16.70˚ up to 100m	Less that 15% / 8.53˚ (average) Max. 30+% / +16.70˚ up to 150m
US Forest Service (Horses)	Less that 5% / 2.86˚ (average) Max. 15% / 8.53˚ up to 70m	Less that 10% / 5.17˚ (average) Max. 25% / 14.03˚ up to 100m	Less that 15%/ 8.53˚ (average) Max. 30+% / +16.70˚ up to 150m
US Forest Service (Hiking)	Less that 5% / 2.86˚ (average) Max. 20% / 11.31˚ up to 30m	Less that 12% / 8.33˚ (average) Max. 30% / 16.70˚ up to 100m	Less that 18% / 10.20˚ (average) Max. 30+%/ +16.70˚ up to 150m
US Forest Service (multi-use)	Less that 5% / 2.86˚ (average) Max. 15% / 8.53˚ up to 70m	Less that 10% / 5.17˚ (average) Max. 25% / 14.03˚ up to 100m	Less that 15% / 8.53˚ (average) Max. 30%/ 16.70˚ up to 150m
South East Queensland Active Trails (BIT)	**Less that 5% / 2.86˚ (average) Max. 15% / 8.53˚ up to 100m section**	**Less that 10% / 5.17˚ (average) Max. 25% / 14.03˚ up to 150m section**	**Less that 15% / 8.53˚ (average) Max. 30% / 16.70˚ up to 200m section**

4.4.2 Trail width and height

Most of the Boonah to Ipswich Trail will only allow non-motorised multi-use recreation users. It is recommended that multi-use trails have a standard trail width of 2.5–3.0 metres. An overhead clearance of approximately three metres from the trail surface will be required to ensure that horse riders have clear head space. The trail within the Flinders Goolman Conservation Estate and the Wyaralong Dam precinct are a minimum 2.5 metres in width.

Some sections of the trail, however, will be narrower due to the terrain and environmental considerations of track construction. The section which will be heavily influenced by environmental constraints will be from Wild Pig Creek Road crossing Wild Pig Creek which is at the base of a steep spur leading to the ridge of Mount Joyce. This particular section of the trail (refer to map D6) will require a tight and technical form of design and construction (image below). A tight and technical design is more difficult and has sharper turns, rougher surfaces and a narrower tread. They provide mountain bikers with a challenge while keeping speeds low, which will potentially decrease user conflict.

Figure 4 Tight and technical form of trail design



Source: International Mountain Bike Association

The two images below illustrate typical cross-sections for multi-use recreation trails as considered in the development of the Boonah to Ipswich Trail.

Figure 5 Figure Cross-sections for multi-use recreation trails

Source: Brisbane Valley Rail Trail Plan

4.4.3 Privacy

In all trail development and planning, adjacent landowners often have concerns in both urban and rural environments regarding privacy and security concerns. Privacy of all adjacent landowners will be respected and potential impacts will be alleviated as much as possible.

In some locations of the trail, techniques such as screen planting and planting of native vegetation will be negotiated with the adjacent landowner and incorporated in the design stage of the trail and included in the property management plan.

Note: Discussion and negotiations for screening will be handled on a case-by-case basis between the adjacent landowner and the department.

4.4.4 Trail surface material

Choosing appropriate materials for the trail's sub-base and topping (surface layer) is critical to the longevity and suitability of the trail for the intended user groups.

The trail surface within completed sections of the trail are:

- Flinders Goolman Conservation Estate—trail is on a formed, maintained graded dirt management road
- Wyaralong Dam precinct—trail has been constructed using a bench cut method with a smooth and compacted surface (image below).

For the yet to be constructed sections of the trail the surface shall be composed of compacted soil that can help resist erosion, while at the same time providing a durable tread that supports the needs of trail users. The trail will also utilise Local Government roads from Schneider Road to the Boonah township section which will be on a combination of sealed and dirt roads. Some sections may utilise the verge of the road and would be maintained as part of the local road works program.

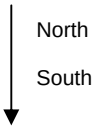
Trail surface within the Wyaralong Dam Precinct

4.4.5 Erosion controls and water crossings

Proper drainage construction ensures a lasting, maintenance-free facility. Fast removal of surface water and techniques, such as rolling contours, will be employed. On sloping landscapes, the trail will be constructed with water bars and, in some instances, surfacing will include soil stabilising products.

The proposed trail alignment will cross the following significant creeks:

- Flinders Plum Picnic Area heading east—Sandy Creek (map F5)
- Woollaman Creek (map E5)
- Wild Pig Creek (map D6)
- Sandy Creek (map B4)



Soil on the Goan's Hill ridge is shallow and erosion prone. The Goan's Hill ridge is close to Teviot Brook and Sandy Creek (both of which flow into Wyaralong Dam) making management of erosion and sediment control important issues to be addressed through trail design, construction and management.

4.4.6 Mitigating unwanted trail users

The unauthorised use of motorised vehicles on sections of non-motorised recreation trails is a major problem to adjoining landowners and trail users. In addition to regulatory signage and trail supervision by local authorities, trail infrastructure will be utilised to severely limit access to trail bikes and quad bikes.

Ipswich City Council has adopted a metal stile system to deter trail bike riders, along with signage. Particular sections, for example, from Wild Pig Creek Road up to the Mount Joyce Ridge, the trail will have a tight and technical design (refer to section 4.4.2.) which will make trail bike riding extremely difficult and not enjoyable. Should infrastructure be required in locations on the trail, horse stiles will be installed as per the Queensland Park and Wildlife Service design manual (see Appendix 4).

Metal stile currently used by Ipswich City Council

Queensland Parks and Wildlife Service's horse stile as used on the Brisbane Valley Rail Trail

4.4.7 Trail furniture and infrastructure

The trail traverses through significant and diverse landscapes with scenic viewpoints and interesting lookouts. There are many locations well suited for trail side furniture (image below) which includes seating, shelters and interpretive signage.

The sites for all furniture and infrastructure will be developed in partnership with key stakeholders through the consultation phase of the development of the final Boonah to Ipswich Trail plan. This will also consider current infrastructure on completed sections of the Boonah to Ipswich Trail including Wyaralong Dam recreation trails and Hardings Paddock Picnic Area and Flinders Plum Picnic Area. Hardings Paddock Picnic Area consists of picnic facilities, toilets, horse float access and parking, and stock yards whilst at Flinders Plum Picnic Area a toilet and car park have been constructed. At this stage access and facilities for horses have not been established.

Example of trailside furniture

Infrastructure at Hardings Paddock

4.5 Trail signage

4.5.1 Recognised standards

Trail construction, classification and signage will comply with recognised Australian Standards to ensure a high-quality and safe experience for all trail users.

Signage on the trail will adhere to the Queensland Parks and Wildlife Services signage standards and the Boonah to Ipswich graphic identity and signage guidelines (refer to Appendix 3).

Trail heads will display code of conduct signage, trail classification and an official trail head sign. At all entrances signage will include code of conduct and warning signs and totems with directional and trail classification indicators. There are a number of road crossings on the proposed trail alignment and therefore consideration for signage at road crossings is required.

4.5.2 Adherence to recognised standards

AS 2156.1—2001 Australian Standard™ Walking tracks classification and signage provides a classification system for walking tracks and is the basis for the signage guidelines. The standard provides guidance on the design, fabrication and use of trail markers and information signs to be used for walking trails.

There are no Australian standards for multi-use trails classification or signage so signage has been developed based on the Australian standards for walking tracks.

There are five types of trail signs that form part of the Australian Standards which are:
1. information signs
2. descriptive signs
3. interpretive signs
4. warning or risk signs
5. regulatory signs.

A sixth type of sign—event and temporary signs—has been included as an independent category.

Information signs
Information signs provide information relating to the trail and its use, including:
- registration and reporting recommendations
- equipment recommendations
- personal safety precautions
- environmental protection (minimal impact practices)
- skill and fitness level required
- specific conditions.

Descriptive signs
Descriptive signs specify information necessary for the safe and enjoyable use of the trail. Signs should be large enough to be read at some distance and will be mounted in a shelter at the trail head if it is the primary sign for trail information. Descriptive signs may include:
- type of trail (e. g. loop, one-way, return)
- effect of weather conditions
- elements of interest, trail conditions or difficulties (e.g. facilities, waterfall, slippery rocks)
- opening and closing hours of the trail
- distance to designated point
- estimated completion time
- direction of the initial course of the track
- graphic image/map for orientation.

Interpretive signage
Interpretive signage on the cultural and landscape heritage of a trail will not only add interest to the trail, but will also engage the trail user in other aspects and encourage increased use of the trail. Interpretation signs convey educational material about a natural or cultural feature on a trail. An interpretive plan including signage should form part of the overall trail plan.

Point of interest markers can also be used to identify a point or feature along a trail where there is insufficient information about the site to warrant the production of an interpretive sign.

Warning or risk signs
Warning signs play an important role in risk and safety management of recreational areas such as trails for three principal reasons:

- it informs users of dangers, safety issues and other relevant information
- it offers some protection to the land manager who is required to warn users of dangers, prohibitions and other safety information
- it provides an economic alternative to staffing visitor areas where there is a risk. Further investigations through planning and design considerations will determine specific localities for warning signage along the trail alignment.

Warning or risk signs advise users to particular danger or risk and should include the following information:

- appropriate pictogram identifying the hazard
- statement of danger or hazard
- statement of consequence
- statement of precautionary action.

Regulatory signs specify legal requirements and regulations associated with the use of a trail.

Event and temporary signs
Event and temporary signs be appropriate where an event or visitor attraction or service has limited and seasonal opening times. These signs may be subject to the approval of the land manager, the local planning authority for public roads and easements or the Department of Transport and Main Roads if it is on a major arterial road. Costs are paid by the applicant including the sign and advertising costs.

If a sign is erected for a period of less than nine months of the year it is classed as a temporary sign. A temporary tourist sign, however, can only be erected if the attraction is open to the public for more than three months of the year. The location and period of the event or road closure should be advertised through local print media and local visitor centres prior to the event or road closure. This requirement, however, will vary with local planning laws.

4.5.3 Trail markers

In relation to trail markers, the key recommendations of the Australian Standard 21.56.1—2001 have been applied to the trail. They are as follows:

- directional arrows will be positioned on a square background of a minimum of 100 millimetres by 100 millimetres
- directional arrows will either be at 90 or 45 degree angles only
- trail markers will be designed for durability and will be made of either aluminium alloy (at least 1.6mm thick) or galvanised steel (at least 1 millimetre thick)
- markers will have a reflective finish to assist with night-time identification and will be of a colour that is clearly visible within the landscape (e. g. blue, yellow, orange and red) while also considering the effects of weathering
- intervals at which trail markers are placed will be in accordance with trail classification and local site conditions such as vegetation, topography and weather
- trail markers will be placed at a consistent height above

ground (between 0–2 metres) and will relate to topographical conditions
- directional markers do not need to be placed at frequent intervals along straight sections of trail as the formation is clear and obvious, and even the most inexperienced of users will feel confident that they can remain on track. They will only need to be placed where the main trail deviates from the corridor or intersects with another trail network.

The multi-use recreation trail will accommodate two-way traffic, therefore trail markers will be bi-directional. Directional markers will be displayed in conjunction with square trail markers showing the Boonah to Ipswich Trail logo, the classification of the trail and the code of conduct sign for the safety of the trail user (see image to the right).

All other logos and branding (i. e. logos of the Queensland Government and land managers such as Councils) will be located on other signage at trail heads, information stops, shelters and major trail intersections. More information can be found in the Boonah to Ipswich graphic identity and signage guidelines (refer to Appendix 3).

Code of Conduct Signage—Do your part

Recognising that users will join the trail at any number of points, distance and direction signs will be installed at all trail entrances. This will provide information to users joining the trail at locations other than at trail heads and will provide additional information for users already on the trail.

The full code of conduct signage will be installed at every nominated trail head and entrance to inform all user groups about appropriate behaviour when sharing the trail to alleviate potential conflict between different trail users.

4.5.4 Emergency response signage

An emergency response plan will be formulated and will indicate all major hazards. A GPS reference/identifier (to be determined through a risk assessment) will be placed on posts for use in emergencies as well as a location aid for those in stress.

The emergency telephone numbers (000, 112 or 106 for text-based service) will be displayed at all trail heads on the trail head sign and clearly identify that the numbers will contact all three emergency services (fire, ambulance and police). Below is a description of the different phone numbers and how they work:

Triple Zero (000) is Australia's primary emergency service number and should be used if urgent emergency assistance is required from either police, fire or ambulance services. Australia also has two secondary emergency service numbers for use only in connection with particular technologies:
- 112 is the GSM international standard emergency number which can only be dialled on a digital mobile phone.
- 106 is the text-based emergency number for people who are deaf, or who have a hearing or speech impairment. This service operates using a textphone (TTY) or a computer with modem access.

Trail signs will also tell users which agency or body is responsible for the trail and associated infrastructure if there is a problem that needs to be addressed.

4.5.5 Trail head signage

As most users of the trail will be visitors from other regions who are not familiar with the local area comprehensive signage at trail heads is important. All trail heads will feature trail head signage displaying map panels, interpretive material and emergency information. The

standards for trail head signage are prescribed within the Boonah to Ipswich Trail graphic identity and signage guidelines.

Trail heads will be located at Hardings Paddock Picnic Area, Flinders Plum Picnic Area, the eastern point of Wyaralong Dam, Lilybrook Station and the Boonah Showgrounds. These locations have been chosen as they are easily accessible and have existing infrastructure.

Hardings Paddock Picnic Area and Flinders Plum Picnic Areas already have a host of signage and interpretive material installed (image below); however, trail-specific signage is yet to be established. Further signage required at both sites are:

- Trail logo—on totems along the trail and information boards
- Trail code of conduct—at entrance of the trail
- Trail information sign—at entrance of the trail
- Queensland Government acknowledgment.


Existing signage at Hardings Paddock and Flinders Plum Picnic Areas

Queensland Water Infrastructure will be responsible for establishing all trail-specific signage in partnership with the department. All signage will be in accordance with the Boonah to Ipswich Trail graphic identity and signage guidelines. Signage required at Lilybrook Station and along the trail will be:

- Trail logo—on totems along the trail and information boards
- Trail code of conduct—at entrance of the trail
- Trail information sign—at entrance of the trail
- Queensland Government acknowledgment.

Promotional signage

The Boonah to Ipswich Trail in its entirety will be a trail of regional significance which will attract potential tourists from other regions, interstate or overseas. The trail will have a number of promotional signs erected at major road crossings to promote the trail to tourists, motorists and other road users. Potential sites will be investigated along the Boonah–Ipswich Road and the Boonah–Beaudesert Road which provide good access to the trail. Installation of promotional signs has the potential to increase trail usage if placed close to trail head or points of interest.

Promotional signage has been used to great effect on other trails throughout Australia, including the Bicentennial National Trail, and has increased general awareness of the trail among the broader community.

4.5.6 General trail signage maintenance

Each trail head, road crossing and access point to the trail will be carefully checked to ensure that all required signage is present and clearly visible and legible. Long-term management will ensure that signage is in good condition and will form an important part of the

management schedule. An inventory of locations will be prepared to assist in regular maintenance.

4.5.7 Optimum viewing distances for trail head or roadside signage

The diagrams below are a guide to the preferred heights that offer optimum viewing to trail users and will inform the trail signage..

Figure 6 Optimum viewing distances for low position signs

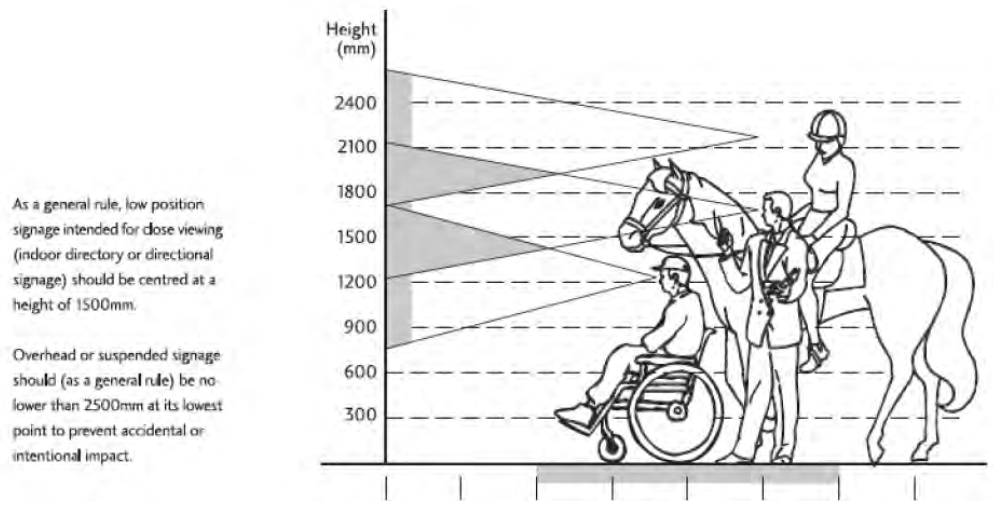
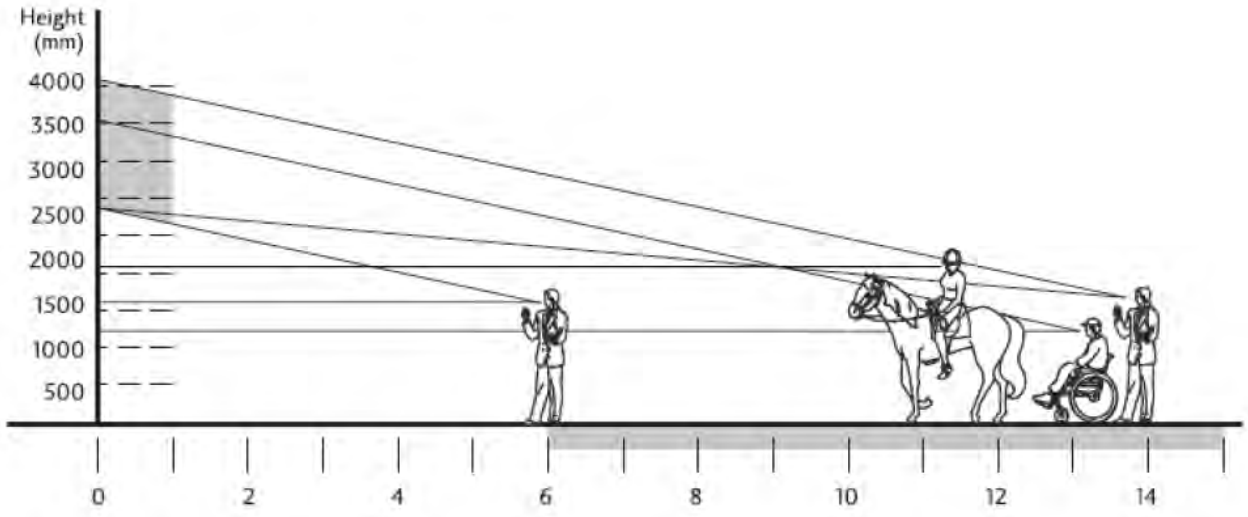


Figure 7 Optimum viewing distance for high position signs



5. Trail management and maintenance

5.1 Trail management plan

A trail management plan provides long-term and day-to-day management objectives for the trail. The plan should be flexible and responsive to change and set a clear management framework for future planning and priorities.

At this stage, a detailed Trail Management Plan is still in preparation. The following discussions set out many of the key issues that will inform the preparation of the Trail Management Plan.

5.1.1 Guiding principals

The following overarching management principles are suggested for the trail. These principles will serve as a guide to use, upgrading, management, maintenance and promotion of the trail:

Accessibility
The trail and associated networks are accessible by public and private transport from the major urban centres of Brisbane and Ipswich, and the townships, residential areas and villages of the surrounding districts.

Ease of access, including for the disabled
Where practical and appropriate, the trail will be developed or upgraded to enable access by people in wheelchairs and with disabilities, family groups and the elderly.

Providing enhanced outdoor recreation opportunities
The trail will be promoted as an additional component to the range of low cost outdoor recreation opportunities within the Flinders Peak–Karawatha Landscape Corridor.

Minimal conflict between trail users
The trail will cater for non-motorised trail users only (walkers, cyclists and horse riders) to create minimal conflict between user groups.

Providing access to, and an enhanced understanding of, the natural attributes of the area.
The region, and particular the Flinders Peak–Karawatha landscape corridor, has a diverse and outstanding range of physical attributes, and the trail will enable greater opportunities to access these natural features.

Quality promotion
The trail manager will give significant emphasis to promoting the trail as part of a broader visitor experience of the Scenic Rim region.

Effective and ongoing maintenance
The trail will be the subject of a regular maintenance regime, and a detailed audit every 2–3 years, ensuring that all defects along the trail receive quick attention, thereby keeping the trail up to the requisite standard and quality.

Quality construction
The trail will be built to appropriate standards and to a high quality, thereby minimising the need for maintenance and giving users a quality experience.

Quality information and outstanding interpretive material
The trail will have quality on-trail information (including brochures and mapping) and interpretive material as well as a professionally produced and widely available trail brochure and map. This will provide trail users with a greater appreciation of the more interesting features along the trail. A variety of distribution channels will be utilised. The trail will also be featured in other trail and tourism brochures.

Consistency and uniformity of signage
Signage is recognised as an essential element of a quality trail. All signage erected at trail heads, along nearby and adjoining roads and along the trail will conform with accepted standards and will maintain a consistent theme along the entire trail.

Adherence to recognised standards
Trail construction and classification as well as signage and trail markers will comply with recognised Australian Standards, thereby ensuring a high-quality and safe experience for all trail users.

Community involvement
The management and maintenance of the trail will consistently seek to involve the local communities and adjoining landowners along the corridor on an ongoing basis and in the formulation of critical decisions. This will ensure that the use of the trail does not impinge on private operations and that disputes are resolved, wherever possible, quickly and to the satisfaction of both the trail manager and the landowner. Ongoing involvement with other sectors of the community will ensure that the trail is meeting their expectations.

Trail user survey
Trail users will be surveyed on a bi-annual basis to ensure the trail is meeting their needs and expectations, and a survey of adjoining landowners and businesses will be undertaken to the same effect.

Regularly policed
The trail will be regularly supervised by a trail manager or ranger on an ongoing basis to deter and police unauthorised motor vehicle use, notably trail bikes.

Note that references to the trail manager do not necessarily imply a single person. It will be the entity responsible for ongoing trail management.

5.1.2 Initial management issues

Some basic initial questions need to be answered and some crucial decisions made. This will inform the development of the management plan.

