Brisbane City Council

BCC BUSHLAND TRAIL BASED OUTDOOR RECREATION ASSESSMENT

STAGE 1: LANDSCAPE SCALE ASSESSMENT

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Prepared by
lloydconsulting

And

Central Queensland Environmental Services

Mary Maher & Associates
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Core Team

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Mary Maher was Council’s first environment officer and first manager of the Environment Management Branch (1988-1992). During her time in Council she commissioned, reviewed and developed the comprehensive program of work recommended in the first biodiversity strategy for Brisbane, the Bushland Management Strategy. Key initiatives then were the Bushland Acquisition Levy (and the property acquisition list), the detailed vegetation communities mapping and the introduction of the Vegetation Protection Orders.

From 1992 Mary’s consultancy in environmental planning undertook a series of conservation plans for major Councils in South-east Queensland, mostly notably Ipswich, Maroochy and Gold Coast. She undertook several projects on regional landscape planning and open space planning for the Regional Open Space (ROS) project. For Brisbane City Council Mary conducted an evaluation of the Conservation Partnerships Program (2003). In 1997 she partnered with Strategic Leisure to prepare a mountain bike strategy conducting an inventory and assessing the potential for suitable sites for mountain biking in Brisbane’s natural areas.

**Catherine Pickering, ecologist, recreation in protected areas**  
*BSc (Hons), PhD ANU*

Catherine Pickering is an Associate Professor at the International Centre for Ecotourism, Griffith University. She has undertaken a wide range of research relating to sustainable tourism, including research in recreation ecology, nature-based tourism, protected area management, alpine ecology and the effects of climate change on tourism and tourism destinations. This includes research on trampling, horse riding and mountain bike impacts, in a range of habitats. She has over 140 publications, including over 60 papers published in international referred academic journals.

**Kieran Richardt, researcher and field ecologist**  
*BSc, Griffith University*

Kieran has a background in Environmental Science, Conservation Biology and Ecotourism. In 2005, Kieran co-founded the tourism and environmental education department of Natura Pacific Pty Ltd. Kieran’s Degree is in Applied Science from Griffith University (Gold Coast) with majors in Environmental Science and Wildlife Biology and has worked on many projects around the world. From constructing and writing educational material for centres in Costa Rica and Panama to training guides and rangers in Thailand, Kieran relies on using sustainable tourism and his community engagement skills as a tool for conservation.
Specialist Input

Marty Lambert, recreation specialist

*Master of Education - Social & Environmental, B.App.Sc (Parks & Recreation), A. Dip. - Rural Techniques – Wilderness Reserves & Wildlife*

With more than 25 years’ experience in planning and management of sport and recreation, Martin is the former Principal of the successful consultancy – Lambert Recreation Planning. Martin has specialist skills in parks management and open space planning, infrastructure charges, recreation planning, natural area management, outdoor recreation planning and environmental interpretation. He has a detailed understanding of the Integrated Planning Act (IPA) as it relates to infrastructure planning for parks, recreation and community facilities.

Dr. Alistair Melzer, ecology specialist

*PhD, BSc (Hons) Botany; Botanist & Ecologist*

Dr Melzer is an independent environmental scientist based in Central Queensland. Dr Melzer has twenty years experience in contract research, biological audits, management planning and environmental problem solutions for Queensland’s mining, minerals processing and power generation sectors as well Natural Resource Management (NRM) organisations. He is experienced in the design and implementation of biological surveys, air photo interpretation, mapping, landscape and ecosystem classification, and assessment of ecosystem health, strategic planning and management.
Executive Summary

Lloyd Consulting was commissioned as an independent expert team by Brisbane City Council (BCC) to develop and test a methodology for assessing the sustainable recreational use of trails for mountain biking in seven bushland areas - Chermside Hills Reserve, Karawatha Reserve, Kedron Brook Floodway, Lake Manchester Reserve, Leacroft Road Park, Mount Coot-tha Reserve and Toohey Forest Park in the Brisbane City area. The methodology was to include desktop analysis of existing information, targeted consultation and trialling of the proposed methodology.

This study has developed a trails planning methodology involving three scales of assessment – landscape (seven reserves), single reserve (multiple trails within a reserve) and on-ground trails (assessment of specific tracks) assessment. This methodology is derived from examination of the literature on environmental and social issues associated with MTB riding and review of previous BCC reports including on Mountain Bike (MTB) riding and other recreational uses on the natural values of the reserves.

The likely types of MTB riders who might want to use bushland areas around Brisbane and their preferences in terms of site and tracks were characterised. Three likely types of riders are (1) recreational riders, (2) active riding or traditional MTB riders and (3) extreme /free riding or down-hill bikers.

A review of environmental and social issues associated with mountain biking indicates there is considerable diversity in attitudes towards the social and environmental appropriateness of (MTB) riding in more natural locations. For example, there are differences in perception regarding the potential for accidents involving MTB riders and other users, with the limited research available indicating that most accidents do not involve different types of users, but rather MTB riders hitting stationary objects such as trees and shrubs.

Further, the perception of environmental impacts differs markedly between Mountain Bike MTB riders and other users, with MTB perceiving they have fewer impacts than some other users perceive MTB to have. Trails including those used by MTB have a range of impacts on natural flora, fauna, aquatic systems and soils. However, there is limited current research that directly compares impacts from mountain biking with those from other types of use.

This report documents the first stage of assessment in the trails assessment and planning methodology – the Landscape Scale Assessment of the seven reserves. Through an examination of the Ecological Suitability and Desirability by MTB user groups, this assessment ascribes a level of Appropriateness of MTB riding to each reserve.

A high-level desktop study of the ecological suitability rating of each reserve was conducted using Council, State and Commonwealth data bases. Ecological Suitability was assessed in terms of each reserve’s ecological value and likely sensitivity to environmental impacts from MTB riding (Attachment B). The Desirability of each reserve was assessed through reference to the preferences of the different types of user groups in MTB riding, existing facilities and presence of specific features. Finally, using these two sieves of Ecological Suitability and Desirability, each reserve was assigned a level of appropriateness for MTB riding (refer Table 7-9).
As a result of this Landscape Scale Assessment, reserves with wide hardened trails are generally considered appropriate for MTB use without further detailed assessment. The exceptions are Chermside Hills where more work is needed on access points, Karawatha where demand for these wide hardened trails is uncertain and Lake Manchester where demand may be limited by distance from recreation riders.

It is recommended that conditional access be provided to mountain bikers on management trails in Chermside Hills Reserve, Toohey Forest Park, Karawatha Forest Park, Lake Manchester Road Park, Leacroft Road Park (Brisbane Koala bushland) and Mt Coot-tha Reserve. This access can be removed at the discretion of the BCC.

A number of reserves are identified as requiring further investigation for MTB potential. Detailed desk-top assessment followed by on-ground trail assessments should be conducted in Toohey Forest Park, Karawatha Forest Park, Lake Manchester Road Park and Mt Coot-tha Reserve to assess their potential for the provision of single width trails for MTBs. This is only proposed where there are existing single width trails and they are assessed as suitable in the Reserve trails assessment which is the next step in the trails assessment and planning process.

Section 8 documents the proposed approach to completing the trails assessment and planning process including the Reserve Trails assessment (step 2) and the on-ground trails planning.

The planned approach to MTB usage proposed here is an important contribution towards managing these highly valued yet contested reserves. Formal introduction of MTB to reserves in addition to Mt Coot-tha will require strong commitment and material investment from Council and the community of stakeholders to address issues raised in the consultation. As well, this comprehensive management process will work best if it is based on a process of dialogue established between stakeholder groups, to build and maintain good relations between the different user groups in the reserves.
1.0 Introduction

Brisbane City Council (BCC) is committed to conserving bushland for biodiversity of fauna and flora, carbon storage and air quality, improving cityscape amenity, and to provide natural space for the enjoyment of the community. BCC is also committed to providing opportunities for the community to be fit and healthy and to reduce their car usage. This commitment has lead BCC to commission Lloyd Consulting to develop a methodology for the assessment of recreational trail use for mountain biking in bushland areas.

Although Mountain Bike (MTB) riding through natural areas is currently limited to designated bikeways and specified tracks in the Mount Coot-tha reserve, for many years now there has been a demand to increase the number of reserves open to cycling on tracks at a range of levels. There is also evidence that walking tracks are at times being used for cycling and that unauthorised tracks are being created by both walkers and cyclists.