Dogs on the trail
In the first instance, it is intended to allow dogs on all sections of the trail, provided they are kept under control, on a lead at all times and dog waste is collected and disposed of appropriately. If proximity to dogs or livestock on adjoining lands causes an unacceptable conflict or public safety problems, dogs may be limited to town and urban sections of the trail in the future.

Dogs are strictly not permitted in official conservation parks such as the Flinders Peak Conservation Park which is governed under the *Nature Conservation Act 1992*.

Camping
Camping will not be permitted outside of designated camp sites along the trail and on connecting trails and networks.

Ipswich City Council is in the process of completing the camp site at Hardings Paddock picnic area. Further designated sites for camping along the trail will be considered during the design stage and community engagement phase of the trail.

Vegetation management
In order to improve aesthetic and nature conservation values, the removal of introduced weeds and grasses and revegetation with native species will be undertaken. Revegetation is also important in some areas for visitor comfort, as some long sections of the rail trail are unpleasant to walk along on hot days due to the absence of shade. Any revegetation areas will be fenced off from stock and planted with native trees, shrubs, herblike plants and grasses.

The assistance of dedicated volunteer groups and programs such as Green Army will help ensure that revegetation programs are quickly implemented and successful.

Group usage policy
In natural areas in Australia, management agencies are looking to implement minimal impact policies to protect natural values. These policies can often involve limiting group sizes both on trails and at campsites.

The key management issue (at least in the medium term) is likely to be social sustainability or a sense of crowding on the trail, particularly given the forecast population growth in South East Queensland and the Ripley Valley. However, there has been limited work elsewhere on social carrying capacity of recreation trails and it is impossible to define what a socially sustainable level of use may be.

The Lilydale-Warburton Rail Trail on the outskirts of Melbourne has 100 000 user trips per year and there are no reported issues with social carrying capacity.

No formal group usage policy will be adopted at this stage until visitor numbers are monitored and user surveys are carried out to determine if there are issues with group usage.

While banning group horse riding activities would not be equitable, restrictions on horse riding competition and events are being considered including exclusion of the competition endurance rides and limiting numbers in any group trail ride event.

It is prosed that long-term visitor management for the entire trail will follow the current system involving the use of permits and codes of conduct. If groups are wishing to utilise the section of the trail within the Flinders Goolman Conservation Estate a permit from Council's Parks and Facilities division will be required.

Fire management
The trail manager will be responsible for implementing fire protection and management measures along the trail corridor. The aim of fire management is to ensure trail users and adjoining landholders are protected from fire commencing on or travelling along the trail. To reduce the incidence of fire starting from the trail all open and solid fuel fires as well as barbecues at any time of the year will only be permitted in clearly marked sites such as camping areas with a communal camp fire pit.

At visitor facilities, and other large grass areas that are not grazed, slashing will be used to reduce fuel loads. Where the reserve has tree cover or where revegetation is to occur, a buffer zone will be needed along the boundary. Alternatively, adjoining land owners will undertake seasonal grazing of the vegetated area to reduce fuel loads.

There are a number of other management issues that are being considered in consultation with project partners. As options and recommendations are developed, these will be posted on the trail website for consideration. Many of these will also be addressed as part of ongoing work on other strategies. These issues include:

Enforcement powers, procedures and responsibilities
These will be considered in the Emergency Response Plan and as part of finalising the management arrangements.

Complaints management
Procedures and responsibilities around managing complaints will be considered as part of finalising the management arrangements.

Communications and marketing
This will be considered in the departments communications strategy and as part of finalising the management arrangements.

On-trail events
It is worth noting that the recreation trails being developed as part of the Wyaralong Dam project have already seen mountain biking events such as the Maxxis Boonah Marathon. It is envisaged that a similar approach can be adopted in the future.

On-trail advertising
Regulations that govern roadside advertising appear to be the most appropriate.

Management of impacts on adjoining landholders
This covers issues such as fencing, privacy and trespassing and will set out how these will be dealt with. One of the guiding principles is that the trail manager will seek to involve the local communities and adjoining landowners on an ongoing basis in decision making processes. This involvement will ensure that the use of the trail does not impinge on private operations and that disputes are resolved, wherever possible, quickly and to the satisfaction of both the trail manager and the landowner.

5.1.3 Trail corridor protection

The South East Queensland Regional Trails Strategy recommends that potential trail alignments be secured to meet increased recreational user demand in the future. The Boonah to Ipswich Trail and other potential trail corridors will be included in relevant strategic plans management plans and, where appropriate, in local and regional statutory plans to encourage alignment of the trail.

The primary use of the trail is for community purposes as recognised in the definitions and provisions of regional plans and local planning schemes made under the *Sustainable Planning Act 2009*.

5.1.4 Property Management Plan

A Property Management Plan will be prepared separately and will address the following issues:

- weed control
- revegetation
- on-trail grazing and its impacts on revegetation
- fire management.

Additional matters that will need consideration include:

- legislative matters relating to weed control and revegetation in the corridor such as the *Vegetation Management Act 1999* and the *Nature Conservation Act 1992*
- future directions for a Property Management Plan
- identification of opportunities for the integration of recreational and property management planning activities along the trail.

5.2 Trail maintenance

The following table provides an overview of the type of maintenance work required on sections of the trail and the anticipated frequency of work.

Table 4 General trail maintenance

Activity	Site	Frequency
Undertake full inspection of the trail	Entire trail	Every 2nd month
Check signage and clean, replace or repair signage and directional markers as required	All locations	Every 2nd month at each trail inspection
Check trail surface and arrange repair as required; check for erosion at each inspection.	Entire trail	Every 2nd month Arrange repairs immediately if acute or schedule maintenance every 6 months
Maintain trail surface	Entire trail	Every 6 months
Sweep or rake debris from trail surfaces	Various locations	Every 6 months
Maintain culverts and other drainage measures	Entire trail	Every 6 months
Cut back regrowth	Entire trail	Every 6 months
Check structural stability of interpretive signage, and interpretive shelters	Various locations	Every 6 months
Undertake hazard inspection and prepare hazard inspection report	Entire trail	Annually
Check structural integrity of bridges	Various locations	Every 3 years
Undertake major repairs and replacements	Entire trail	Every 5 years
Undertake major repairs and replacements	Entire trail	Every 10 years

5.3 Marketing and Promotion

Marketing and promotion of the trail is essential and the associated recreation trail networks and facilities will play an important part of trail planning and development. It is vital to keep trail users informed, develop user surveys, promote use of the trail and ensure the local community is supportive and helps endorse the trail.

Successful marketing and promotion will improve and increase engagement by users, local community and businesses in using and promote the trail. It may also provide long-term management links with the trail users and the community.

5.3.1 Boonah to Ipswich communications strategy

The Department of Infrastructure and Planning has developed a comprehensive communications plan. This will assist with the delivery of marketing activities and targeting the right audiences with the right tools at the right time. It provides a means for a systematic approach to promoting the trail and surrounding region, but needs to be based on a clear understanding of the qualities and potential of the trail, the needs of the users, and the commitment of the local community.

The plan will support other communications, community engagement and consultation initiatives being undertaken by Queensland Water Infrastructure and Ipswich City Council.

5.3.2 Marketing and communication collateral

Roadside and trail head signage, brochures and information from visitor information centres are considered minimal sources of information. These have historically offered prime opportunities for the passing or casual visitor to be informed of local trails and be guided to access points along the trail.

Consideration will be given to creating a Boonah to Ipswich Trail website that enables different user groups to access information about different sections of the trail, animals and plants, and cultural and landscape heritage of the towns along the trail route. The website will provide:

- information for day, overnight or multi-day trail trips
- Information on places to stay and eat
- maps and brochures on the trail and individual sections (where available)
- images of the trail and places of interest
- online forms to provide feedback and ask further questions
- links to GPS coordinates and interpretive information in internet-based communications.

Word of mouth is an important and valuable means of information dissemination among families, friends and work colleagues. Viral marketing and the use of social networking sites such as Facebook or Twitter will provide significant community engagement and marketing opportunities for the trail. A Boonah to Ipswich Trail Facebook page has been created and to date has 60 members. The trail website will offer sign-up for free newsletters and regular information. The website should also offer sign-up functionality for free e-newsletters. An incentive to forward these e-newsletters to friends, family and colleagues could be provided by entering a draw for food and drinks vouchers sponsored from local restaurants or cafes along the trail. This would not encourage people to spread the word among their online networks, but also help stimulate local businesses and appreciation of the trail by local communities.

Many trail user groups have their own online communities established which they use for sharing information, photos, ideas, travel tips, etc. For example, www.meetup.com is an online community that allows people to find and start up groups based on their interests. In

the greater Brisbane area alone, there are four bushwalking groups that can be contacted online and provided with information about the trail. Community or privately run outdoor recreation websites provide cost-effective, or even free ways of promoting trails by featuring an online banner or trail-related news, editorial stories and images.

5.3.3 Trail interpretation plan

The trail interpretation plan will be developed to provide recommendations for interpretive signage and will contain stories that could be told along the trail. Interpretive signage is only successful if there are at least three important considerations in relation to the delivery of the message:

- something original and attention-grabbing about the primary signage
- sufficient challenge in processing the significance for it to require central processing in long-term memory
- interaction in a cognitive, effective and tangible fashion with some features of the message.

5.3.4 Community engagement and consultation

The involvement and enthusiasm of the local community are vital to the success of any recreation trail. If the local community takes ownership of a trail or trail network from the beginning, issues around management, maintenance, marketing and use of the trail can be minimised.

Trails present a wealth of opportunity for community involvement and interaction through volunteer programs, social events and general usage. By involving people in planning and developing trails, they feel more a part of the social fabric in which they live. As Burke (1998) points out ’an engaged citizenry is a critical determinant of the health of a nation’s stock of social capital‘. Trails can also provide cross-cultural experiences, particularly in small rural areas, as trails draw urban residents, domestic and international visitors.

It is essential that local residents are involved in the planning process and feel that their voices and concerns are being heard early on in the planning stage. Only then will they become enthused about the potential of the trail, in relation to health and fitness, educational benefits and economic opportunities. All consultation with local residents should be designed to develop an agreed vision among both the community and other stakeholders.

The local community has already been involved in some sections of the trail that have already been constructed. They will continue to be involved with all aspects of the trail and will be offered the opportunity to become champions or ambassadors and beneficiaries of the trail.

5.3.5 Trail volunteers

The Queensland Government's Towards Q2 ambition is to support safe and caring communities and to increase the proportion of Queenslanders involved in their communities as volunteers by 50 per cent. According to the Australian Bureau of Statistics, the type of organisations that individuals volunteer for is as diverse as our culture, but people are most likely to volunteer for sport and physical recreation organisations.
Recreation trails engage the community and encourage involvement and volunteer opportunities in every aspect of the planning, delivery, marketing, maintenance and advocacy of the trail.

The best summary of the roles of volunteer groups comes from the Rails-to-Trails Conservancy in the USA. From Designing Rail Trails for the 21st Century (Flink et al 2001) comes the following advice:

> *'The single most important function of a friends organisation is to act as an advocate for the trail, defending it when necessary and promoting it the rest of the time. Funding decisions often depend on public pressure, and money is generally allocated to projects with high public visibility.'*

The Rails-to-Trails Conservancy recommends the use of an adopt-a-trail (or a section of trail) program—a good approach for trails of anything over five kilometres. The Appalachianl, Bibbulmun and Gippsland Trail all use this approach.

Volunteer trail groups could undertake any number of tasks. It should be noted that, in many instances, the volunteer groups are not the trail manager. This responsibility will fall to a formal committee of management, a government agency or a Local Government.

5.4 Visual identity and branding

The department has developed a Boonah to Ipswich Trail specific visual identity which aligns with the recommendations given in the SEQ Active Trails implementation guidelines. The Boonah to Ipswich Trail branding will:

- build a strong brand that people recognise, want to associate with and feel they are part of
- raise people's awareness of the trail and its events and activities
- provide consistency across all trail-related communications materials regardless of who is creating and publishing it (e.g. the department, trail partners or volunteers.

It is essential that the visual identity is applied consistently in all Boonah to Ipswich communications materials and signage without exception. All communications materials and signage must be approved by the department prior to publishing.

The branding of the Boonah to Ipswich Trail consists of the following elements (for further detail refer to the *Boonah to Ipswich Trail—Graphic identity and signage guidelines*):

- trail logo (featured on the cover, so no need to show it again here)
- typeface including supporting font
- colour palette
- tagline On the right track.

Boonah to Ipswich Trail—Graphic identity and signage guidelines outlines the correct use of other logos such as those of Queensland Government and partners and provides a signage–branding matrix that helps identify what logos should be used on what type of sign. The

guidelines also provides information on how to acknowledge funding provided by the Queensland Government.

5.4.1 Trail logo

The trail logo (see below) follows the guidelines in the SEQ Active Trails implementation guidelines and includes the following features:

- rectangular shape
- dotted or dashed line representing the trail route
- typeface in capitals
- design elements that symbolise specific landscape/historic features along the trail, e.g. the trail logo includes the green mountain range of the Scenic Rim.

5.4.2 Trail typeface

Meta is the corporate typeface and Rotis Serif is the supporting typeface to be used within the framework of the Queensland Government's corporate identity and are recommended for consistent use in trail-related material.

Meta may be substituted by Arial in desktop-generated documents or when the corporate typeface is unavailable.

Verdana is the Queensland Government typeface for the web.

Trail colour palette

The colour palate of the trail logo are:

All trail-related marketing material and signage must use the identified colour palette.

5.4.3 Other logos

If the trail is funded by the Queensland Government, the Toward Q2 and Queensland Government logos are to be included on all marketing material. As of 2010, the trails program is linked with the Queensland Government initiative *Find your 30 minutes of activity a day*; and this logo needs to be included next to the Toward Q2 and Queensland Government logos if space allows.

Example of acknowledgement of the Queensland Government and related councils.

Following guidelines help with placement of government-related logos:

- The trail logo and government-related logos must not be placed too closely to other logos or each other, except for the Toward Q2 and Queensland Government logos which are placed next to each other with a divisional line in between them as shown above.
- Where possible, there should be sufficient space around the Queensland Government logos so that they cannot be misinterpreted as being part of another logo.
- Graphic elements in any marketing collateral should not overpower the Queensland Government logos.
- The trail and Queensland Government logos should be the same size.
- The Queensland Government logos should not be reproduced at less than the minimum size (13 millimetres high x 14.5 millimetres wide).
- The preferred position for the Queensland Government logo is top or bottom right of the front cover of materials. However, the logo may be positioned elsewhere according to layout requirements. The trail logo may be placed next to the Queensland Government logos.

The Queensland Government logos are managed under the Queensland Government Corporate Identity Guidelines. For access to these guidelines email corporate.id@premiers.qld.gov.au.

Similarly, any supporting regional or local councils need to be acknowledged through their Council logo. Specific Council corporate identity requirements apply.

5.4.4 Government funding acknowledgement

If Local Governments or other partners receive funding from grants for any trail-related projects from the Department of Infrastructure and Planning, they need to adhere to the department's funding acknowledgement requirements which are available at www.dip.qld.gov.au.

These guidelines outline the correct use of the Queensland Government logo, appropriate wording of acknowledgement statements and production of signage. It is a requirement to use the Queensland Government and Toward Q2 logo on all signage.

All new project and temporary signs relating to major infrastructure projects (for projects where the Queensland Government's contribution is $250 000 or greater) must now include an authorisation statement including the words: '*Authorised by the Queensland Government, xx Street, Brisbane, the printer's name and location as well as the date of the sign production or installation.* For example: Authorised by the Queensland Government, 100 George St, Brisbane. XYZ Printer, Brisbane. August 2010.

Please consult the revised signage policy in section 10 of the Corporate Identity Manual, available by contacting corporate.id@premiers.qld.gov.au.

5.4.5 Trail signage

The following matrix outlines the different types of signage along trails and provides guidelines on when to use the trail and Queensland Government logos as well as the trail web address on signage.

Table 5 Signage–branding matrix

	Trail logo	Trail web address *(still to be developed)*	Queensland Government/Toward Q2 logo*	Partner logos, e.g. councils
Information signs	√	√	√	√
Descriptive signs	√ (except for small, square trail markers)	√ (except for small, square trail markers)	√ (except for small, square trail markers)	√ (except for small, square trail markers)
Interpretive signs	√	√	√	√
Regulatory signs	√	X	X	X
Warning or risk signs	√	X	X	X
Event/temporary signs	√	√	√	√
Trail head signs	√	√	√	√
Promotional signs	√	X	√	√
Directional signs	X	X	X	X

* The *Find your 30 minutes of activity a day* logo is optional on signage.

5.4.6 Who does the visual identity apply to?

The visual identity applies to Local Governments, partners, sponsors and grant recipients associated with the trail must use the trail and the Queensland Government logos to acknowledge the government's partnership and funding support for the trail. All trail-related marketing material, regardless whether it is being produced by the Queensland Government or Local Governments, partners, sponsors, grant recipients or community volunteers, will need to utilise the established visual identity of the trail to maintain consistency and brand integrity.

Other Queensland Government departments may choose to use the trail visual identity in their own marketing material relating to the trail. The Queensland Government Corporate Identity Guidelines apply in this instance.

5.4.7 Approval of trail-related marketing and signage material

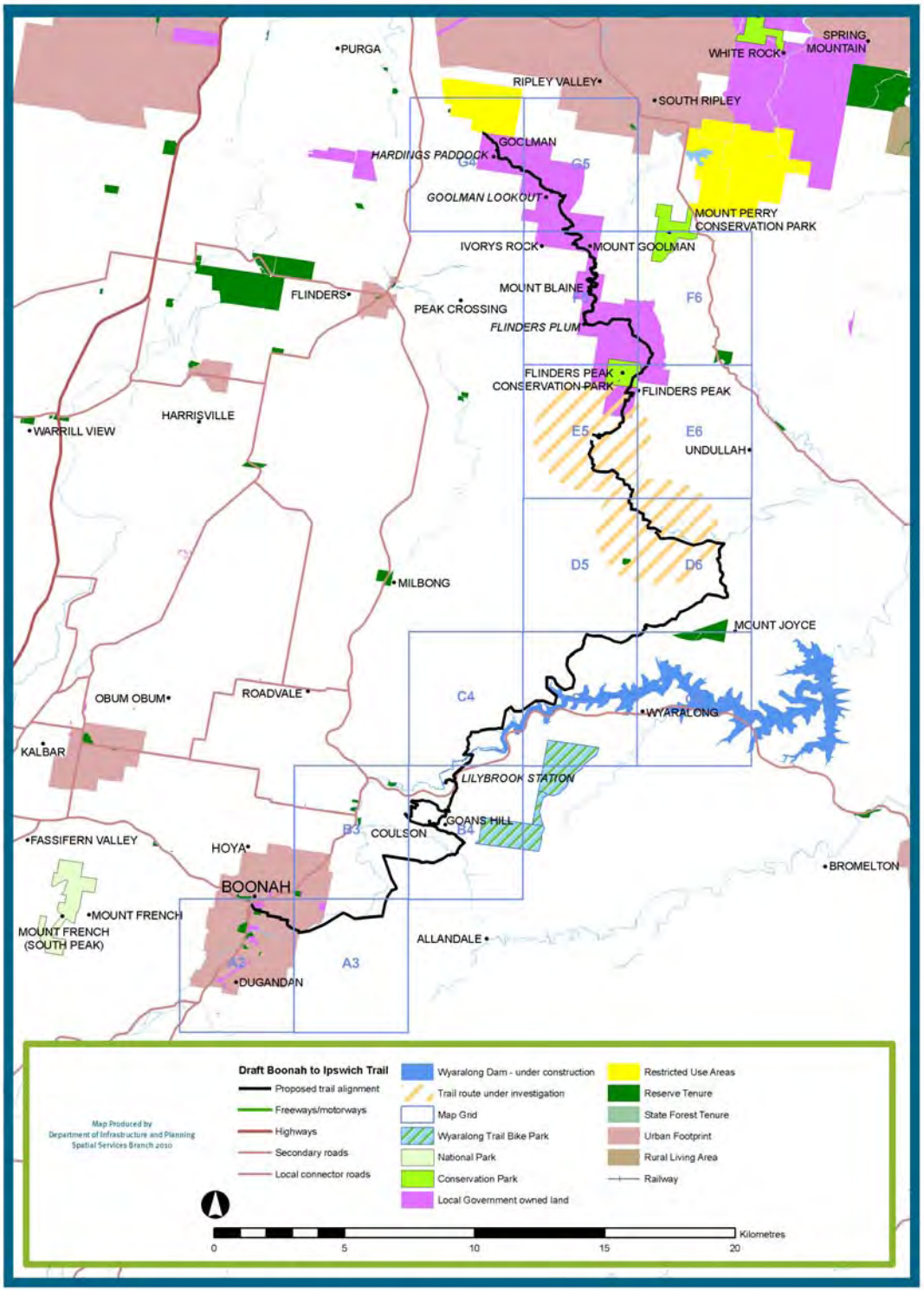
Any marketing material, including newly developed trail logos and signage, must adhere to the visual identity and branding guidelines set out in the Boonah to Ipswich Trail graphic identity and signage guidelines.