The aim of this project is to provide an independent assessment of the potential for sustainable MTB recreational use of tracks in BCC bushland reserves for outdoor recreation.

This report documents the overall methodology and the conduct of the Landscape Scale Assessment, step one in the MTB trails assessment and planning process. The report includes:

1. A review of the relevant literature on environmental and social issues associated with MTB riding and of previous BCC reports including on MTB riding and other recreational uses on the natural values of the reserves;
2. Characterization of likely types of MTB riders and their preferences in terms of site and track characteristics;
3. Development of a trails planning methodology involving three scales of assessment—landscape (seven reserves), single reserve (multiple trails within a reserve) and on-ground trails (assessment of specific tracks) assessment; and
4. Conduct of the first step, the Landscape scale assessment of 7 reserves involving:
   ▪ interviews with community members with reserve specific knowledge and council staff in units responsible for bushland, park planning, recreation management (Attachment C);
   ▪ A desktop ecological suitability rating of each reserve including the reserves ecological value and likely sensitivity to environmental impacts from MTB riding (Attachment B);
   ▪ A Desirability assessment of each reserve for the different types of user groups in MTB riding, existing facilities and preferred features;
   ▪ Determination of the appropriateness of MTB riding in each reserve; and
   ▪ An outline of the methodology for the second Reserve trails assessment.

The second report in this study will document the Reserve trails desk-top assessment and, subject to Council’s consideration of the recommendations in both reports, work would then proceed to the on-ground Trail-scale assessment of the appropriate reserves.
The structure of this report is as follows:

Section 2: Provides the context and background to mountain biking.

Section 3: Provides a discussion on the need for trail facilities in Brisbane parks including social, environmental and legislative issues.

Section 4: Discusses the appropriateness and suitability of a park to facilitate mountain biking.

Section 5: Discusses the parks that are included in the assessment.

Section 6: Provides a discussion on the methodology of the landscape assessment.

Section 7: Provides the results of the Landscape Scale Assessment.

Section 8: Provides the methodology for the Reserve Trails Assessment.

Attachment A: Provides the Strategic Leisure Report that reviews the social trends and attitudes towards sports.

Attachment B: Provides the Desktop Ecological Assessment Report that reviews the available ecological data for each park and rates the suitability for the park to facilitate MTB riding.

Attachment C: Provides the Interview Prompts used in the community and BCC staff consultations.

Attachment D: Provides maps that contain the current tracks at each park apart from Lake Manchester Reserve and the Bushland Acquisition Maps.

Attachment E: Provides a summary of the key terms used in the report and their definitions.

Attachment F: Provides references used as part of the review of social and environmental issues associated with mountain biking.
2.0 Background and Context

2.1 MTBs – a Brief Context

MTB riding evolved from road bike riding in the mid-1970s and has steadily gained in popularity with the mass-produced MTBs being made and sold for the first time in the early 1980s. The popularity of the activity appears to have already peaked in Europe and the USA, but is still increasing in Australia.

Mountain biking is defined by the type of bike rather than the location or style of riding. The sale of bikes with fat studded tires, strong frames with shocks dominates bicycle sales although not all people purchasing these bicycles would self identify as MTB riders. With advances in bike technology, reduction in cost of entry level bikes and increases in some rider’s experience, along with changes in motivation and opportunities, mountain biking has diversified. Common riding styles include cross-country, touring, downhill riding, free riding and dirt jumping. Locations for mountain biking include streetscapes, ski resorts, designated MTB facilities, state forests and urban and more remote national parks.

Literature informing this report is listed in Attachment F.

Riding bicycles is a popular activity in Brisbane, including on MTBs. Cycling is considered to be the fourth most common exercise, recreation and sport activity participated in by Queenslanders aged 15 years and over with 10.2% of the population undertaking this activity, based on national data. In the most recent survey of outdoor recreational demand in south east Queensland (2007), 29% of the population had participated in bicycle riding in the last 12 months, with around 610,600 people bicycle riding and around 7,327,000 individual riding events.

The most popular setting were somewhat natural (76% riders), while very and totally natural settings were less popular (18% and 4% respectively). However, if those riding in very and totally natural settings are assumed to all be riding MTBs, then there were around 1,612,000 individual MTB rides in 2007. Increases in the population are likely to result in increased use of these natural settings for MTB riding. Attachment A contains more detail on recreation demand, trends and the implications for MTB (Strategic Leisure report).

The terms used in Council’s publications are not consistent. ‘Track’ is the term used in the Council track map brochures while ‘trail’ is used when referred to the Trail Care groups involved in maintenance work on MTB trails in Mt Coot-tha, and to the Trails Coordinator position. This study has found there is no defined difference between the two terms and in this report they are used interchangeably.

In urban parks including in Brisbane there are likely to be three main types/styles of MTB riders:
1. recreational riders which includes social groups, families and friends,
2. active riders who are more experienced mountain bikers and
3. extreme or free riding or down-hill bikers.

Individuals over time may participate in more than one style of riding.
Recreational riders: These include families, friends and novice MTB riders who desire to experience the pleasure of riding, but are not seeking a technical challenge. They are likely to prefer parks that have flat or gently rolling topography, while sometimes avoiding reserves with steep terrain. They will prefer trails with good outlooks that provide relatively easy riding conditions. This would include wider paths and trails with tar, gravel or concrete surfaces where people can ride side by side, and where children can be seen and supervised while riding. They may also use management trails as long as the slopes are not too steep and the surfaces are well maintained. They often desire rides of around 1-2 hours, either in local parks where everyone can ride to the park, or if the park is further away, it should have good parking facilities close to the start of the trails. Recreational riders can vary in age, though there are similar numbers of men and women riding. They may not identify themselves specifically as mountain bikers, despite the type of bikes they may ride.

Active riding or traditional MTB riders: These more experienced mountain bikers are motivated by the multiple challenges of riding - exercise, exploration and experiencing nature. They can use undulating terrain, but often desire reserves with some steep topography, narrower trails and potentially longer routes (2-3 hours). They will use management trails, but prefer those that are on steeper slopes or with mixed topography. They also desire single width single trails with turns and other challenges.

These types of riders are likely to be willing to travel some distance to access desirable parks either in singles or in groups. They are more likely to be male (up to 90%), around 30-40 years old, university educated with higher incomes than many other user groups such as walkers or recreational riders. They are also likely to self identify as MTB riders, and are often members of MTB groups, advocate for facilities and participated in trail construction and maintenance activities.

Free riding and downhill riders: This is a smaller group of riders with high visibility in the marketing of equipment, games, general merchandise and on social websites. They are generally young males around 13-25 years old whose main motivation is the technical challenge of the ride, rather than a nature experience. They may use specialist bikes adapted for jumps, and seek very steep slopes and other challenges. They may deliberately modify the reserve to enhance the experience by creating informal trails and unauthorised trail technical features such as jumps, bridges, sea-saws, ramps, ditches and built up cambers. They are more likely to access reserves close to where they live and can feel a strong sense of ownership over reserves, trails and features. They are potentially less likely to recognise or be concerned about environmental impacts.

These three groups are distinguishable by their demographics, motivations, riding styles, and preferred settings for their respective MTB riding. This trails planning process works with the MTB classification of three user groups.
3.0 Need for Planned Approach to Mountain Biking

3.1 Provision of MTB Riding Facilities in Brisbane

MTB riding has been a planning issue in Brisbane City for several years, with Council reports investigating complaints, constraints and suitable reserves for more than ten years.

Despite the increasing use of MTBs in Australia, there is very little quantitative assessment of the impacts of MTBs on the environment in either managed or unmanaged settings. A few methodologies exist that primarily look at erosion however a true understanding of the impacts would require a long standing program of investigation into erosion, fauna, native flora and weeds, uses over time, human perceptions and experience and risk management.

The current project does not allow for such a thorough investigation however a trails planning methodology has been devised that is suitable to the BCC area and can be implemented at a number of reserves varying in size and habitat characteristics.

3.2 Social Issues of Mountain Biking

Mountain biking can have a range of positive social benefits such as health, social bonding, experiencing nature and enhancing a sense of belonging. Riding in Queensland is popular as a leisure activity, rather than for competitive or goal focused reasons. The provision of a range of recreational opportunities including for riding of MTBs is generally seen as something that the Council should be promoting. The contention arises as to where riding should occur and on what type of trails. There is considerable public concern regarding the provision of single width MTB trails within Brisbane’s reserves. This is obvious from public discussion, previous work of the BCC and other forums.