Approvals for any marketing material must be sought prior to publishing by contacting:

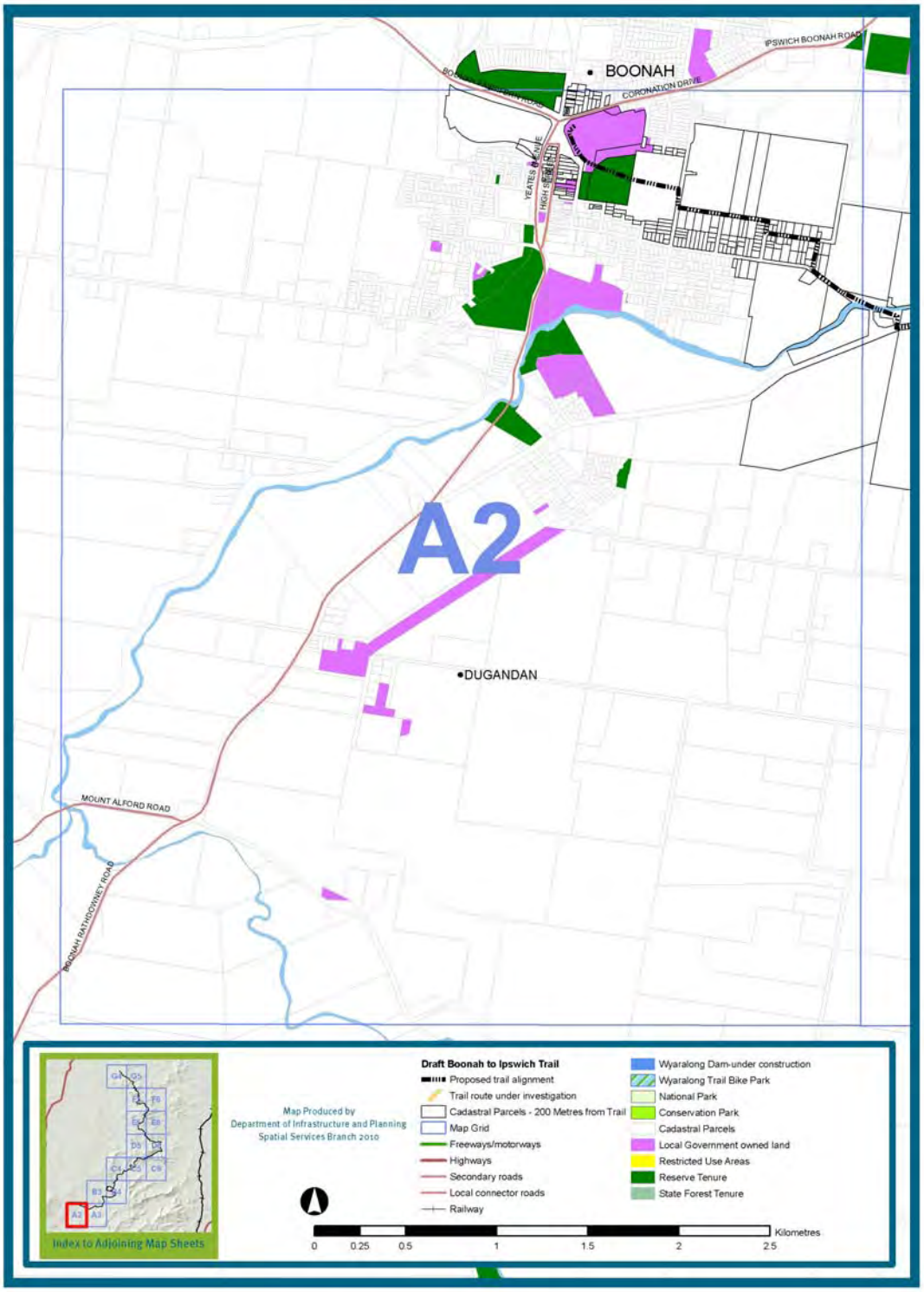
GMQ Communications
Department of Infrastructure and Planning
tel: 07 3227 8548
Email: EnquireGMQCommunicat@dip.qld.gov.au

6. Maps

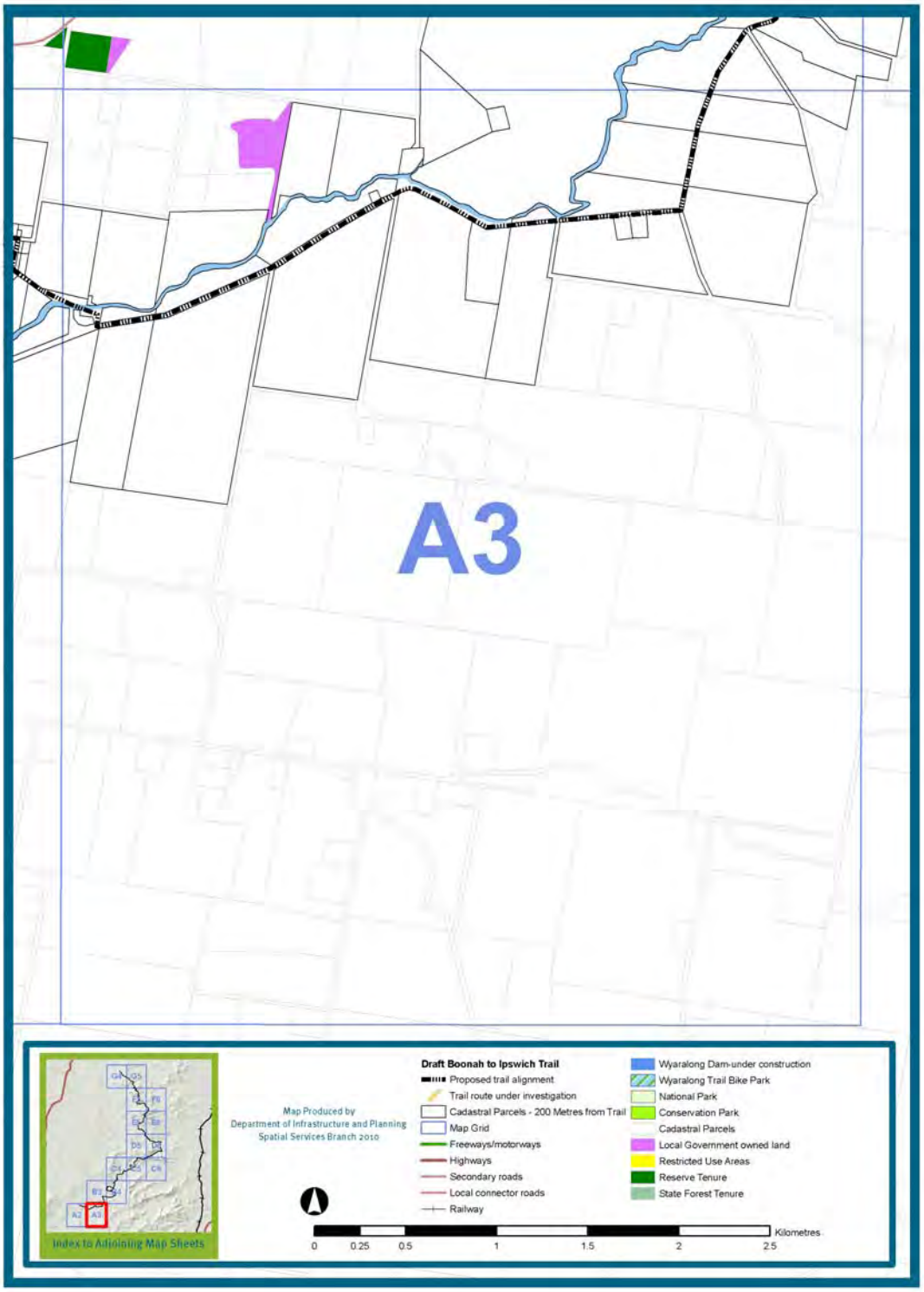
Map 1—Overview of trail route



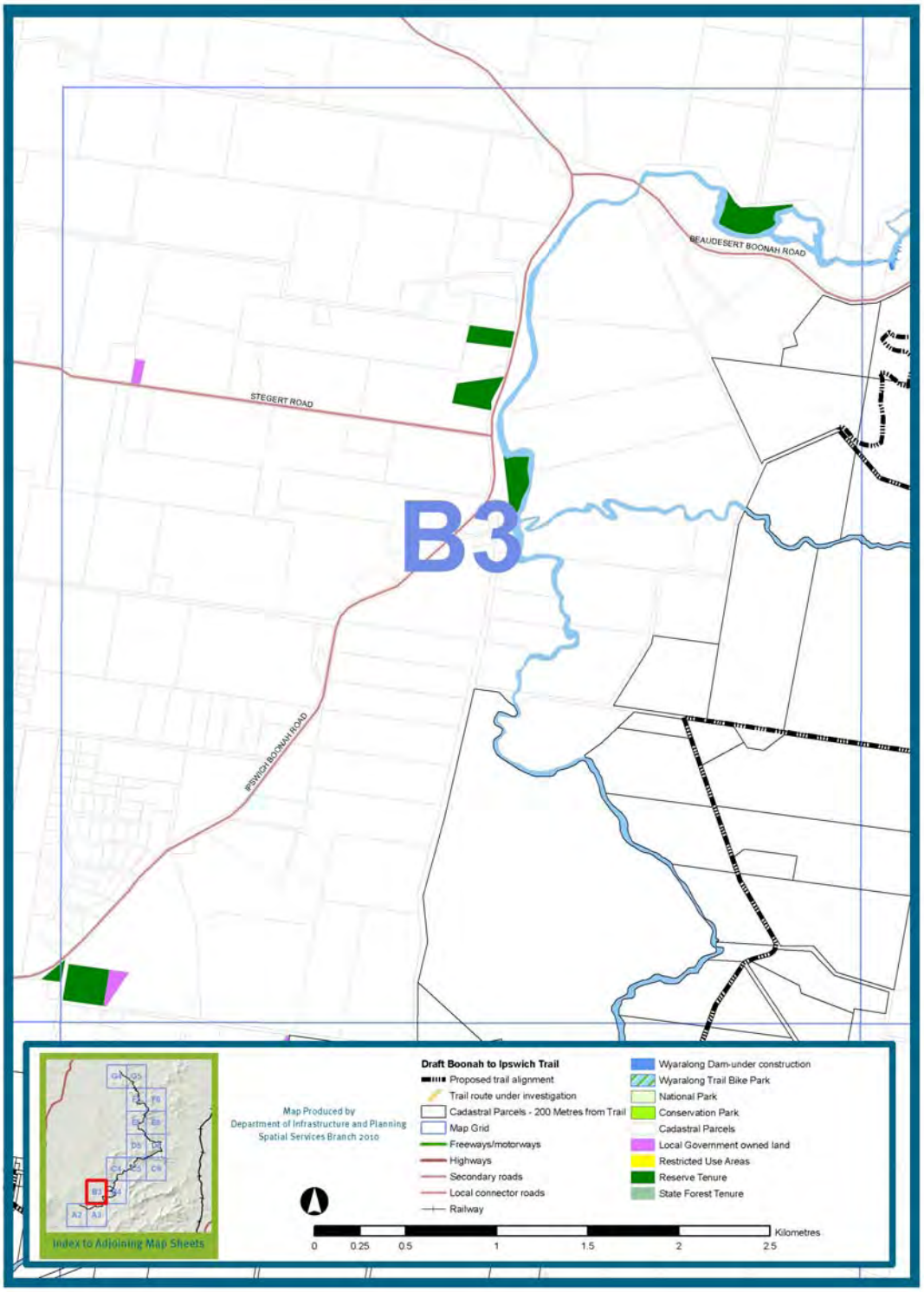
Map A2


BOONAH
IPSWICH BOONAH ROAD
CORONATION DRIVE
YEATES AVENUE
HIGH STREET
A2
DUGANDAN
MOUNT ALFORD ROAD
BOONAH ROSEVALE ROAD
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

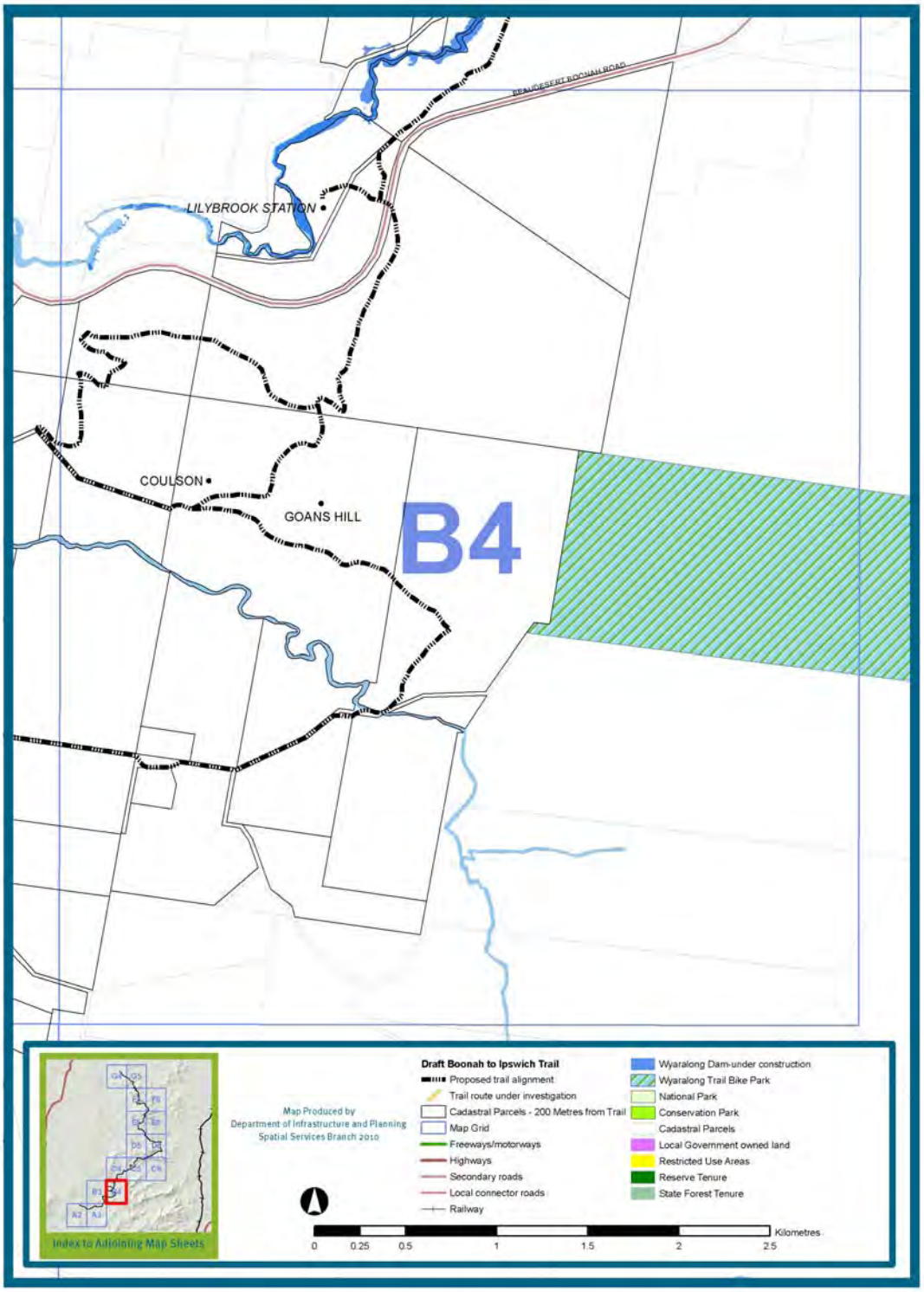
Map A3


A3
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

Map B3


BEAUDESERT BOONAH ROAD
STEGERT ROAD
B3
IPSWICH BOONAH ROAD
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

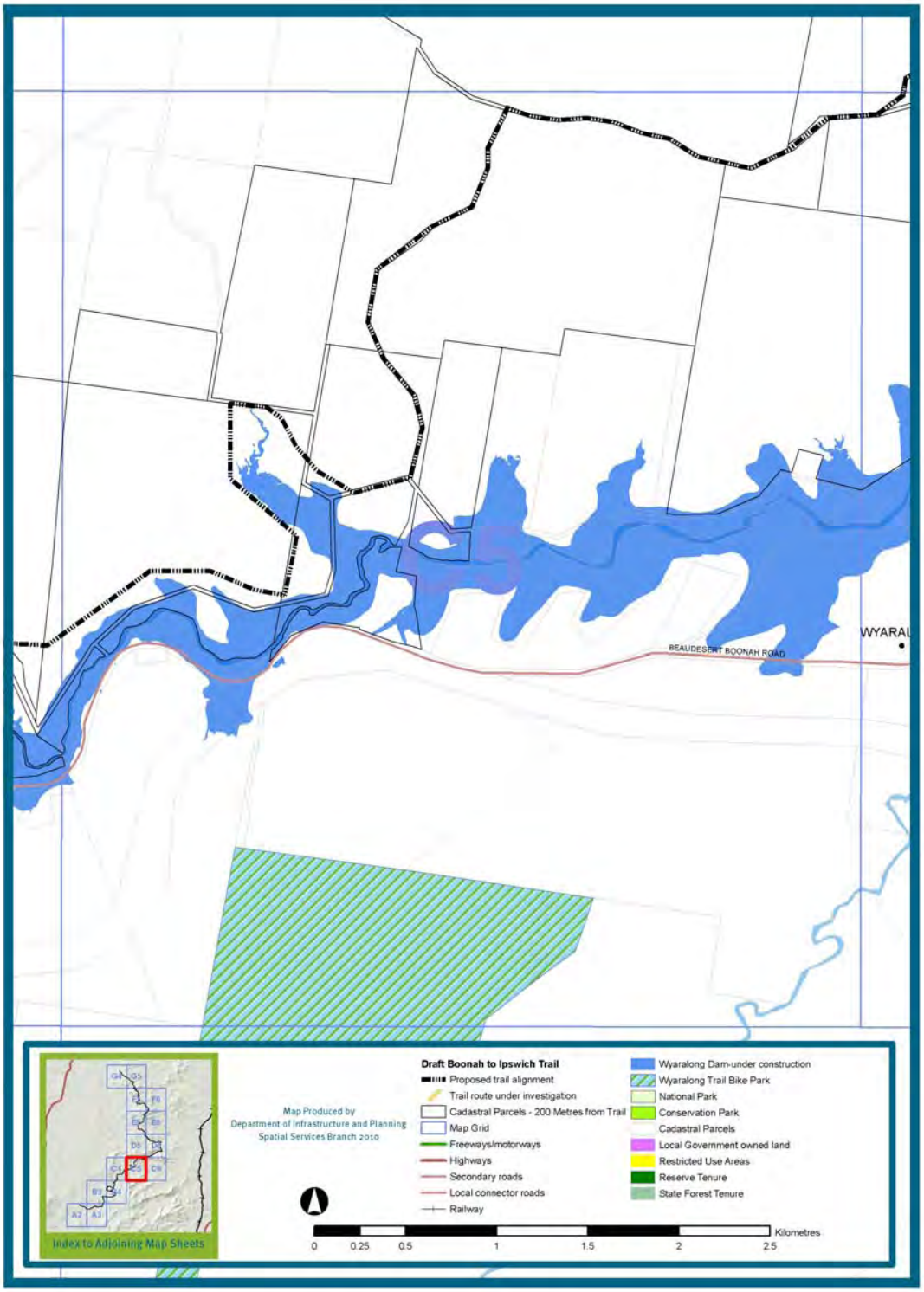
Map B4


BEAUDESERT BOONAH ROAD
LILYBROOK STATION
COULSON
GOANS HILL
B4
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Index to Adjoining Map Sheets
0
0.25
0.5
1
1.5
2
2.5
Kilometres

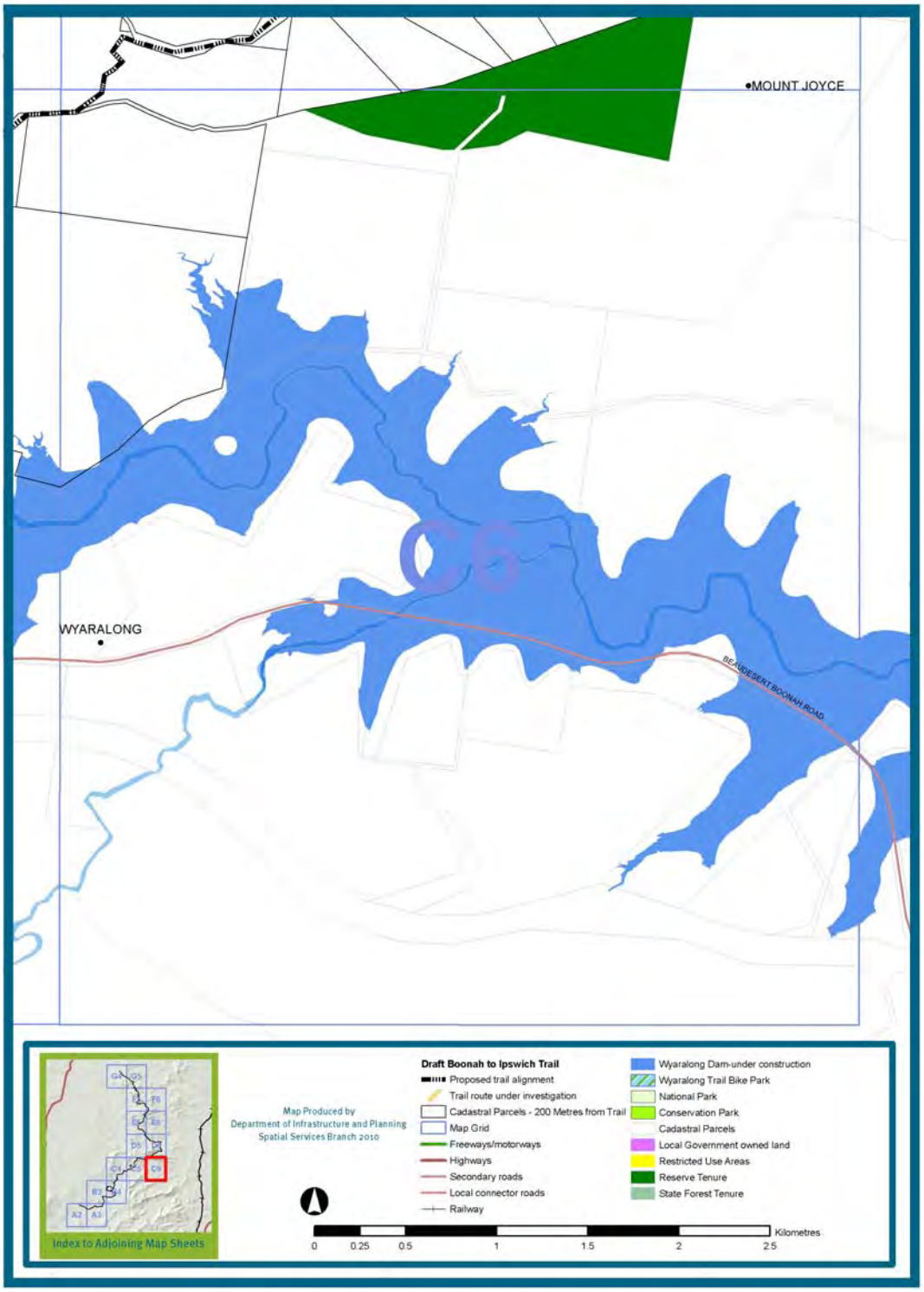
Map C4


C4
BEAUDESERT BOONAH ROAD
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

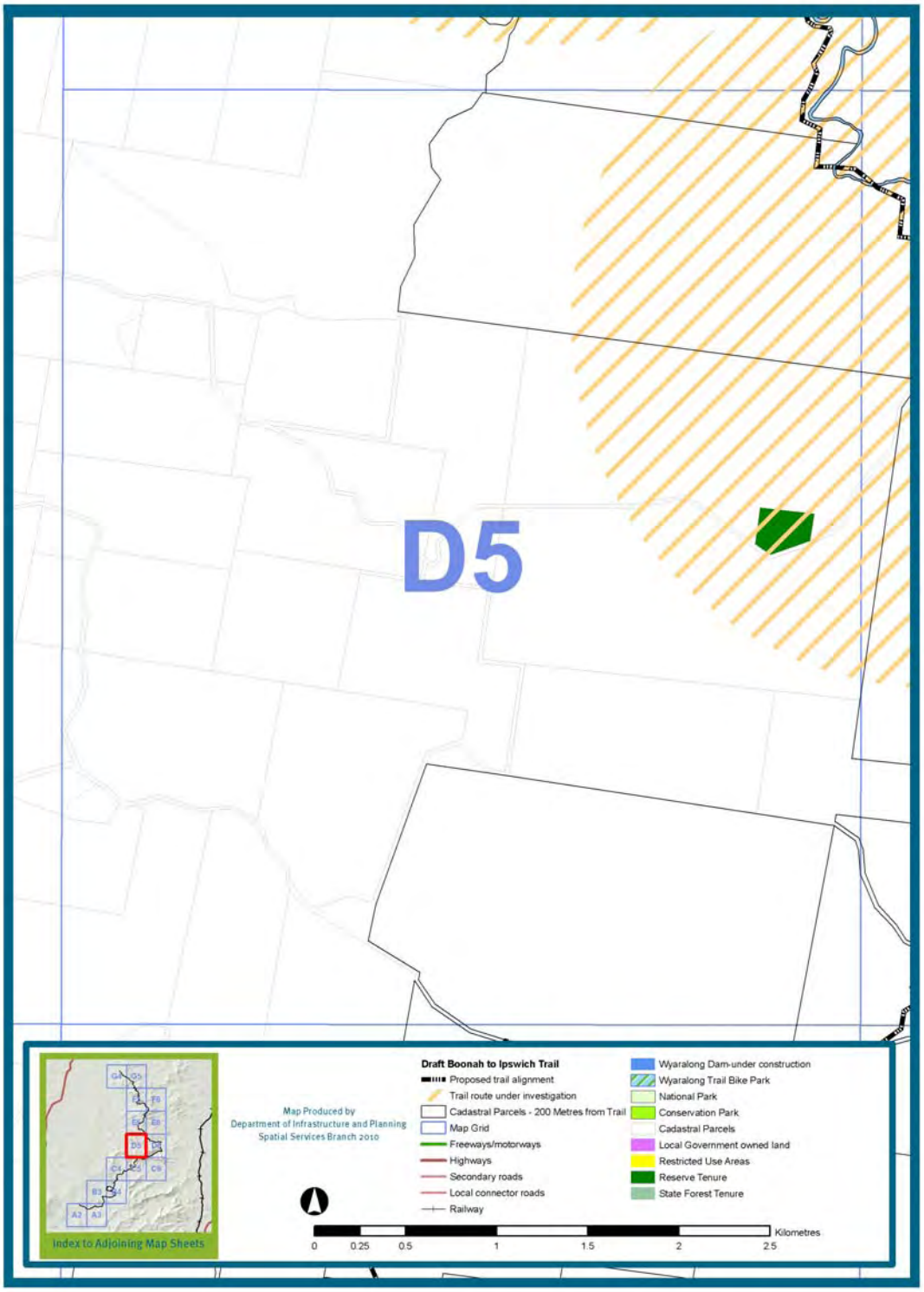
Map C5


BEAUDESERT BOONAH ROAD
WYARAL
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

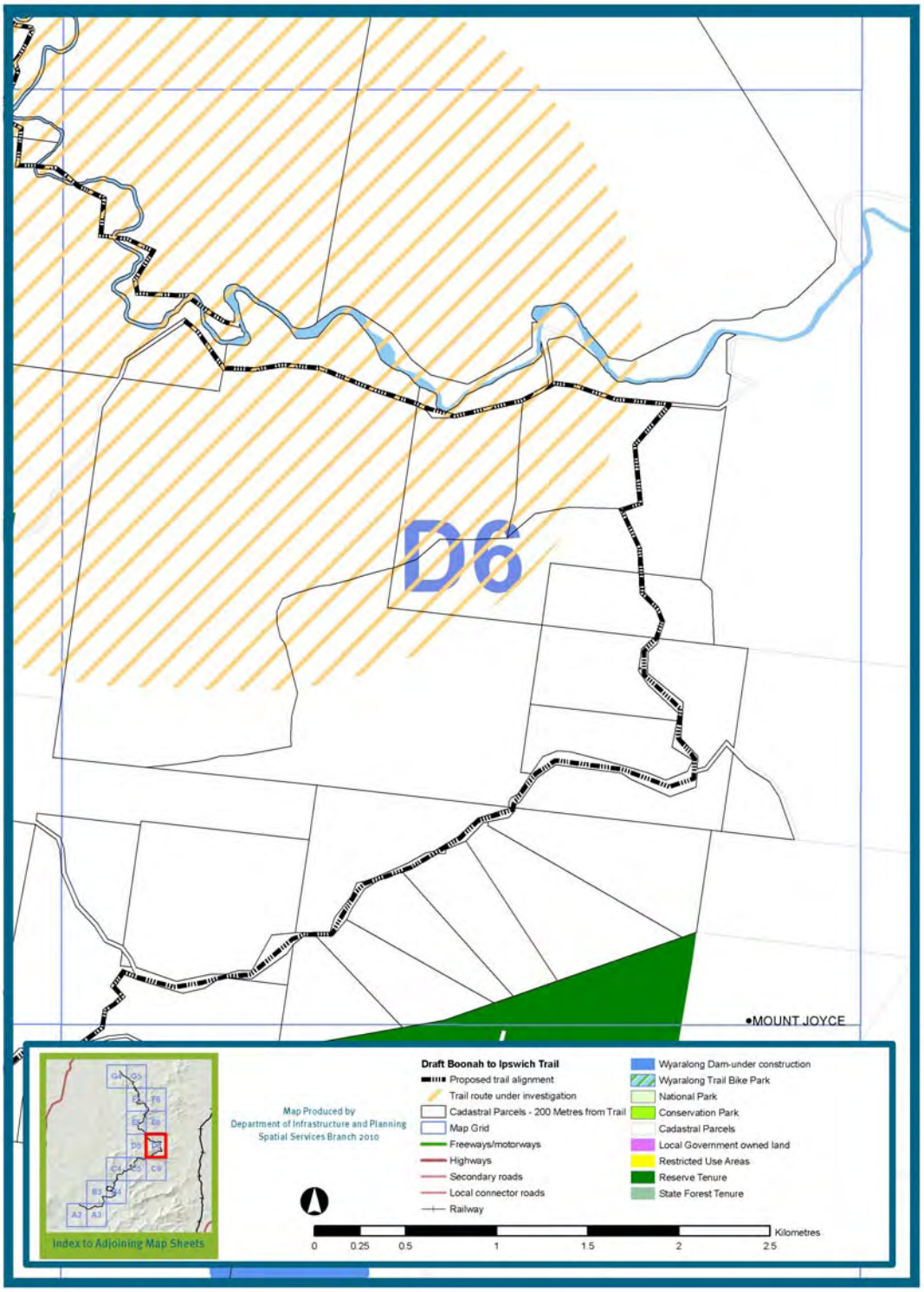
Map C6


MOUNT JOYCE
WYARALONG
BEAUDESERT BOONAH ROAD
C6
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Index to Adjoining Map Sheets
0
0.25
0.5
1
1.5
2
2.5
Kilometres

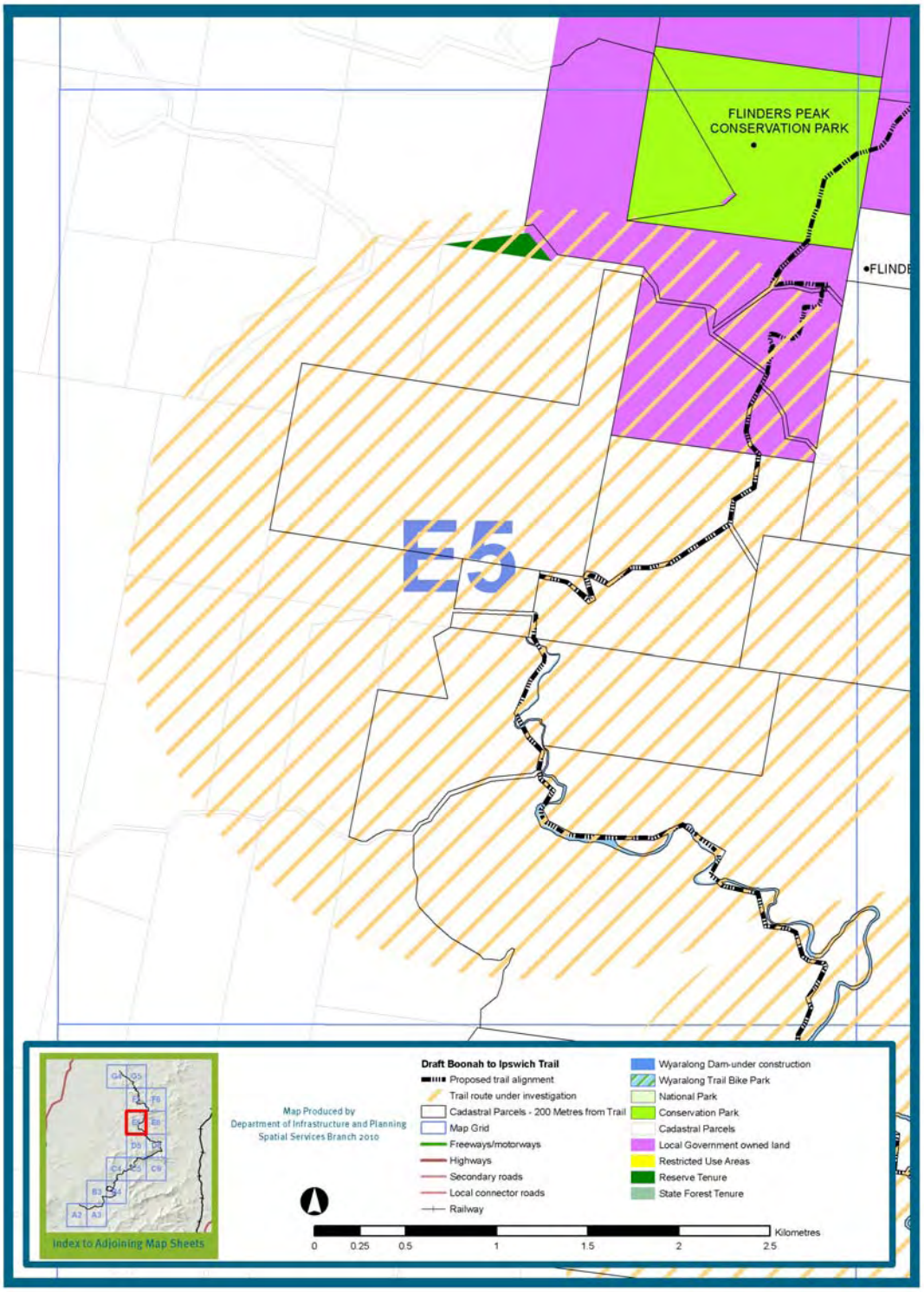
Map D5


D5
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

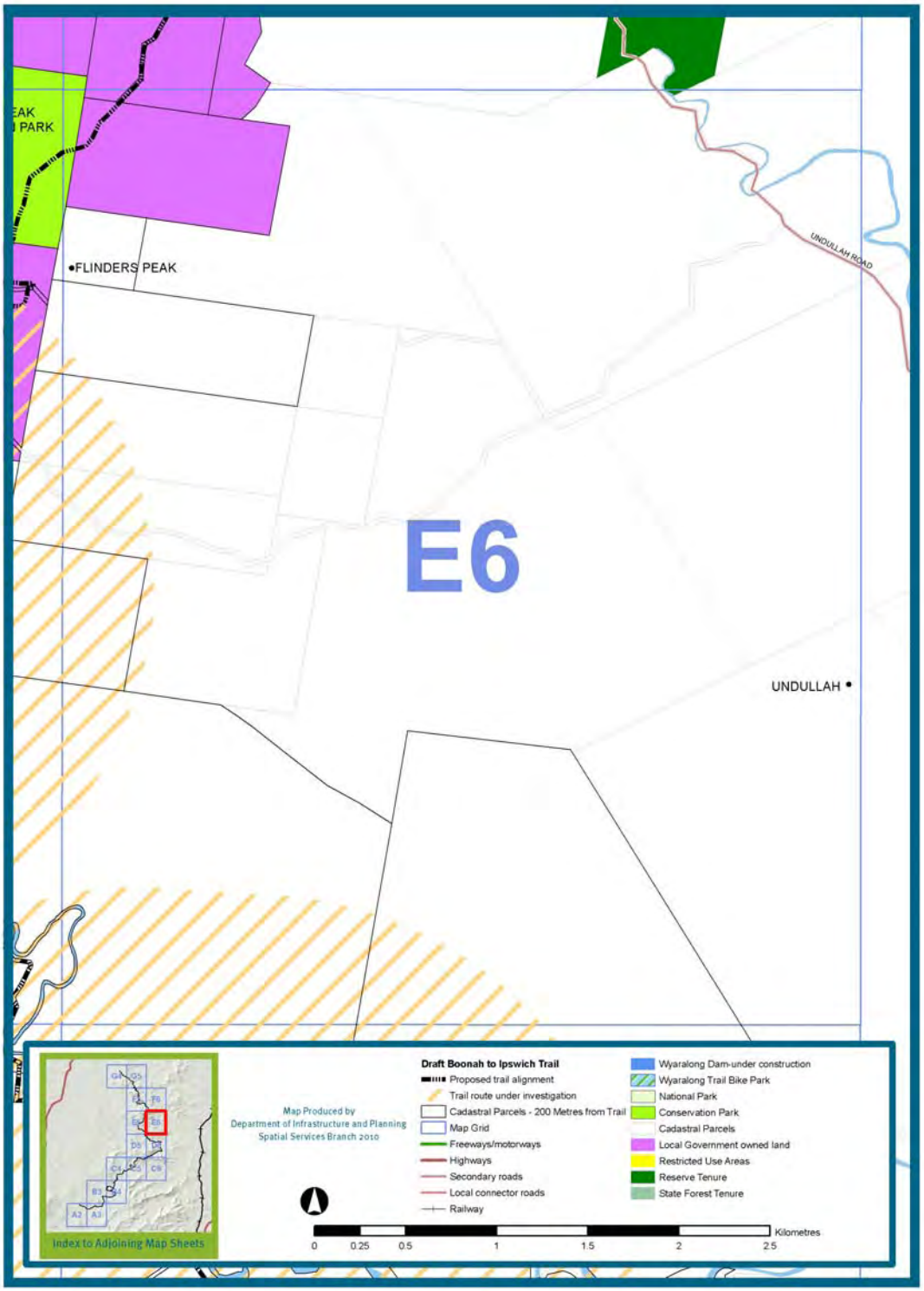
Map D6


D6
•MOUNT JOYCE
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

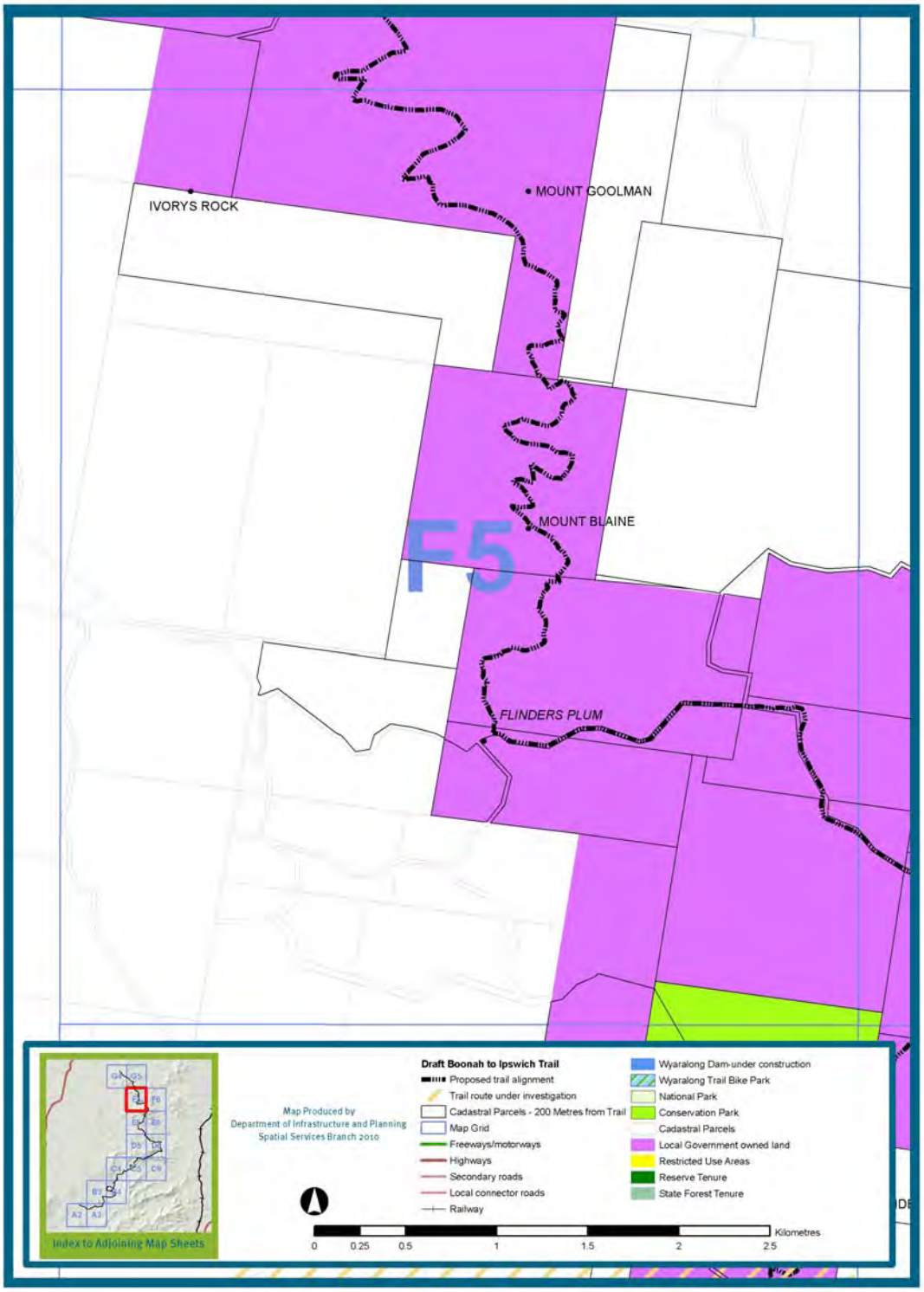
Map E5


FLINDERS PEAK
CONSERVATION PARK
E5
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