A common concern with mountain biking in reserves is conflict with other users. Mountain bikers are often younger than some other user groups such as walkers, they move faster, and may wear different types of clothing. This can result in mountain biking being seen as problematic, different and a less appropriate activity for reserves. Walkers often have more negative views of riders than the reverse, and perceive interactions with them as less than desirable. There is the potential for accidents. The risk of accidents appears to be lower than often perceived, with most accidents involve single mountain bikers where they injure themselves and not others.

The presence of unauthorised trails and trail technical features for riding often reduces the naturalness of reserves, presents safety issues for other riders as well as other users, and can result in displacement where other riders and users become less likely to use a reserve or trail.

There is considerable diversity of views in the community and among different park users as to the environmental impacts of MTB riding.
Based on a range of surveys conducted in Australian and overseas, it seems there are clear differences in perceptions of environmental impacts among park users, with walkers commonly perceiving riders as having greater impacts than riders perceive of themselves. These differences are also seen more generally with MTB riding groups commonly arguing they have similar or even fewer impacts than walkers, while others, including local conservation groups perceive riders as having the greater impacts of the two. Recent reviews of the recreational impacts of MTB riding compared to horse riding and walking indicate that there are impacts arising from MTB usage including trail technical features, but that more experimental research is required to be able to assess its relative impacts.

In this study, based on social issues, MTB riding including on single width trails was not automatically considered an inappropriate activity for reserves in Brisbane. In assessing the provision of MTB riding opportunities, recognition needs to be given to negative social impacts of riding including the potential for conflict amongst users and the risk of accidents. Reduced naturalness of reserves associated with MTB facilities also needs to be taken into account. MTB is likely to remain a relatively contentious issue in the community particularly when mountain biking popularity is increasing and demand is registering as unlawful use of unauthorised trails in Brisbane reserves.

### 3.3 Environmental Issues of Mountain Biking

There are a range of environmental impacts from mountain biking. These include trampling vegetation, exposure of soils, soil erosion and compaction, increased muddiness and run-off from trails, exposure of tree roots, spread of weeds and pathogens and creation of informal trails and other features. In reserves of high conservation value with highly erodible soils, and/or important waterways and wetlands, these types of impacts are inappropriate.

Some environmental impacts from MTB riders are obvious such as tyre marks. What is currently not clear is whether the impacts of MTBs are similar to or greater than those of walkers on and off authorised trails. Currently there are not enough rigorous experimental studies to determine exactly where mountain biking sits on a continuum from lower impact activities such as walking, to higher impact activities such as horse riding. MTB riding does appear to have greater environmental impacts than walking in some situations such as on wet trails, on steep slopes, and where there is braking and skidding. Also, as MTB riders may travel further than walkers, they can have impacts over a greater area than someone walking for the same time.

Mountain biking can occur off trails, on informal trails and on existing authorised trails such as single width partially hardened trails, on wider gravel and tarred paths, management trails and even roads. The construction, maintenance and use of trails, paths and roads all have a range of environmental impacts. Where a trail is built and/or justified for a single purpose, such as single width MTB trails, then the impacts of the trail are in effect impacts of MTB riding. Where the trail is present for a different reasons such a management trail, then the only impacts of mountain biking are any additional impacts it might have on the trail, or any increase in the impact from the trail itself due to riding.
With management trails that can have periodic heavy vehicle use, it appears unlikely that mountain biking will increase the existing environmental impacts associated with such trails. In contrast, where single width trails are specifically built for MTB riding, there will be many impacts including vegetation clearance, opening of the canopy, increased potential for weed establishment, soil compaction, soil erosion and increased turbidity in water ways.

The construction of unauthorised trails and trail technical features such as jumps, bridges, ditches and mounds for MTB riding are of particular concern. Easily accessible reserves in urban areas are likely to contain more features and trails than those in more remote locations. Recent research on the Gold Coast found 116 MTB specific trail technical features in a 29 ha of remnant forest, with impacts on vegetation, soils and hydrology of the reserve. These features are more likely to be associated with free riding as their function is to increase the technical challenge for riders.

The literature on the social and environmental impacts of MTB does indicate that MTB has social and environmental impacts but these are not readily defined or quantified relative to other impacts except where specific features such as trail technical features are in operation.