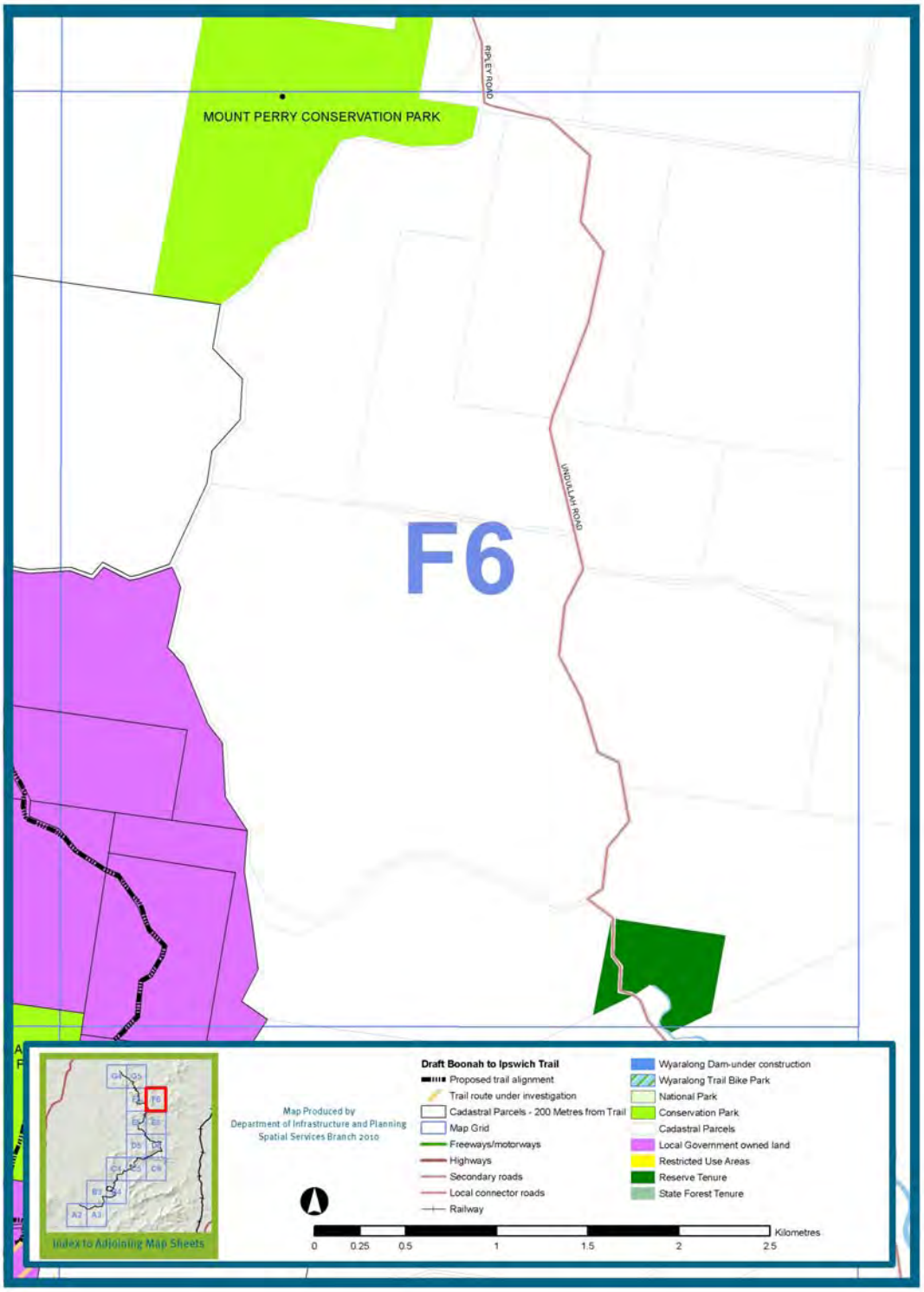
Map E6


PARK
FLINDERS PEAK
UNDULLAH ROAD
E6
UNDULLAH
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

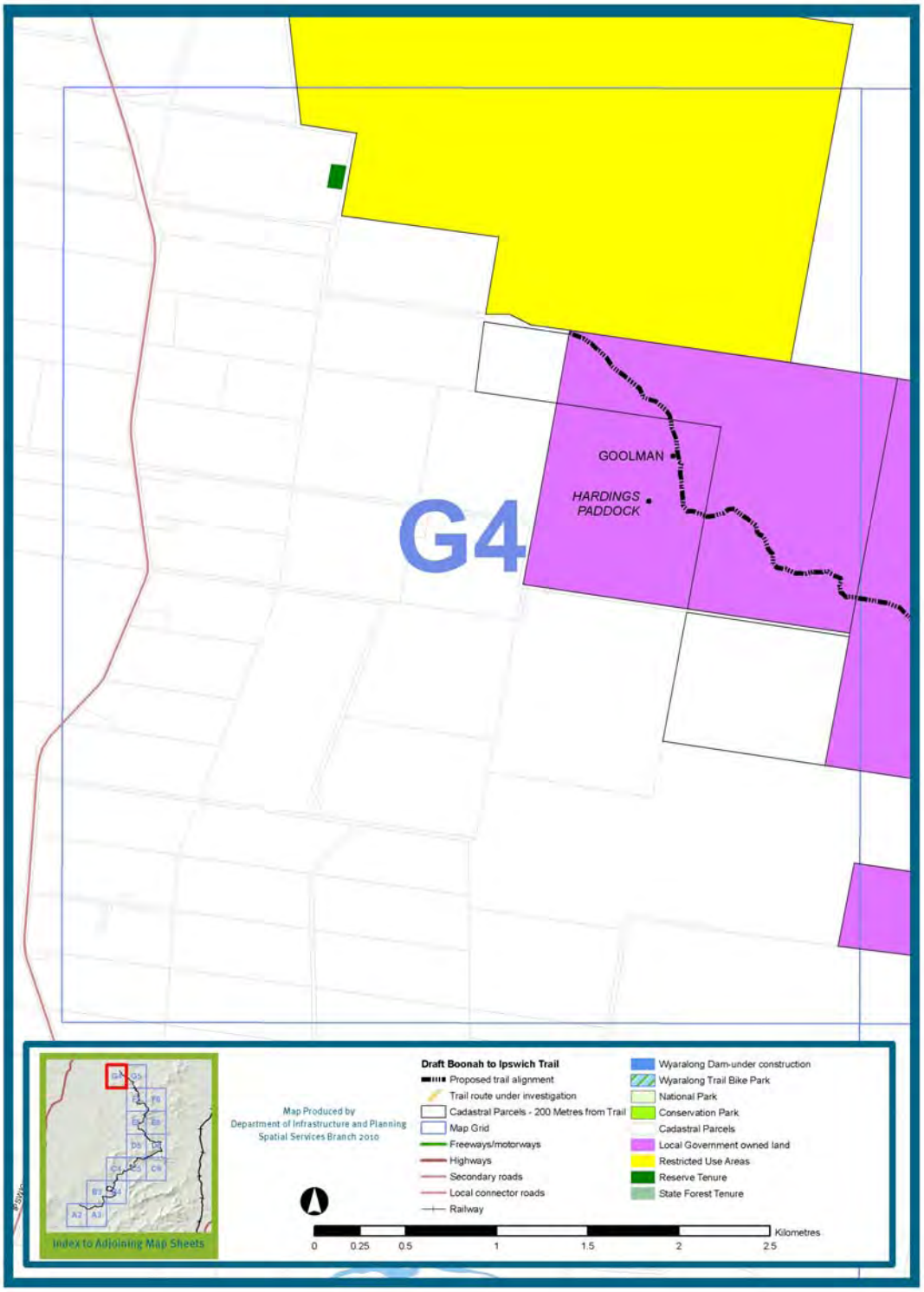
Map F5


IVORYS ROCK
MOUNT GOOLMAN
MOUNT BLAINE
F5
FLINDERS PLUM
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

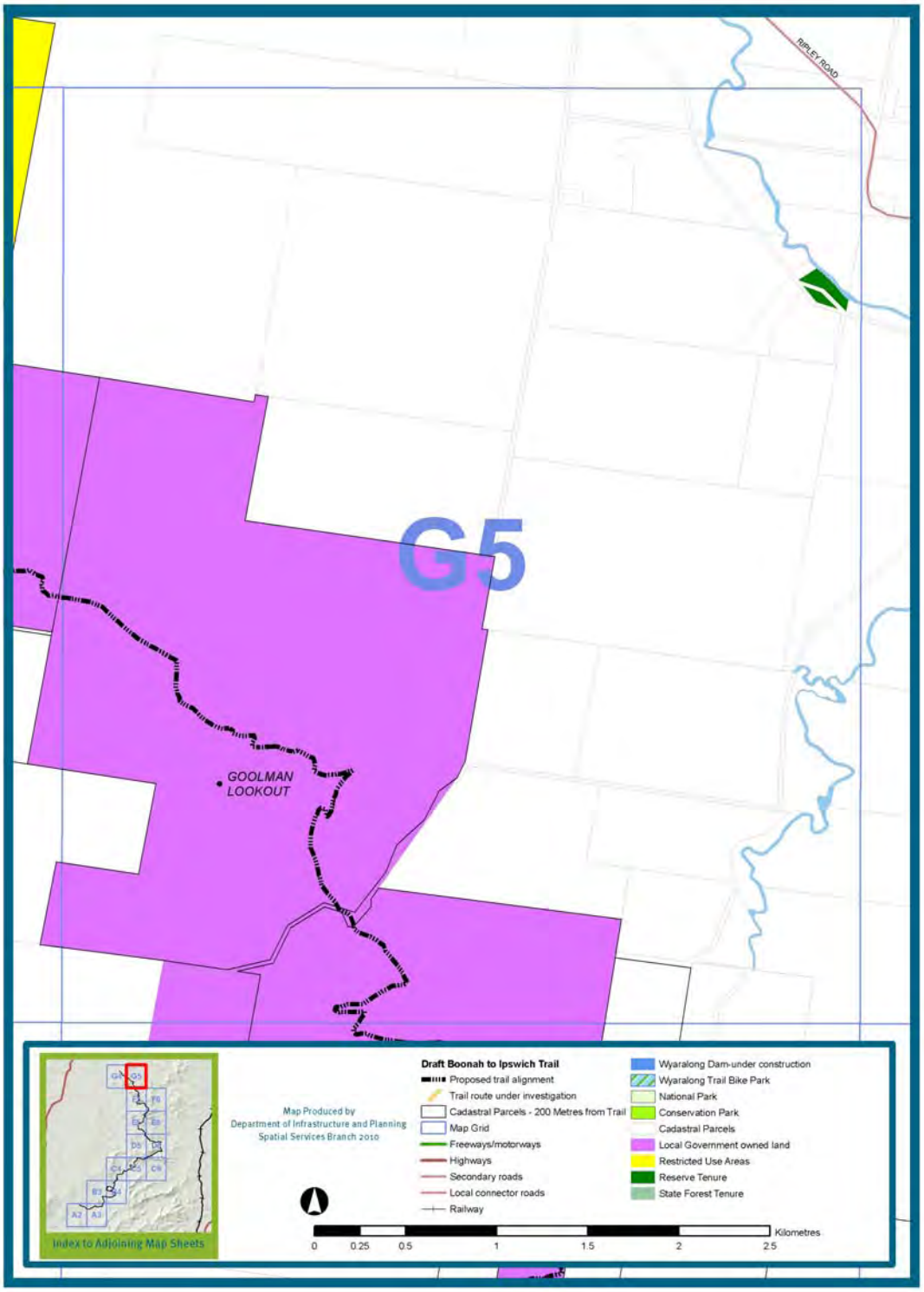
Map F6


MOUNT PERRY CONSERVATION PARK
RIPLEY ROAD
UNDULAH ROAD
F6
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Index to Adjoining Map Sheets
0
0.25
0.5
1
1.5
2
2.5
Kilometres

Map G4


GOOLMAN
HARDINGS PADDOCK
G4
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Index to Adjoining Map Sheets
0
0.25
0.5
1
1.5
2
2.5
Kilometres

Map G5


RIPLEY ROAD
G5
GOOLMAN LOOKOUT
Index to Adjoining Map Sheets
Map Produced by
Department of Infrastructure and Planning
Spatial Services Branch 2010
Draft Boonah to Ipswich Trail
Proposed trail alignment
Trail route under investigation
Cadastral Parcels - 200 Metres from Trail
Map Grid
Freeways/motorways
Highways
Secondary roads
Local connector roads
Railway
Wyaralong Dam-under construction
Wyaralong Trail Bike Park
National Park
Conservation Park
Cadastral Parcels
Local Government owned land
Restricted Use Areas
Reserve Tenure
State Forest Tenure
0
0.25
0.5
1
1.5
2
2.5
Kilometres

7. Bibliography

Some useful recreation trail references include:

Klein, J (2003) Sustainable Mountain Bike Trails. PowerPoint presentation for the International Mountain Bike Association (IMBA). www.mtbdirt.com.au

(Queensland) Department of Communities, Sport and Recreation Services (website: www.sportrec.qld.gov.au/) has links to information on outdoor recreation activities and issues including outdoor recreation demand and trends in demand, available at www.sportrec.qld.gov.au/Outdoorrecreation/OutdoorRecreationTrends.aspx and trail bike riding, available at www.srq.qld.gov.au/Outdoorrecreation/TrailbikeridinginQueensland.aspx

Queensland Government and the Council of Mayors - South East Queensland (2007) Active Trails – a Strategy for Regional Trails in South East Queensland. Available online from Queensland Department of Infrastructure and Planning at: www.dip.qld.gov.au/regional-planning/active-trails-strategy.html

This is a set of six documents:

- The executive summary - *Active Trails – a Strategy for Regional Trails in South East Queensland*
- *Active Trails – a Strategy for Regional Trails in South East Queensland Project Report*
- *Review of Recreation Participation and Demand Studies for Trail-Based Recreation Activities – Technical Report No 1 to the SEQ Regional Trails Strategy*
- Inventory of Recreation Trails in and around SEQ and a Summary of Trail Availability in SEQ – *Technical Report No 2 to the SEQ Regional Trails Strategy*
- Development of a Strategic Trail Assessment Methodology -*Technical Report No 3 to the SEQ Regional Trails Strategy*
- Review of Considerations Applicable to Recreational Trails Planning, Development and Management in South East Queensland – *Technical Report No 4 to the SEQ Regional Trails Strategy.*

Queensland Outdoor Recreation Federation website (www.qorf.org.au) has links to information on outdoor recreation activities and issues including:
• mountain bike riding www.qorf.org.au/01_cms/details.asp?ID=725
• trail bike riding www.qorf.org.au/01_cms/details.asp?ID=738
• adventure activity standards www.qorf.org.au/01_cms/details.asp?ID=830
• risk management www.qorf.org.au/01_cms/details.asp?ID=615
• recreation track/trail design and construction www.qorf.org.au/01_cms/details.asp?ID=912

Standards Australia website online order for Australian Standards for walking track classification, signage and design:
• AS 2156.1-2001 Walking tracks - Classification and signage
• AS 2156.2-2001 Walking tracks - Infrastructure design

Benefits – Health, physical, psychological, social and spiritual

Australian Bureau of Statistics (2006) National Health Survey – summary of results 2004 05. Available online at: www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4364.02004-05?OpenDocument

Dickson, T J. Gray, T. and Mann, K. (2008) Australian Outdoor Adventure Activity Benefits Catalogue. University of Canberra. Available online at: www.qorf.org.au/01_cms/details.asp?ID=1066

California State Parks (2005) Health and Social Benefits of Recreation California State Parks. Available online at: www.parks.ca.gov/planning

Fuller, R A. Irvine, K N. Devine-Wright, P. Warren, P H. and Gaston, K J. (2007) Psychological benefits of green space increase with biodiversity. *Biology letters (Community Ecology)*

Louv, R. (2008) Last Child in the Woods - Saving our Children from Nature Deficit Disorder. Algonquin Books of Chapel Hill, North Carolina, USA.

Maller, C. Townsend, M. St Leger, L. Henderson-Wilson, C. Prosser, L. Pryor, A. and Moore, M. (2008) Healthy Parks, Healthy People - The Health Benefits of Contact with Nature in a Park Context - A Review of Current Literature 2nd Ed. Victorian Government, Parks Victoria and Deakin University. Available online at: www.parkweb.vic.gov.au/1process_content.cfm?section=99&page=16

Queensland Government Eat Well Be Active Queensland, website: www.your30.qld.gov.au/Home/tabid/36/Default.aspx

Queensland Public Health Forum (2004) Strategic Statement – Active Living www.health.qld.gov.au/qphf/key_priorities/active_living.asp

Queensland Public Health Forum (2006), Be Active Queensland 2006–2010 – a framework for health sector action for physical activity in Queensland, available online at: www.health.qld.gov.au/qphf/documents/31830.pdf

Stephenson J. Bauman A. Armstrong T. Smith B. and Bellew B. (2000), The costs of illness attributable to physical inactivity in Australia. A report prepared for the Commonwealth Department of Health and Aged Care and the Australian Sports Commission.

Watson, A E. Aplet, G. and Hendee, J C. (1999) *Personal, Societal, and Ecological Values of Wilderness*: 6th World Wilderness Congress Proceedings on Research Management and Allocation. Volume II, Proc. RMRS-P-000. Ogden, UT.

Ulrich, R S. Simons, R F. Losito, B D. Fiorito, E. Miles, M A. and Zelson, M. (1991) Stress recovery during exposure to natural and urban environments. Journal of Environmental Psychology 11: 201-230. VicHealth (2003) Mental health and wellbeing, VicHealth Letter, Issue No 21 Spring.

Ecological impacts

Bamford, A R. Davies S J J F. & Van Delft, R. (1990) The effects of model power boats on waterbirds at Herdsman Lake, Perth, Western Australia, *Emu*, Journal of the Royal Australasian Ornithologists Union, vol. 90, no. 4, pp. 260-265, 1990.

Buckley, R. Breakdown of Human Waste in Three Sub-Tropical Australian Ecosystems. Available online from the National Outdoor Leadership School website at: www.nols.edu/

Burger, J. (1998) Effects of motorboats and personal watercraft on flight behaviour over a colony of Common Terns. *Condor,* vol. 100 no. 3. pp. 528 - 534, August 1998.

Cessford, G R. (1995), Off-Road Impacts of Mountain Bikes: A review and discussion. *Science and Research Series No. 92*, Department of Conservation, Wellington, New Zealand.

Cilimburg, A. Christopher M. C. and Kehoe, S. (2000) Wildland Recreation and Human Waste: A Review of Problems, Practices, and Concerns. *Environmental Management* Vol. 25, No. 6, pp. 587–598.

Leon, L M. and Warnken, J. (2008) Copper and sewage inputs from recreational vessels at popular anchor sites in a semi-enclosed Bay (Qld, Australia): Estimates of potential annual loads *Marine Pollution Bulletin, Volume 57, Issues 6-12, 2008, Pages 838-845*

Ells M D. 1997. Impact of Human Waste disposal on surface water runoff. *J. Env. Health*, 59, 8:6-12.

Hammitt, W E. and Cole D N. (1987) Wildland Recreation : ecology and management. John Wiley and Sons, New York.

Hammitt, P. Freimund, W. Watson, A. Brod, R. and Monz, C. Responsible Environmental Behaviour – Metaphoric Transference of Minimal Impact ideology Available online from the National Outdoor Leadership School website at: http://www.nols.edu/

Jones, M E. (2000). Road upgrade, road mortality and remedial measures: impacts on a population of eastern quolls and Tasmanian devils. *Wildlife Research Journal, Vol. 27, 2000, pp. 289-296.*

Liddle, M J. (1991) Recreation Ecology: Effects of trampling on plants and corals, *Tree, Vol. 6, no. 1, January 1991, pp. 13-17*.

Liddle, M J. (1997) Recreation Ecology: the ecological impact of outdoor recreation and ecotourism. Chapman & Hall, Melbourne.

Mosisch, T D. Arthington, A H. (1998) The impacts of power boating and water skiing on lakes and Reservoirs, *Lakes & Reservoirs: Research and Management*, *vol. 3, no. 1, pp. 1-17, Mar 1998*.

Temple K L. Camper A K. and McFeters G A. 1980. Survival of Two Enterobacteria in Feces Buried in Soil Under Field Conditions. *Appl. Env. Microbiology*. 40.

Temple K L. Camper A K. and Lucas R C. 1982. Potential health hazard from human wastes in wilderness. *J. Soil and Water Cons.* 37:357-359.

Sun, D. and Walsh, D. (1998) Review of studies on environmental impacts of recreation and tourism in Australia. *Journal of Environmental Management* 53, 323-338.

Economic impacts

American Hiking Society (2002) The Economic Benefits of Trails. Available online at: www.AmericanHiking.org

Kinhill Economics, Kinhill Pty Ltd (1998a) The Value of Protected Areas to Queensland – Final report. Prepared for the Queensland Department of Environment (in 2009, incorporated within the Queensland Department of Environment and Resource Management).

Kinhill Economics, Kinhill Pty Ltd (1998b), Assessment of the significance of forests to the recreation and tourism industries of South East Queensland, prepared for the (Commonwealth) Bureau of Agricultural and Resource Economics.

Lazarow, N. (2007) The value of coastal recreational resources: a case study approach to

examine the value of recreational surfing to specific locales. *Journal of Coastal Research*, SI 50 (Proceedings of the 9th International Coastal Symposium), pg12 – pg20. Gold Coast, Australia.

Queensland Government, Treasury, Office of Economic and Statistical Research (2006) The Contribution of Domestic Visitor Queensland Economy: 2003–04.
Available online at: www.oesr.qld.gov.au/publications/single-publications/index.shtml

Campbell, D. and Murphy, J J. (2005) The 2000-01 National Recreational Fishing Survey Economic Report. Available online at:
www.daff.gov.au/__data/assets/pdf_file/0014/23522/economic_report_july05.pdf

Laws

Queensland Government. *Civil Liability Act 2003* GOPRINT, Brisbane, Australia.

Queensland Government. *Brisbane Forest Park Act 1977.* GOPRINT, Brisbane, Australia.

Queensland Government. *Forestry Act 1959*. Sections 33 and 40. GOPRINT, Brisbane, Australia.

Queensland Government. *Integrated Planning Act 1997.* GOPRINT, Brisbane, Australia.

Queensland Government. *Marine Parks Act 1984.* GOPRINT, Brisbane, Australia.

Queensland Government. *Nature Conservation Act 1992*. GOPRINT, Brisbane, Australia.

Queensland Government. *Police Powers and Responsibilities Act 2000*. GOPRINT, Brisbane, Australia.

Queensland Government. *Recreation Areas Management Act 2006.* GOPRINT, Brisbane, Australia.

Queensland Government. *Transport Operations (Road Use Management) Act 1995.* GOPRINT, Brisbane, Australia.

Queensland Government. *Transport Operations (Marine Safety) Act 1994.* GOPRINT, Brisbane,
Australia.

Planning documents

Queensland Government. (1993) Open Space and Recreation – a policy paper of the SEQ 2001 Project. Regional Planning Advisory Group, GOPRINT, Queensland. ISBN 0 7242 5457 9

Queensland Government, Department of Infrastructure and Planning (2009) South East Queensland Regional Plan 2009 – 2031 Available online at: www.dip.qld.gov.au/regional-planning/regionalplan.html

Queensland Government, Department of Infrastructure and Planning (2005) South East Queensland Regional Plan 2005 – 2026 Available online at: www.dip.qld.gov.au/regional-planning/seqregional-plan-2005-26.html

Wood, J. and Swartz, L. (1993) *A Strategic* Overview of Recreation Opportunity Settings in South

East Queensland. Unpublished report for the Department of Tourism Sport and Racing prepared by Loder and Bayly Consulting Group.

Queensland Government, Sport and Recreation Queensland (2003) Open Space for Sport and Recreation – Planning Principles and Implementation Notes for Local Government. Available online at:
www.sportrec.qld.gov.au/Industryinformation/Recreationplanning/Planningnotes.aspx

Policy, planning and management concepts and issues

Clark, R N. & Stankey, H. (1979) The Recreation Opportunity Spectrum: A Framework for Planning, Management, and Research. U.S. Department of Agriculture.

Conroy, R. and Harden, R. (1997) Horses for courses? Recreational horse riding in New South Wales National Parks, Australia. *Proceedings of the Tread Lightly! On the World Conference*. Tread Lightly! Australia PL, Corinda, Queensland, Australia.

Low Choy, D. and Prineas, T. (2006) Parks for People – meeting the outdoor recreation demands of a growing regional population. *Annals of Leisure Research* Vol 19 No.1 pp. 86-109

McCool, S F. Clark R N. & Stankey G H. (2007) An Assessment of Frameworks Useful for Public Land Recreation Planning. *General Technical Report, PNW-GTR-705* Portland, Oregon. U.S.

Queensland Government, Environmental Protection Agency (2001) Master Plan for Queensland's Park System.

Queensland Government, Environmental Protection Agency (2003) Operational Policy: Landscape classification system for visitor management.

Stankey, G H. Cole D N. Lucas R C. Petersen, M E. & Frissell, S S. (1985) The Limits of Acceptable Change (LAC) System for Wilderness Planning. U.S. Department of Agriculture, Forest Service, *General Technical Report, INT-176*, January 1985.

Victorian Government, Department of Sustainability and Environment (2002) Policy for Sustainable Recreation and Tourism on Victoria's Public Land ISBN 1 74106 1849 *(Note: Originally published by Department of Natural Resources and Environment which was subsequently re-named Department of Sustainability and Environment)*
www.dse.vic.gov.au/DSE/nrenrt.nsf/LinkView/9AF29927FB6EF83CCA256C61001794D640805DA7754769794A256DEA00241084

Recreation conflict

Tumes, K. (2007) Out of my way: Using qualitative methods to understand recreation conflict between bushwalkers and mountain bike riders. *Anthropological Notebooks 13 (1): 45–55*.

Wisconsin Department of Natural Resources: Recreation Conflict – a review of research in USA.
Available online at:
www.wisc.edu/urpl/people/marcouiller/projects/clearinghouse/Applied%20Research%20Clearinghouse.html#clearinghouse

Risk management

Australian Government, National health and Medical Research Council (2008) Guidelines for Managing risks in Recreational Water. Available online at: www.nhmrc.gov.au/publications/synopses/eh38.htm

Batt, D. (ed) (1997) Proceedings of the 1997 South East Queensland Rockclimbing and Abseiling
Risk Management and Litigation Conference.

Statistics

Australian Sports Commission (2001-2008) Exercise Recreation and Sport Surveys www.ausport.gov.au/information/scors/ERASS

Australian Bureau of Statistics (2004-05) Participation in sports and physical activity www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4177.02005-06?OpenDocument

Bryden, N. (2002) Does your survey include the canary factor? Measuring displacement and succession at recreation sites. *Parks and Leisure Australia* June 2002 pp 22 - 23.

Henry, G. and Lyle, J. (2003), The National Recreational and Indigenous Fishing Survey, Fisheries
Research and Development Corporation, Natural Heritage Trust and NSW Fisheries, ACT.

Queensland Government (2008) Outdoor Recreation Trends in South East Queensland 1997-
2007.

Queensland Government (2008*)* South East Queensland Outdoor Recreation Demand Study 2007. Note: Surveys were completed in 1997, 2001 and 2007 with reports for each published respectively in 1998, 2002 and 2008.

Appendix 1: Summary of Australian Trail Horse Riders Association (ATHRA) specifications and recommendations

Debby Avis
National Secretary
ATHRA
PO Box 112
Helensburgh NSW 2508
4294 1604 (H) 0414 941604 (M)
debby.avis@deacons.com.au

Needs, Specifications and Infrastructure Requirements for Recreational Horseriding Trails

Q1. What are the User Needs of Recreational Trail Horse Riders?

A1. We'll preface our answer to this question by first outlining the types of recreational horse riders as an understanding of their situation will help understand their differing needs.

A1.1 Types Of Recreational Trail Riders

Recreational trail riders are made up of many different types / groups of horse riders. They are outlined as follows:

ATHRA Clubs

Trail riding clubs affiliated with ATHRA. These clubs are individually incorporated and conduct organized trail rides in a local area. These clubs in turn affiliate with ATHRA, which provides a state and national structure and negotiates insurance on behalf of affiliated clubs. As a peak body, ATHRA also addresses matters that relate to all member clubs such as liaising with the various levels of government, codes of conduct, ride management etc.

Endurance Riders

Endurance riders are individual members of the State Endurance Riders Association that conducts competitive endurance rides. These rides are rigidly administered including veterinary checks. Endurance riders usually trail ride as individuals on local trails to keep their horse fit and may be accompanied by friends / family.

Individual Trail Riders

Many people do not belong to organized clubs but own or lease a horse.

A1.2 Needs of the Recreational Trail Rider/s

A 1.2.1 Provision of trails and access to them.

Trail horse riders need trails to ride on and access to those trails.

A 1.2.2 Proximity or access

Ideally, trail horse riders should be able to safely ride to a point where they can access the local trail network. Additionally, the access point should not be more than 3 to 5 km from where they keep their horse. Where the trail access point is further away from the majority of riders, an access point should have provision for horse float access and parking so the rider can bring their horse to the trail.

A 1.2.3 Length of trails

Trail length governs the duration and therefore the type of ride. Short trails may only allow an hour or two of riding whilst longer ones may allow a half day or full day's ride. Half day and day rides are popular particularly where the visit a point of interest and have a place/s for a break or lunch (see comments later re facilities).

A 1.2.4 Trail Network
A trail network linking trails allows the flexibility of combining individual trails (including short trails) into rides that suit the time available to the rider or the ride experience they desire.

A 1.2.5 Opportunity to enjoy the Country etc
Horse riders desire and enjoy the opportunity to enjoy the scenery, experience the fauna and flora, continue Australia's unique equestrian culture, continue / renew friendships and family ties and obtain the health benefits from the exercise involved. It is particularly fulfilling to do this with a horse you love and provides an opportunity to unwind in our modern stressful life. All these things come together when you go trail riding on horseback.

A 1.2.6 Safety
Trail horse riders don't wish to hurt themselves, other members of the public or their beloved horses so safety is a requirement and manifests itself in a number of aspects including the following:

Traffic – where horses traverse roads there is the potential for safety problems from speed differential between vehicles and horses, proximity of vehicles to horses (particularly where there is no verge) or from a horse being spooked by vehicles. Provision of a reasonable width verge on the road that can be ridden on is ideal else signage alerting vehicles to the presence of riders.

Safe Trail Surface – Absence of glass, metal scraps or anything that can cut a horse's hoof or trap it. Loose wire is particularly dangerous. The trail should not have deep potholes or ruts as a horse could loose its footing and fall or become trapped in extreme cases. Bog holes created by 4 wheel drives can be very hazardous to horses. Steep slippery surfaces such as rock, concrete or asphalt can be hazardous – particularly if wet. Creek crossings containing hidden hazards, quicksand, slippery rock, fast flowing water, difficult entry and exit points and water deeper than 2 feet should be avoided. Horses can negotiate quite steep and broken terrain safely – generally anything that you can readily walk up or down is a good guide. If it becomes a scramble for a human walker it is approaching the level where an experienced horse / rider could ride safely or make their own judgement but may not be suitable for inexperienced riders on their own. Unsuitability for inexperienced riders / horses should not preclude these trails from use by the experienced rider. Where in doubt, ATHRA suggests you consult experienced local trail riders to review any areas of concern.

Other Trail Hazards – Protruding bolts on log barricades, sharp edges on signage particularly when near the head of a mounted rider. Low branches or structures, branches pruned at an angle leaving a point or sharp edge, narrow trail tread (should be as wide as a horse stands at a minimum on a bridle trail), and overgrown trails that conceal the trail surface are hazardous. Rubbish such as glass and dumped cars that can pose an obstruction, constriction or place of potential entrapment / snag to horse or passing rider.

A 1.2.7 Multi Use Trails
ATHRA fully supports the concept of multi use trails as they allow limited funding to be used to benefit multiple user groups. ATHRA has had good experiences interacting with other user groups such as bushwalkers, mountain bike riders and recreational 4W drivers and most trail bike riders. It has been our experience that User Conflict does not happen on the trails despite some sectional interests citing it as a potential problem when they seek to exclude horse riders from public land (classic Not In My Back Yard – NIMBY tactics). The only issue with multi use trails is provision of information to help each group interact safely on the trail. For horse riders this boils down to:

1. not surprising the horse when approaching (talk – don't ring a bike bell),
2. staying out of a horses kicking zone as it might kick in self defence if surprised from behind and;
3. if yielding to allow a horse to pass, avoid being above the horse (horses have a retained instinctive fear from when predators attacked from above).

A 1.2.8 Facilities
Recreational Trail Horse Riders do not place great need (or demand) on facilities and to a large extent consider them optional and secondary to the trail and the opportunity to ride.

Hitching Point - Riders would need to be able to safely tie up their horse to use a toilet or a facility at any place of interest and would look for a place away from other visitors that is safe for their horse but not too far away so that they could quickly get to their horse in the event of any issue with their horse. 75 meters would generally be considered a working maximum distance between a facility and a horse hitching point.

Toilets - Like most trail users, strategically located facilities enhance the experience for all. Toilets at high use sites such as a lookout or picnic point can be shared.

Water – Access to water for both riders and horse is appreciated where available. Riders can use water available to the general public at recreational facilities. Horses can access creeks if the water is stock safe and the access point safe. Access to a tap at horse float parking areas to fill a bucket for horses is greatly appreciated – particularly in summer to prevent your horse de-hydrating.

BBQs, Bins Etc – Horse riders needs can be lumped in with other users but consideration of access to horse hitching areas as already mentioned needs to be considered.

Access Control – Councils are sometimes faced with the need to control illegal trail bike riding on trails and wish to erect a barrier.

Consideration of the type of barrier needs to take place to prevent horse riders being excluded un-intentionally.

ATHRA recommends “cavelletti” which is essentially three horizontal rails at horse knee height spaced a horse length apart. The rails are bounded on their ends by a fence and wing fencing. A horse can step over each rail in turn to pass through the caveletti. Likewise walkers and mountain bike riders can pass but it is too much of a struggle to get trail bikes over. Caveletti are successfully used in Canberra’s fine equestrian trail system.

Q2. What specification requirements does ATHRA have in place for trails? IE trail widths, heights of low hanging branches, slope gradient requirements, float requirements etc

A2. ATHRA recommends you obtain a copy of an excellent book put out by the International Mountain Bicycling Association – IMBA www.imba.com

Trail Solutions
ISBN 0-9755023-0-1
272 pages – soft cover
Published by IMBA
PO box 7578
Boulder, CO 80301
USA

This book is a comprehensive treatment of trail design and construction issues and processes and whilst primarily geared to mountain bikes, embraces the principle of multi-use trails.

Trail Dimensions
Three dimensions are important for horse riders in a trail.
1. Trail Ceiling – height from the trail surface to the lowest overhead branch or other obstruction. Three Meters will allow a mounted rider to pass.
2. Tread Width – A comfortable minimum for a single horse to traverse is 500mm. This would form a single horse track commonly referred to as a “bridle trail”
3. Trail Corridor – the comfortable minimum width between obstructions on each side of the trail assuming a centrally located trail tread is 1 meter. This will allow a single mounted rider to traverse the trail without banging their knees on adjacent trees. At a squeeze, a horse and rider could get between trees 800mm apart.

4. Additional width should be allowed for trail users to pass where the terrain and natural obstructions allow. A trail designer may make a trail wider to allow more room for multiple users (to ride side by side or pass in opposite directions) or for access by council vehicles or for the trail to double as a fire trail / break

Trail Slope
Cross slope trails 5% to allow water to flow off the trail and prevent erosion.

A horse and rider can easily traverse uphill and downhill slopes that a walker can comfortably walk. As a general rule, if you can reasonably walk up or down the trail is suitable for a horse. This excludes scrambling and rock hopping. See comments earlier in this response.

Steps and ledges
Sometimes it is necessary to put in steps to traverse steep areas. Continuous steps dimensioned to suit walkers are difficult for horses – even if sufficiently wide (side to side dimension). Increase the horizontal size threefold or more. A horse can easily step up or down a step or ledge as high as a horse's knee - 500mm high.

The following photo shows cribbing on a trail used by horses in steep country with sandy soil. Located in Katandra Reserve, Gosford NSW – Graves Track leading to the local pony club. It has remained in this condition over the last 20 years or so since built. Some 70mm crushed rock was used to harden the trail surface in a moist area (spring). The wooden cribs are about 1 meter apart in the steepest areas – further in less steeply sloped areas. Cross slopes divert water off the trail controlling erosion.

Horse Float Parking
Size of Horse Float and Towing Vehicles
The typical three horse float and 4 wheel drive towing vehicle will be a total overall length of 11.7 meters and 2.6 meters wide.

Avoiding Reversing - Parking is best provided on a drive through basis to eliminate the need for reversing.

Roadside Parking - This can consist of a roadside verge wide enough for the vehicle and float to pull off the road. Ideally, a grassed area beside the float (opposite the roadside) will allow the horse to be tied to the horse float for saddling and unsaddling etc away from traffic.

Car Parks - Drive through carparks are ideal. Where a low number of horse floats are expected, parallel parking considering the need to tie up a horse to the side of the float as previously described should be considered. If three sides of a rectangle form the roadway with the long side widened to incorporate the horse friendly verge, a drive through design can be achieved. Standard parallel parking car bays can be placed in an area opposite the horse parking area. Where bigger areas are available, carpark designs used to accommodate cars and boat trailers could be adapted for horse use.

Slopes & Traction
Avoid parking horse floats on slopes and low traction surfaces particularly wet green grass, clay and sand. A horse float can be difficult to move in these circumstances. If unavoidable, arrange the area so the float is parked facing downhill towards the exit so it can be driven out.

ATHRA works closely in conjunction with HorseSA and the Australian Horse Alliance. ATHRA thanks Graham Crossley (ATHRA, AHA) for his assistance with this document and thanks HorseSA for the accompanying Horse Trail Classification tables.

Please visit the HorseSA site at http://www.horsesa.asn.au/

You can also visit the AHA at http://www.australianhorsealliance.asn.au/

****

HORSE TRAIL CLASSIFICATIONS

EASY **(Class 1)**

	Description
Overview	Easy Trails are most suitable for novices; social groups and others seeking a relatively short distance trail requiring a basic level of skill and horse & rider fitness. Easy Trails are most likely to be fire roads or wide single tracks (bridlepaths) with a gentle grade (not exceeding 10%) and a relatively obstacle free, hardened natural surface. Easy Trails are likely to be multi-use and frequent encounters with other users including cyclists, walkers & runners can be expected.
Elements for classification	
Corridor (Width) (Height)	 (Min.) 3 m (Min.) 3.7 m
Tread (Minimum Width)	1.5 m Note: Short sections of narrower tread (.60 m to 1.2 m) are acceptable at ground level however 1.5 metres is required at the height of the riders stirrups.
Surface	 Generally a natural surface (topped with dolomite or compacted surface if desired). Hardened surfaces like concrete or asphalt to be avoided due to concussion on horse legs and poor traction with metal horseshoes. Hardened surfaces may be utilised on Rail Trails or other tracks where horses would generally only walk.
Distance	**0 – 14 km**
Gradient	Desired gradient 0 – 10% Maximum 10% Maximum sustained pitch 5% Out slope 4% maximum
Minimum turning radius	N/a
Level of skill / experience	Novices will require a basic level of riding skill and fitness is required coupled with riding on a trained, experienced horse.
On-trail facilities	Facilities along the trail may include mounting blocks, step overs, shallow fords, bridges, watering points, interpretative and/or management signs.
Trailhead facilities	The trailhead will be marked with a sign, specifying the name, distance, classification, multi-use code of conduct and other relevant information. Trailhead facilities may include car and separate horse float parking, manure receptacle, map dispensers, toilets, drinking water and information shelters. Trailhead facilities may include overnight yarding for horses. (Facilities will be dependent on the number of visitors using the trail or other attractions in the area.)
Recommended trail flow	Open and Flowing

* There may be circumstances where trails with a surface and slope similar to Class 1 exceed the suggested distance. These trails should be upgraded to Class 2 or 3.

HORSE TRAIL CLASSIFICATIONS

INTERMEDIATE **(Class 2)**

	Description
Overview	Intermediate Trails are most suitable for individuals and smaller social groups seeking a short to medium distance trail requiring a moderate level of skill and fitness. Intermediate Trails are most likely to be a combination single trail and/or fire road with obstacles, variable surface, and a moderate slope. Intermediate Trails are likely to be multi-use so encounters with other users including cyclists, walkers, runners and horse riders should be expected.
Elements for classification	
Clearing (Width) (Height)	 (Min.) 1.5m (Min.) 3.7m
Tread (Minimum Width)	1.5 m Note: Short sections of narrower tread (.60 m to 1.2 m) are acceptable at ground level however 1.5 metres is required at the height of the riders stirrups.
Surface	Generally a natural surface is desired and may include sections of rocky ground, sand, clay or gravel. Obstacles such as rocks, logs and gates that require dismounting are likely. Shallow ford crossings are acceptable. (Note: SA rainfall conditions vary widely - seasonal conditions may water depths significantly)
Distance	Maximum 40 km
Gradient	Maximum 15% Maximum sustained pitch 10%. Out slope 4% maximum
Minimum turning radius	na
Level of skill / experience	An intermediate level of riding skill & fitness is required, and a horse with some trail experience & training is recommended. Knowledge of Basic horse health including first aid and conditioning requirements is highly desirable.
On-trail facilities	Facilities along the trail may include lookouts, bridges, watering points, interpretative and/or management signs, step overs, shallow ford crossings.
Trailhead facilities	The trailhead will be marked with a sign, specifying the name, distance, classification, multi-use code of conduct and other relevant information. Trailhead facilities may include car parking and separate horse float parking, toilets, drinking water, map dispensers and information shelters. (Facilities will be dependent on the number of visitors using the trail or other attractions in the area.)
Recommended trail flow	Generally flowing with some more challenging sections

* There may be circumstances where trails with a surface and gradient similar to Class 2 exceed the suggested distance. These trails should be upgraded to Class 3.

HORSE TRAIL CLASSIFICATIONS

ADVANCED **(Class 3)**

	Description
Overview	Advanced Trails are suitable for individuals and small social groups seeking a very challenging trail requiring a high level of skill, fitness, and basic navigation skills. Advanced Trails are most likely to consist of challenging single trail and/or fire road with many obstacles, variable surface, and steep sections. Some trail routes may not be marked at all. Advanced Trails may possibly be multi-use so encounters with other users possibly including cyclists, walkers, vehicles and other stock should be expected, however, many of these trails may be located in remote areas and encounters with others is expected to be minimal.
Elements for classification	
Clearing (Width) (Height)	Min. 1.5m Min. 2.5m
Tread (Width)	Min. 30 cm Note: 1.5 metres is recommended at the height of the riders stirrups
Surface	Usually a variable surface with sections of rock, sand, clay gravel, etc. Obstacles may include challenging rocks, logs, Fording creeks
Distance	Advanced Trails can be any length.
Gradient	Maximum 20% (Max. sustained pitch 10%.)
Minimum turning radius	N/A
Level of skill / experience	A higher level of skill and fitness is required. Navigation and personal survival skills are highly desirable. Previous riding experience essential. Packing skills may be required. Map reading skills and horse health knowledge is essential. An experience guide is recommended for riders with limited remote area experience
On-trail facilities	Generally facilities are not provided except in relation to specific safety or environmental considerations. Stock holding yards and watering points will be identified on maps but may not necessarily be specifically provided as part of the trail. Permission to access these facilities may be required.
Trailhead facilities	The trailhead will be marked with a sign, specifying the name, distance, classification, multi-use code of conduct (if relevant) and possibly management information. Trailhead facilities may include car and float parking, drinking water. (Facilities will be dependent on the number of visitors using the trail or other attractions in the area.)
Recommended trail flow	none

Thank you to HorseSA for the contribution of this table.

Appendix 2: International Mountain Biking Association (IMBA) specifications and recommendations

For detailed information regarding IMBA specifications and recommendations please refer to:

- IMBA (2007) Managing Mountain Biking: IMBA's Guide to Providing Great Riding. Publication Printers Corp: Denver.
- IMBA (2004) Trail Solutions: IMBA's Guide to Building Sweet Singletrack. Johnson Printing: Bolder.

IMBA trail construction specifications and recommendations

Below is a brief summary of the IMBA specifications and recommendations, which will be considered in the Boonah to Ipswich trail design and construction phase of the project.

Primary considerations

- Avoidance of environmental degradation or wildlife disturbance, prevention of trail tread creep.
- Avoidance of user conflict, particularly in those areas where trails / users meet or share trails.
- Restriction of users to on trail activity, corralling of users into chosen areas of woodland and avoidance of straying or undesired activities.
- Particular avoidance of conflict with ecological, historical or forest operation interests. Minimising visual / perceptive impact.
- Provision of interpretative and educational facilities for trail users.
- Prevention of watercourse disturbance or pollution.
- Ability of trail to support all weather use with minimal construction and maintenance costs.
- Road safety on areas of trail that may meet or cross public and forest roads.
- General safety of trail and control of user speeds.
- Public liability in event of user injury.

Proposed construction specifications

Research carried out by IMBA has produced well established trail design and construction guidelines. It is proposed that trails should be constructed to support a minimum width trail tread of 400-600 millimetres for MTB and foot access, and 1000-1500 millimetres for horse routes.

Trail line will be raked and cleared of physical obstructions to denote trail line and allow safe passage, No further ground preparation is required. It is envisaged that this construction method will be used on those areas of the trail which are already reasonably conducive to passage, with well structured free draining soils, and a resilient surface already present.

Constructed trail

- Soil (loam) and vegetation will be cleared from the trail, exposing mineral soil underneath. Tread will require a minimal 5 per cent outslope to facilitate drainage, along with the wide dispersal of removed soil onto downhill side.
- Final preparation of trail will involve the smoothing and or compaction of exposed mineral soil to a reasonable standard. Exposed roots and stone need not be removed.
- Further stone may be used to denote trail line and corral users onto correct trail line.

- Where necessary constructed trail will be used in conjunction with full bench construction or other recognised IMBA trail construction techniques dependent on slope and ground conditions.

Hardened trail
As above, but exposed mineral soil may be capped with a layer of Crusher run stone (80 millimetres to dust). With high fines content, with a surface layer of compacted dust laid down wet (it is imperative that all stone is compacted as soon as it goes down otherwise the fines will get washed out and it will be useless) to a minimum fill depth of 80 millimetres. Additional exposed stone may be embedded within the trail edge or tread as trail features or to denote trail line. As with Constructed Trail, IMBA construction techniques will be used in conjunction where ground conditions require.

Armoured trail
Where required, mineral soil may be sealed with a layer of rock and/or broken stone, before capping with crusher run stone (80 millimetres to dust) with high fines content, which will be compacted as per hardened trail.
It is envisaged that this level of construction will only be required on steep slopes or areas with particularly unstable soil.

Raised trail—armoured raised trail
In areas of wet soil, or where extensive water problems may occur, trails may be constructed as per hardened trail, but laid on unprepared ground. Extensive amounts of broken stone may be required to build a secure platform for the construction of trail tread, particularly where the trail may be required to support horse passage.

Boardwalk
To avoid any risk of watercourse disturbance, it is envisaged that some short areas of boardwalk may be constructed to allow MTB passage without impacting on streams or adjoining riparian zones.

Proposed construction from rail sleeper supports, 100x25 millimetres cellcured softwood rails with chicken mesh surface to prevent slipping.

Culverts
Large watercourses or lateral obstructions may be passed by use of bridges or culverts as deemed necessary (it is noted that often culverts provide a more user friendly passage, in addition construction regulations and risk of damage are often less extreme with the creation of a culvert than a full bridge).

Materials
It is proposed that stone, wherever possible, should be locally collected, either from local loose stone or established borrow pit quarries located nearby.

Construction
The selection of a single route, which is of a higher quality and rider desirability is likely to increase user pressure on the trail, to combat this it is proposed that a widespread programme of trail hardening and reconstruction should be undertaken. Funding for proper construction with machine and personnel (contractors) must be viewed as a priority.
It is vital that any development of trails should include trailhead interpretation boards, giving route information such as distance, terrain, conditions and technical difficulty. It should also carry details of local emergency contacts (and nearest payphone). Trail route marker system should be utilised to provide an effective, discreet waymarking method.

Appendix 3: Boonah to Ipswich Trail graphic identity and signage guidelines

Growth Management Queensland

Graphic identity and signage guidelines

November 2010

Tomorrow's Queensland:
strong, green, smart, healthy and fair

Toward Q Tomorrow's Queensland

Queensland Government

Contents

Boonah to Ipswich Trail—A recreation trail for touring cyclists, horse riders and walkers 1

About these guidelines 2

Why we need a visual identity 2

Elements of the Boonah to Ipswich Trail (BIT) visual identity 3

Boonah to Ipswich Trail logo 3

Incorrect use of logo 3

Boonah to Ipswich Trail colour palette 3

Other logos 4

Signage–branding matrix 4

Typeface 5

Who the visual identity applies to 5

Boonah to Ipswich Trail Partnership Program recipients 6

Queensland Government agencies 6

Local Government, partners and sponsors 6

Funding acknowledgment requirements 6

Boonah to Ipswich Trail signage guidelines 7

Information signs 7

Descriptive signs 8

Interpretive signs 12

Regulatory signs 12

Warning or risk signs 12

Event and temporary signs 13

Trail head signs 13

Promotional signs 13

General trail signage maintenance 14

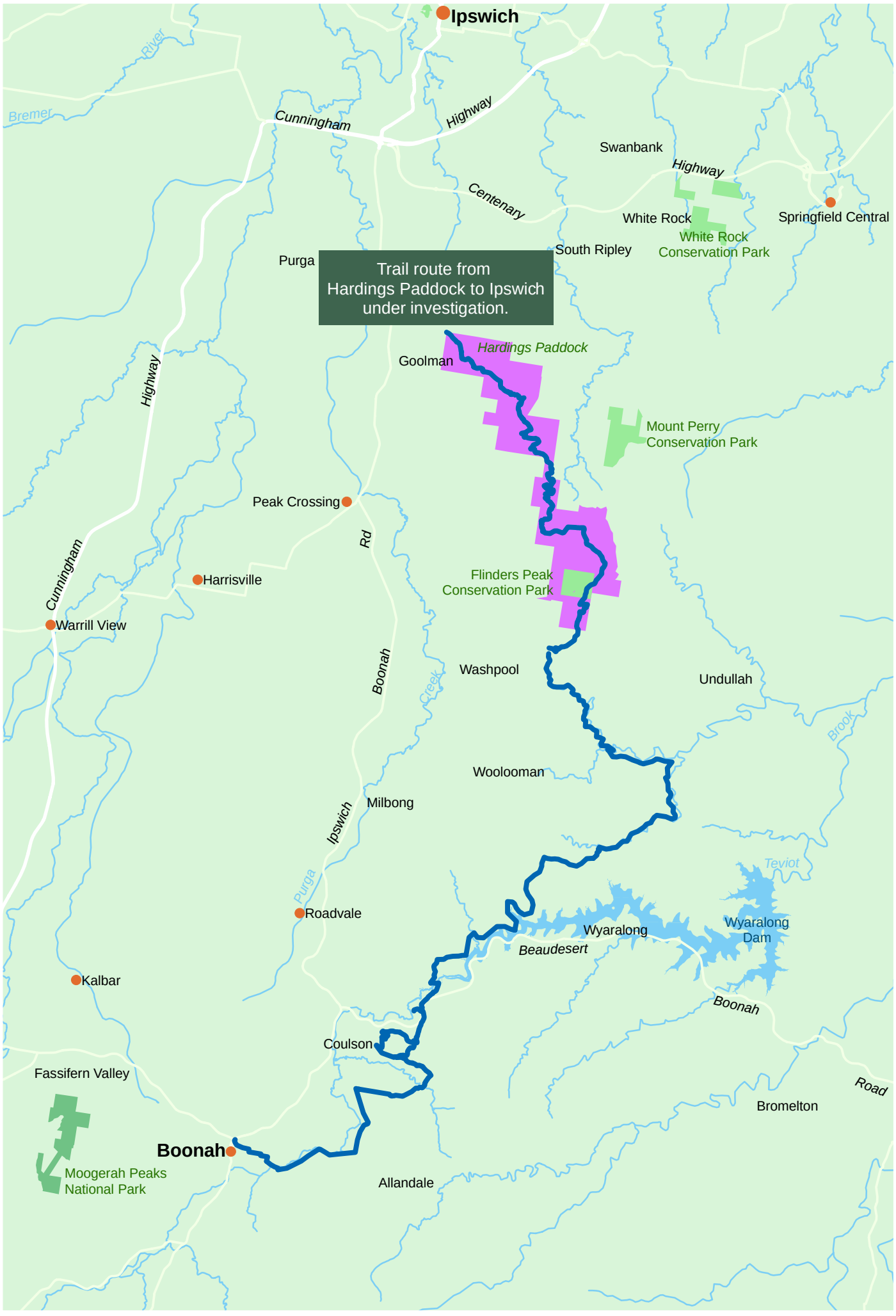
Looking forward. Delivering now.

The Department of Infrastructure and Planning leads a coordinated Queensland Government approach to planning, infrastructure and development across the state.

Queensland Government

Disclaimer

GSP_0029_.001_De


Ipswich
Bremer River
Cunningham Highway
Swanbank
Highway
Centenary
White Rock
Springfield Central
White Rock Conservation Park
South Ripley
Purga
Trail route from Hardings Paddock to Ipswich under investigation.
Hardings Paddock
Goolman
Highway
Mount Perry Conservation Park
Peak Crossing
Rd
Cunningham Highway
Harrisville
Flinders Peak Conservation Park
Warrill View
Boonah Creek
Washpool
Undullah
Brook
Wooloomin
Milbong
Ipswich
Purga
Teviot
Roadvale
Wyaralong
Wyaralong Dam
Beaudesert
Kalbar
Boonah
Coulson
Fassifern Valley
Road
Bromelton
Boonah
Moogerah Peaks National Park
Allandale

1

Boonah to Ipswich Trail—A recreation trail for touring cyclists, horse riders and walkers

The Boonah to Ipswich Trail will be a 68 kilometre recreation trail for touring cyclists, horse riders and walkers. When completed, it will connect the communities of Ipswich and Boonah, possibly with branch trails to Undullah Road. While the new Ripley Valley township is being developed, the northern end of the Boonah to Ipswich Trail will be at the Ipswich City Council recreation area at Hardings Paddock. The trail will be located on land owned by Local Governments, public roads (which may be formed or unformed) and the State Government.

The proposed route passes through a rugged and scenic landscape dominated by native vegetation. Major features include Flinders Peak, ridges between Purga Creek, Teviot Brook and the Logan River, and the site of the Wyaralong Dam on Teviot Brook. High points along the trail have views south and west to the Scenic Rim, east to Brisbane and Moreton Bay, and north to the D'Aguilar Range.

The trail will provide recreation opportunities for current and future residents of the region, especially Ipswich and the Western Corridor, the planned Ripley Valley township, western Logan City, Boonah, Beaudesert and the proposed urban centres at Greenbank Central, New Beith and Flagstone. These nearby areas are expected to have a combined population of about 640 000 by 2026.

In January 2007, the Queensland Government announced $8.8 million funding over five years to construct three new regional recreation trails in partnership with the Ipswich City Council, Sunshine Coast Regional Council, Scenic Rim Regional Council, Somerset Regional Council and South Burnett Regional Council.

One of these new trails is the Boonah to Ipswich Trail being delivered through a partnership between the Department of Infrastructure and Planning, Ipswich City Council and Scenic Rim Regional Council. A total of $2.4 million is available for development of the Boonah to Ipswich Trail, including design and construction of infrastructure such as horse yards, toilets, water tanks, fencing, gates, car parks, road crossings and signs for safety, information and direction.

The trail is part of the State Government's investment in outdoor recreation and protection of our environment in South East Queensland to manage the impacts of growth. The implementation of the trail demonstrates how the State Government through Growth Management Queensland is protecting more land for public recreation and is delivering sustainable outcomes for Queenslanders.

This initiative helps achieve the Queensland Government's Q2 Target of protecting 50 per cent more land for nature conservation and public recreation.

2

About these guidelines

These guidelines are intended for use by staff from the Department of Infrastructure and Planning, Local Governments, other partner organisations and by approved external suppliers. This document outlines how to apply the Boonah to Ipswich Trail brand and visual identity elements consistently across all Boonah to Ipswich Trail communication materials and signage.

All forms of visual communication can help trail users to understand where to go, how to behave, what equipment and skills they need and understand the stories of the places they visit. They also help ensure safety, sustainability and compliance with relevant laws.

It is essential that these guidelines are applied in all Boonah to Ipswich Trail communication materials and signage without exception.

The style guide takes into consideration the following principles:

Consistency and uniformity of signage

Signage is recognised as an essential element of a quality trail and all signage erected at trail heads and along the Boonah to Ipswich Trail will conform to this guideline.

Adherence to recognised standards

Trail construction, signage, trail markers and trail classification will comply with recognised Australian Standards, thereby ensuring a high quality and safe experience for all trail users.

Quality information, including brochures and mapping

The Boonah to Ipswich Trail will have quality on-trail information, as well as professionally produced and widely available trail brochures and maps.

Outstanding interpretive material

The Boonah to Ipswich Trail will have on-trail interpretive material and off-trail media, providing trail users with a greater appreciation of features along the trail.

As the Boonah to Ipswich Trail is located within a number of Local Governments, it is important to maintain trail identification to aid trail users. Marketing collateral, signs and trail markers also have a role to play in meeting safety and sustainability goals. Graphic design guidelines and examples of trail signage are provided in this document.

It is recommended that the visual elements of the Boonah to Ipswich Trail be reproduced from original artwork. All communication materials and signage must be approved by the Department of Infrastructure and Planning.

Drafts for approval can be emailed to **EnquireGMQCommunicat@dip.qld.gov.au.**
Please allow at least five business days for turnaround.

Further information can be obtained from the Department of Infrastructure and Planning.

Email: **EnquireGMQCommunicat@dip.qld.gov.au**
Telephone: 07 3227 8548
Web: www.dip.qld.gov.au

Why we need a visual identity

The Boonah to Ipswich Trail requires its own visual identity to:

- build a strong brand that people recognise, want to associate with and feel they are part of
- raise people's awareness of the Boonah to Ipswich Trail and its events and activities
- provide consistency across the use of Boonah to Ipswich Trail graphic identity elements (logo, colours and font).

The Boonah to Ipswich Trail logo is a key visual asset to help us connect with the audience. It provides a guarantee of the quality of the products and services associated with the project.

3

Elements of the Boonah to Ipswich Trail visual identity

Boonah to Ipswich Trail logo

The Boonah to Ipswich Trail logo provides an insight into the landscape and silhouette of the mountains of the Scenic Rim. The colours have been chosen to represent the landscape heritage of the Scenic Rim.

Incorrect use of logo

DISTORTION

REVERSED

LOW RESOLUTION

Boonah to Ipswich Trail colour palette

The Boonah to Ipswich Trail has been assigned a particular colour palette which is to be used consistently on all communication materials and signage in conjunction with the trail logo.

It is recommended that Boonah to Ipswich Trail signage uses two lead colours, that means, a dark blue colour for the sign border (C81 M37 Yo K76) and white colour for the background. For examples of Boonah to Ipswich Trail signage refer to the signage guidelines in this document.

LOGO COLOUR PALETTE

CMYK	C-81 M-37 Y-0 K-76	C-75 M-40 Y-72 K-28	C-65 M-18 Y-0 K-0	C-0 M-0 Y-0 K-0
PMS	534C	357C	284C	White

4

Other logos

The logos of the Queensland Government, including Toward Q2, Ipswich City Council and Scenic Rim Regional Council must be included in all communication materials, and they should be included on signs where applicable and space allows. The matrix below provides guidelines for when to use the trail logo, future trail website address, the Queensland Government and Councils' logos.

The logos of related Queensland Government initiatives such as *Find your 30* should also be included on communication materials; however, they are optional on signage. These logos are managed under the Queensland Government Corporate Identity Guidelines. For access to these guidelines email corporate.id@premiers.qld.gov.au.

Signage–branding matrix

	Trail logo	Trail web address (where applicable)	Queensland Government / Toward Q2 logo*	Partner logos, e.g. Councils
Information signs	√	√	√	√
Descriptive signs	√ (except for small, square trail markers)	√ (except for small, square trail markers)	√ (except for small, square trail markers)	√ (except for small, square trail markers)
Interpretive signs	√	√	√	√
Regulatory signs	√	x	x	x
Warning or risk signs	√	x	x	x
Event/ temporary signs	√	√	√	√
Trail head signs	√	√	√	√
Promotional signs	√	x	√	√
Directional signs	x	x	x	x

* The *Find your 30 minutes of activity a day* logo is optional on signage.

Toward Q2 Tomorrow's Queensland | Queensland Government

Horizontal format

Queensland Government

Queensland Government

Stacked format

Queensland Government

Queensland Government

Side Stacked format

Queensland Government

Queensland Government

Find your 30 minutes of activity a day

City of Ipswich

Scenic Rim Regional Council

Typeface

Meta is the corporate typeface and Rotis Serif is the supporting typeface to be used within the framework of the Queensland Government's corporate identity system.

The consistent use of these typefaces is important to the integrity of the government's corporate identity.

Meta is the preferred typeface for departmental and agency name styles, titles, stationary, publications, text headings and sub-headings, signage, and other applications outlined in these guidelines.

Arial may be substituted for Meta in desktop-generated business documents, letters and internal communication material when the corporate typeface is not available. Aria should never be substituted for Meta in name styles.

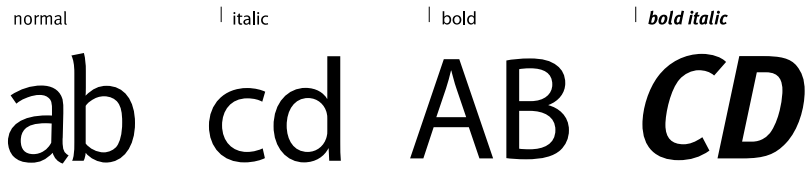
Verdana is the Queensland Government typeface of choice for the web.

The Boonah to Ipswich Trail logo uses the font Miehle.

Boonah to Ipswich Trail communications material also uses Handwriter as supporting font for headings and the tagline On the right track.

This font should not be used for subheadings and body copy.

Meta



Rotis Serif

Arial

Verdana

Miehle – Boonah to Ipswich logo font

ABCDEFGHIJKLMNOPQRSTUVWXYZ

Supporting font for headings and tagline

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ON THE RIGHT TRACK

6

Who the visual identity applies to

Boonah to Ipswich Trail Community Partnership Program recipients

Those organisations that receive funding through the Boonah to Ipswich Trail Community Partnership Program are required to use the Boonah to Ipswich Trail logo and the Queensland Government logo to acknowledge the funding support.

To help with placement of these two logos follow these guidelines below:

- The two logos must not be placed too closely to other logos or each other.
- Where possible, there should be sufficient space around the Queensland Government logo so that it stands alone and cannot be misinterpreted as being part of another logo.
- Graphic elements in any marketing collateral should not overpower the Queensland Government logo.
- The Boonah to Ipswich Trail logo and the Queensland Government logo should be the same size.
- The Queensland Government logo should not be reproduced at less than the minimum size (13 millimetres high x 14.5 millimetres wide).
- The preferred position for the Queensland Government logo is top or bottom right of the front cover of materials. However, the logo may be positioned elsewhere according to layout requirements. The Boonah to Ipswich Trail logo may be placed next to the Queensland Government logo.

Queensland Government agencies

Queensland Government departments may choose to use the Boonah to Ipswich Trail visual identity elements on their own marketing materials related to the Boonah to Ipswich Trail. The Queensland Government Corporate Identity Guidelines apply in this instance.

Local Government, partners and sponsors

Local governments associated with the trail must use the Boonah to Ipswich Trail logo and visual identity as well as the Queensland Government logo to acknowledge the partnership with the Boonah to Ipswich Trail and recognise the government's funding support.

Funding acknowledgement requirements

If you receive funding from grants for any rail trail projects from the Department of Infrastructure and Planning, you need to read these guidelines in conjunction with the department's funding acknowledgement requirements.

Grants approved before the introduction of the department's funding agreements are required to comply with the clause contained in their funding agreement pertaining to the acknowledgement of Queensland Government funding contributions. Specifically, the clause states:

The organisation must acknowledge the Queensland Government's funding contribution:

- on their organisation's website
- by, at its cost and where relevant, erecting signage during construction at the project site and placement of a plaque and signage once construction is finished in accordance with guidelines which can be accessed at the department's website
- by acknowledging it in publicly made statements, promotional material or appropriate documentation or publications
- by inviting the Minister to attend commencement, groundbreaking, opening, other ceremonies and events connected with the approved project(s)
- by inviting the Minister to speak at opening ceremonies, speeches and addresses at all events connected with approved project(s).

All joint publicity is to be approved in advance by the department. The organisation will ensure that the Queensland Government logo is used in the format provided by the department without alteration.

More information about funding acknowledgement requirements is available at the department's webpage www.dip.qld.gov

7

Boonah to Ipswich Trail signage guidelines

Several kinds of signage are required on a trail including distance, directional, warning, promotional, etiquette and interpretive signs. Each should be standardised along the trail and, where appropriate, concordant with relevant local or Australian standards or practices.

AS 2156.1–2001 Australian Standard™ walking tracks classification and signage provides a classification system for walking tracks and is the basis for the Boonah to Ipswich Trail signage guidelines. The standard provides guidance on the design, fabrication and use of trail markers and information signs to be used for walking trails. There are no Australian Standards for multi-use trails.

The Boonah to Ipswich Trail signage will also deliver on the recommendations in the Boonah to Ipswich Trail plan, the SEQ Active Trails Strategy and SEQ Active Trails Strategy stakeholder report.

There are five types of trail signs that form part of the Australian Standards which are:

1. information signs
2. descriptive signs
3. interpretive signs
4. regulatory signs
5. warning or risk signs.

Additional types of signs (event and temporary; trail head and promotional signs) have been included as independent categories.

Information signs

Information signs provide information related to the trail and its use, including:

- registration and reporting recommendations
- equipment recommendations
- personal safety precautions
- environmental protection (minimal impact practices)
- skill and fitness level required
- specific conditions.

Boonah to Ipswich Trail information sign

8

Descriptive signs

These signs specify information necessary for the safe and enjoyable use of the trail. The signs should be large enough to be read at some distance.

Descriptive signs may include:

- track classification
- type of trail (e.g. loop, one-way, return)
- effect of weather conditions
- elements of interest, trail conditions or difficulties (e.g. facilities, waterfall, slippery rocks)
- opening and closing hours of the trail
- distance to designated point
- estimated completion time
- direction of the initial course of the track
- graphic image/map for orientation.

The Boonah to Ipswich Trail code of conduct signage must be installed at every nominated trail head in recognition of the expected pattern of use (potentially) by all three primary user groups (walkers, cyclists, horse riders). These signs should inform all groups about appropriate behaviour when in the vicinity of each other which is necessary for the safe and enjoyable use of the trail. Maps of the trail heads along the trail are included in the Boonah to Ipswich Trail plan.

Boonah to Ipswich Trail code of conduct sign

Trail markers

In relation to trail markers, the key recommendations of *AS 21.56.1–2001* are that:

- directional arrows should either be at 90 or 45 degree angles only
- trail markers should be designed for durability and should be made of either aluminium alloy (at least 1.6 millimetres thick) or galvanised steel (at least one millimetre thick)
- markers should have a reflective finish to assist with night-time identification and should be of a colour that is clearly visible within the landscape (e.g. blue, yellow, orange and red) while also considering the effects of weathering
- the intervals at which trail markers are placed should be in accordance with trail classification and local site conditions such as vegetation, topography and weather
- trail markers should be placed at a consistent height above ground (between 0–2 metres) and should relate to topographical conditions.

In particular, two types of trail markers have been established to reflect the fact that the trail intersects with other trails, e.g. in the Wyaralong Dam section.

It is recommended that trail markers in exclusive Boonah to Ipswich Trail sections are branded as follows:

- dark blue border (C81 M37 Yo K76) derived from the Boonah to Ipswich Trail logo colour palette
- white, reflective background.

Boonah to Ipswich trail markers on totem

10

For trail markers in trail sections that intersect with other trails and are displayed in conjunction with other trail markers and signs, e.g. in the Wyaralong Dam section, plain metal markers are used. They display the Boonah to Ipswich Trail logo, directional arrows and pictograms in black only.

All Boonah to Ipswich Trail markers have a size of 100 millimetres x 100 millimetres.

Directional markers do not need to be placed at frequent intervals along straight sections of the trail as the formation is clear and obvious, and even the most inexperienced of users will feel confident that they can remain on track. They only need to be placed where the main trail deviates from the corridor or intersects with another trail network.

Recognising that users will join a trail at any number of points, installing distance and direction signs at road crossings is also required to not only benefit those joining the trail at that location, but to provide additional information for users already on the trail. In addition, such signage provides good reference points for emergency services.

Emergency markers should be located every 500 metres. The Boonah to Ipswich Trail emergency response plan will require that all major road crossings should also have a GPS reference/identifier on the post (underneath the Give way sign) for use in emergencies and as a location aid for those in stress. There is also a need to include the emergency telephone number at all trail heads (on the trail head sign) and to clearly identify that one number will contact all three emergency services (police, ambulance, fire).

While the emergency number from a landline is 000, the emergency number that works best from a mobile phone is 112. Trail users who are deaf, hearing or speech impaired dial 106. Information on what to do in an emergency, the location of public phones (there will be none on the trail itself) and the capacity for a flip-down sign indicating trail closure (due primarily to fire, flooding or maintenance work) should also be included on trail head signage.

In consideration of the cultural significance of the trail and the changing vegetation along the trail, it is a priority that all signage preserves the natural and cultural feel of the trail.

Directional markers for the Boonah to Ipswich Trail are to be mounted on recycled wooden fence posts or sleepers. Directional arrows, classification icons and distance can be indicated by means of routing the post or mounting metal printed plates. As the trail accommodates two-way traffic, the markers will need to be bi-directional.

To avoid potential injuries from sharp edges or nails/screws used to attach the trail marker, markers should not be placed in positions where a post will be used as a hand-hold.

Boonah to Ipswich Trail signs should clarify to trail users the owner or manager of the trail. In the first instance, these are the Queensland Government and the relevant Local Government authorities. This allows recognition of which agency or body is responsible for the trail and associated infrastructure if there is a problem that should be rectified.

Trail classification pictograms

Easy

This classification is used to identify the easiest tracks that are suitable for users who don't have the skill or desire for more challenging trails. They have a lower level of risk for the user and consequently offer less variety than those of greater difficulty. These tracks are appropriate for novice through to advanced users and require little skill or physical challenge to complete. They generally follow obvious, well marked tracks and roads. Grades on average are gentle (up to five per cent), although short sections may be encountered of up to 15 per cent. The track surface is generally smooth, level and wide with generous clearing of trees, limbs and other vegetation. Few obstacles will be encountered. Changes in elevation are minimal. Streams are most often crossed with bridges.

Moderate

Tracks in this classification rating are designed to meet the expectations of the majority of trail users. They require skills beyond that of a novice and will at times challenge the average trail user. These routes are suitable for intermediate through to advanced users. Users should expect to encounter terrain that is on average moderate (up to 10 per cent), although some short steeper sections of up to 25 per cent may be encountered. These trails are generally narrower and may contain obstacles such as fallen trees or exposed roots and rocks. Changes in elevation are moderate. Streams are most often crossed by fording.

Advanced

These trails are designed for users with advanced skills who are seeking a higher risk level. They are recommended for advanced through to expert users only and will provide a definite physical challenge. The terrain on average is steep (up to 15 per cent), although users should expect to encounter very steep and long sections up to 30 per cent. Users contemplating these tracks should have considerable skill in their chosen activity and have a high level of competence in outdoor skills such as navigation, first-aid and survival. Trails in this category are rarely graded and may be indistinct or not be well marked in places. Minimal clearing of trees, limbs or other vegetation results in hampering the progress of the user. Expect to encounter frequent and sometimes difficult obstacles. Changes in elevation are usually severe. Streams are most often crossed by fording and are sometimes difficult.

Symbols, amenities and services

- School
- Fire station
- Police station
- Community hall
- Playground
- Ambulance
- Camping
- Water on tap
- Public toilet
- Accommodation
- Post office
- Horse yards
- Caravan or trailer sites
- Telephone
- Petrol
- Picnic area
- Visitor information centre
- Parking area

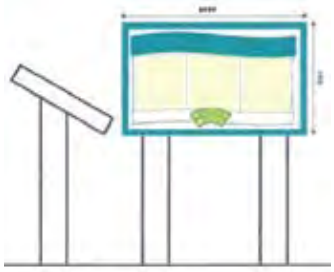
Shared trail give way pictogram

12

Interpretive signs

Interpretation signs convey educational material about a natural or cultural feature on a trail. The content is the prerogative of the land managing authority and the trail proponent. Interpretive signs are used for points of interest on self-guided trails, scenic lookouts and roadside parking bays. They should be planned and designed as part of an overall site interpretive plan including orientation signs, markers, directional signs and other interpretive media.

Outdoor interpretive signage that satisfies the conditions of *Ballantyne, Hughes & Moscardo (2002)* is effective when it is located away from other distractions (style). On a long rail trail even small clusters of interpretive and directional signage in



the form of a triptych will attract attention (location). Novelty and colour enhance attention. This is one of the reasons for the traditional choice of signage material for interpretation signs and panels on the rail trail.

The height of the pedestal is determined by the needs of the trail users—in this case cyclists, walkers and horse riders. Horizontal signage is usually set low enough for walkers and people in wheel chairs to view the material easily. A pedestal one metre in height might be more appropriate for visitors to the trail.

Outdoor artistic displays are less intellectually challenging than interpretive signage but they demand that visitors engage with the structure at least long enough to provide an explanation for why it is there. Point of interest markers are used to identify a point or feature along a trail where there is insufficient information about the site to warrant the production of an interpretive sign.

Free-standing outdoor art, murals on outdoor furniture or buildings in the towns near the trail also provide interpretation of the landscape and cultural heritage. Outdoor art displays along the trail are recommended.

Regulatory signs

Regulatory signs specify legal requirements and regulations associated with the use of a track. The content is the prerogative of the land managing authority and statutory bodies.

No trail bikes and No vehicles signage is required at each access point to the trail.

Warning or risk signs

These signs warn of a particular danger or risk and should include an appropriate pictogram identifying the hazard with a statement of the hazard, consequence and precautionary action.

Warning signs play an important role in risk and safety management of recreational areas such as trails for three principal reasons:

1. It informs users of dangers, safety issues and other relevant information.
2. It offers some protection to the land manager who is required to warn users of dangers, prohibitions other safety information.
3. It provides an economic alternative to staffing visitor areas where there is a risk.

There are a number of locations along the trail corridor which demand warning signage, primarily at the many road crossings facing trail users and road traffic.

13

Event and temporary signs

Temporary signs may be appropriate where an event or visitor attraction or service has limited and seasonal opening times. These signs may be subject to the approval of the land manager, the local planning authority for public roads and easements or the Department of Transport and Main Roads if it is on a major arterial road. Costs are paid by the applicant including the sign and advertising costs.

If a sign is erected for a period of less than nine months of the year it is classed as a temporary sign. A temporary tourist sign can only be erected if the attraction is open to the public for more than three months of the year. The location and period of the event or road closure should be advertised through local print media and local visitor centres prior to the event or road closure. This requirement may vary with local planning laws.

Trail head signs

Given that much of the usage of the trail is likely to be walkers and mountain bikers from other areas and from horse riders who float horses to the trail, formal trail heads are important (note: a trail head is a starting point with parking, signage, toilets etc.). Trail heads will be located at strategic locations. Basic facilities such as parking, a picnic table or seats in the shade, interpretive information and mapping showing distances to features and towns along the trail, and connections with other trails, is important and will prove useful to all trail users.

All trail heads will need trail head signage with map panels, interpretive material and information. Trail head signage should also include emergency information including what to do in an emergency, emergency evacuation procedures, the numbers to call, the location of public phones (there will be none on the trail itself) and the capacity for a flip-down sign indicating trail closure (due primarily to fire, flooding or maintenance work).

Promotional signs

Though the trail may be quite familiar to many local residents, it is recommended that a number of promotional signs be erected at major road crossings to give prominence to the trail. The installation of these signs will make motorists and other road users more aware of the trail, hopefully inducing greater care when in the area.

This includes signage at trail head locations and directional signage on existing street signage. This style of promotional signage has been used to great effect on other trails throughout Australia, increasing general awareness of the trail among the broader community.

General trail signage maintenance

The majority of signs will occur at trail heads. Each trail head should be carefully checked to ensure that all signage is present, and that all signs are clearly visible and legible.

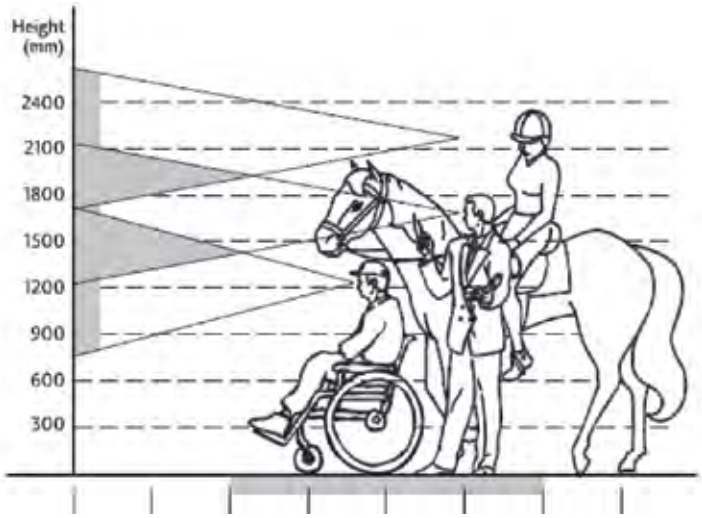
Particular attention needs to be given to signs at road crossings or junctions. Each crossing should be carefully checked to ensure that all signage is present and that all signs are clearly visible. Particular attention must be given to ensuring that trail crossing ahead signs (on the roadside approaching the trail crossing) are not obscured by overhanging vegetation.

An inventory of locations needs to be prepared to assist in regular maintenance.

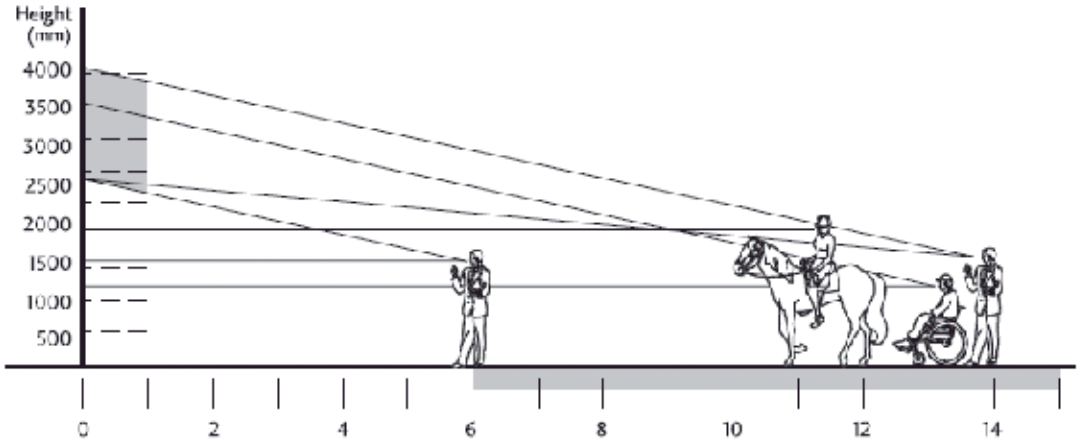
Optimum viewing distances for low position signs

As a general rule, low position signage intended for close viewing (indoor directory or directional signage) should be centred at a height of 1500mm.

Overhead or suspended signage should (as a general rule) be no lower than 2500mm at its lowest point to prevent accidental or intentional impact.



Optimum viewing distance for high position signs



Department of Infrastructure and Planning
PO Box 979 Bundaberg QLD 4670
tel +61 7 3227 8548
planning@dip.qld.gov.au

www.dip.qld.gov.au/climatechange

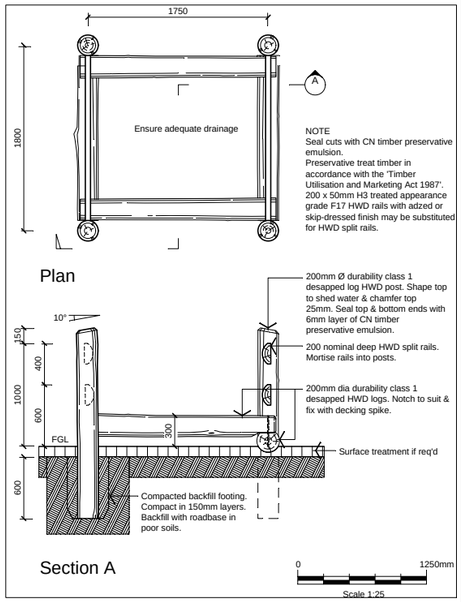
Appendix 4: Queensland Parks and Wildlife Services sign manual (brief summary)

The Queensland parks and wildlife service sign manual was created to help Queensland Parks and Wildlife Service (QPWS) staff to provide accurate, well-presented information to park visitors. It replaces the *Department of Natural Resources Sign Manual* (1996) and draft *QPWS Sign Manual* (2002).

The QPWS Sign Manual is used to:

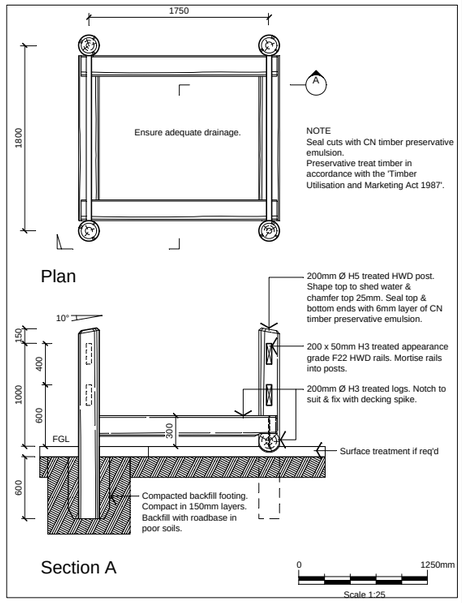
- help design a sign plan for a park or district
- browse the sign catalogue to order the right sign for a job
- look up recommended techniques for installing and maintaining signs
- access specifications for materials and infrastructure associated with signs
- refer to the writing style guidelines for parks
- apply Australian and international standards for safety signs and
- incorporate Queensland Government and QPWS corporate identity standards.

Appendix 5: Horse stiles



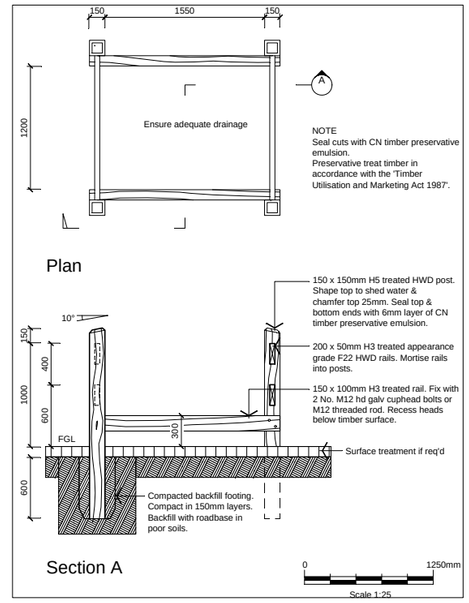
Horse Stile - type 1

Landscape setting class 4 & 5



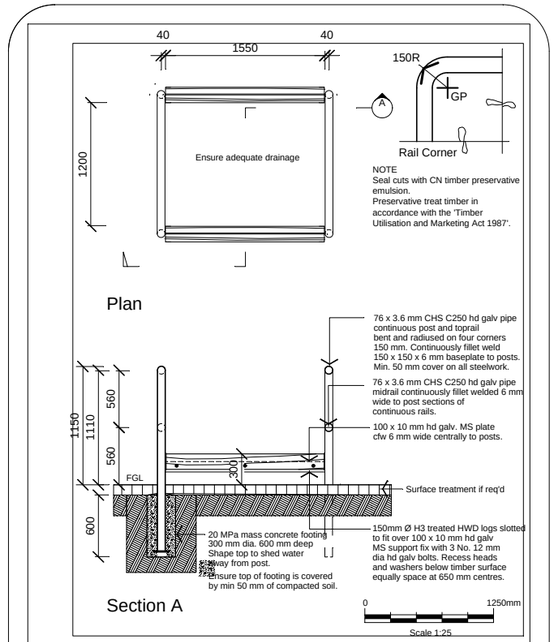
Horse Stile - type 2

Landscape setting class 6



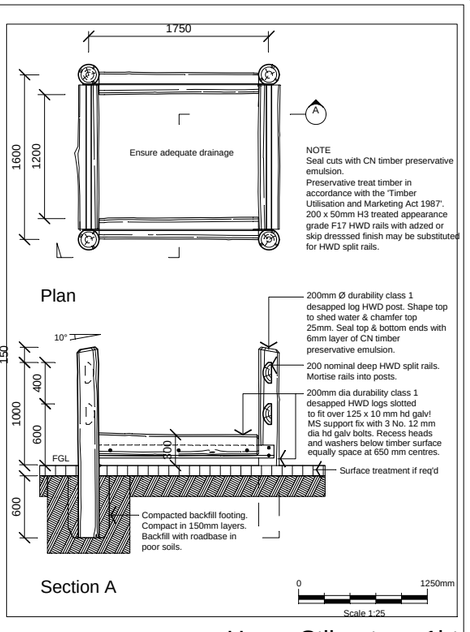
Horse Stile - type 3

Landscape setting class 7



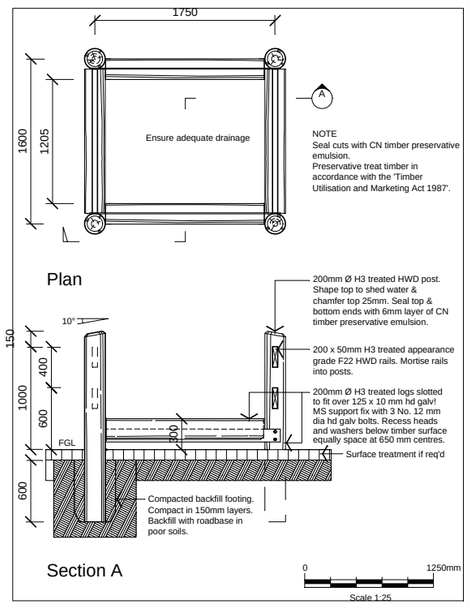
Horse Stile - type 4

Not landscape setting class appropriate



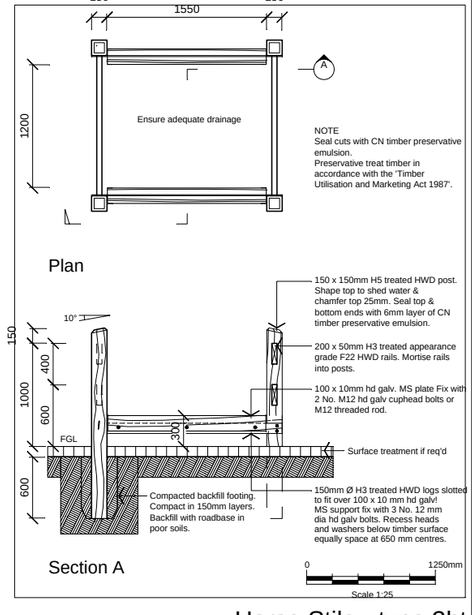
Horse Stile - type 1ht

Landscape setting class 4 & 5



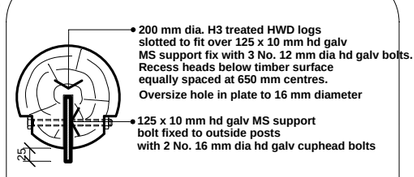
Horse Stile - type 2ht

Landscape setting class 6



Horse Stile - type 3ht

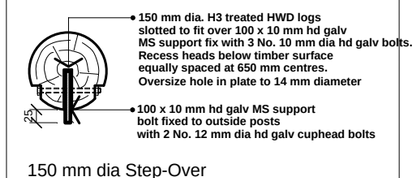
Landscape setting class 7



200 mm dia. H3 treated HWD logs slotted to fit over 125 x 10 mm hd galv MS support fix with 3 No. 12 mm dia hd galv bolts. Recess heads below timber surface equally spaced at 650 mm centres.
Oversize hole in plate to 16 mm diameter

125 x 10 mm hd galv MS support bolt fixed to outside posts with 2 No. 16 mm dia hd galv cuphead bolts

200 mm dia Step-Over



150 mm dia. H3 treated HWD logs slotted to fit over 100 x 10 mm hd galv MS support fix with 3 No. 10 mm dia hd galv bolts. Recess heads below timber surface equally spaced at 650 mm centres. Oversize hole in plate to 14 mm diameter

100 x 10 mm hd galv MS support bolt fixed to outside posts with 2 No. 12 mm dia hd galv cuphead bolts

150 mm dia Step-Over

detail of rails to prevent destruction by chain saw

Anti-Vandal Step-Over Rails

Scale 1 : 5

300
200
100

Original sheet size B1

QUEENSLAND PARKS AND WILDLIFE SERVICE

Landscape Architectural Services

District Manager

Manager (Park Services)

Regional Landscape Architect

Regional Service Director

Park

Horse Trail Network

South Coast and Sunshine Coast Section

Project

Proposed Horse Trail Access Stiles

Amendments

Date **January, 2009**

Scale **1 : 25 1: 5**

Drawn **DW MBH**

Checked

Surveyed

N

J 2062

Location Code

Drawing No **D 01**

Issue

Sheet No of **1 1**

Appendix 6: Submission form

Submission form for feedback on the draft Boonah to Ipswich Trail Plan

You are invited to have your say on the draft Boonah to Ipswich Trail Plan. Your feedback will help us finalise the plan and provide a new recreation trail for non-motorised trails users in South East Queensland. For more information on the proposed trail refer to the draft Boonah to Ipswich Trail Plan or visit www.dip.qld.gov.au/bit.

How to have your say

Option 1—use this form to complete your submission and submit via post, fax or email

Option 2—use this form as a cover sheet and attach it to your more detailed submission, then submit via post, fax or email

Responses must:

- be made by **5pm on Friday 18 February 2011**
- include the name and address of the respondent
- be a structured response under the headings of the submission form.

Part 1: Your details

	Submitter 1	**Submitter 2**
Title: (Mr, Mrs, Ms, Dr, Other)		
Surname*:		
First names*:		
Organisation:		
Position:		
Address*:		
Town/City*:		
State*:		
Postcode*:		
Email:		
Phone number:		
Fax:		
Mobile:		
Date:		

Please note: fields marked with an asterisk (*) must be completed

Part 2: Your feedback

Areas of the draft Boonah to Ipswich Trail Plan	**Your comments/recommendations** (Please include relevant facts and circumstances to support your feedback where possible).
Management plan—your comment is sought on guiding principles and other issues that the trail management plan needs to deal with.	
Trail sharing—your comment is sought on how to manage the recreation trail on existing public roads.	
User preference—your comment is sought on additional preferences for the trail (see 4.3.4 User preferences).	
Trail users and large-scale events—your comment is sought on the delivery of large-scale and competitive events on the trail.	
Trail infrastructure—your comment is sought on location of camping facilities, access points, drinking water supplies, seating, interpretive and information signage and trail head requirements.	
Trail maintenance—your comment is sought on options for the ongoing maintenance of the trail.	
Additional comments	

If insufficient space, please writer your comments/recommendations on a separate page and attach to your submission. Photocopies are also accepted.

Send your completed submission by 5 pm, 18 February 2011 to:

The Project Manager
Draft Boonah to Ipswich Trail Plan
Department of Infrastructure and Planning
PO Box 15009
City East Qld 4002

fax: +61 7 3224 4683
email: info@dip.qld.gov.au

For enquiries contact the department on +61 7 3227 8548. Electronic copies of the draft Boonah to Ipswich Trail Plan and this submission form can be downloaded at www.dip.qld.gov.au/bit

Department of Infrastructure and Planning
PO Box 15009 City East Qld 4002 Australia
tel +61 7 3227 8548
info@dip.qld.gov.au

www.dip.qld.gov.au