3.4 Legislative Context

Figure 3-1 summarises key legislation and policies to define the parameters for decisions in relation to Council’s reserves. While there is limited coverage of recreation in most of Queensland’s policy and legal framework, decisions about reserves must meet requirements in terms of:

- Nature conservation, species protection at State and Commonwealth levels
- Vegetation Management
- Cultural Heritage and Native Title
- Coastal management
- Land management including weeds, fires
- Legislation relating to specific tenures for example Mt Coot-tha as part of Brisbane Forest Park
- Material changes of use under the Integrated Planning Act.

This legislative framework plays a key role in all three stages of the trails assessment undertaken for this study. Data obtained about each reserve was often sourced from data bases associated with these legislative requirements (refer Attachment B, Ecological Assessment)
Figure 3-1 Summary of Key Legislation
4.0 Assessing Appropriateness of MTB Trails in Reserves

4.1 Seven Reserves Assessed for MTB Appropriateness

BCC requested that an assessment be conducted for seven Council-controlled bushland reserves to determine the appropriateness of reserves to sustain trail-based outdoor recreation, specifically MTB riding. The seven reserves include:

- Chermside Hills Reserve
- Karawatha Reserve
- Kedron Brook Floodway
- Lake Manchester Reserve
- Leacroft Road Park
- Mount Coot-tha Reserve
- Toohey Forest Park

A number of these Reserves have been expanded as a result of land purchased under the City’s Council’s Bushland Acquisition Levy.

Further descriptions of the above mentioned parks, their locality and reserve size, can be viewed in Table 1 in Desktop Ecological Assessment Report Attachment B.

4.2 First Concept: Assessing Ecological Suitability

The two key concepts which underpin this study’s trails assessment and planning process are Ecological Suitability and Desirability for MTB riding.

Ecological Suitability is an assessment of ecological features, values, and constraints. The result is a rating of the reserves as high, moderate or low suitability in relation to ecological sensitivity.

**High Suitability:** The reserve is likely to contain little to no significant ecological values (Regional Ecosystem vegetation and/or flora and/or fauna and/or wetlands and waterways) that MTB Trails may adversely impact – or the reserve contains significant ecological values that MTB trails design is likely to easily avoid. Contains moderate to gentle slopes and low erosion risk, or the reserve contains a diversity of slopes and erosion risks and appropriate mitigation methods can be instigated. The reserve is then deemed as a suitable candidate for trail design based on the findings from the Desktop Search.

**Moderate Suitability:** The reserve is likely to contain numerous significant ecological values (Regional Ecosystem vegetation and/or flora and/or fauna and/or wetlands and waterways) over the reserve that MTB Trails may negatively impact. The reserve contains a diversity of slopes and erosion risks. Adverse impacts may be able to be mitigated through appropriate trail design and location. The reserve is then considered a potential candidate for trail design based on the findings from the Desktop Search.
**Low Suitability:** The reserve is considered highly likely to contain significant ecological values (Regional Ecosystem vegetation and/or flora and/or fauna and/or wetlands and waterways) over the majority of the reserve that MTB Trails are likely to adversely impact. The reserve contains steep slopes with very unstable soils. The reserve is not considered a good candidate for trail design based on the findings from the Desktop Search. Further information relating to ecological criteria at the landscape scale please refer to the Desktop Ecological Assessment in Attachment B.

### 4.3 Second Concept: MTB Desirability

Defining the Desirability of a reserve for MTB involves examining user groups and their characteristics in combination with their preferences for trails by type, topography, length, facilities and accessibility.

**Table 4.1** below summarises the factors contributing to Desirability of a Reserve and its trails for mountain biking by the three types – recreational, active and free-riding.

<table>
<thead>
<tr>
<th>Table 4-1 MTB user groups, characteristics and trail types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
</tr>
<tr>
<td>Recreational riders, social riders</td>
</tr>
<tr>
<td>Predominantly males aged 25 to 40 years old</td>
</tr>
<tr>
<td>Predominantly male, 13 to 25 years old</td>
</tr>
</tbody>
</table>

The three types of riders will differ in their preferences for reserves and track types. Within the range of tracks, paths and roads available of the seven Brisbane reserves in this study, the general desirability of different tracks are summarised in **Table 4.2** below.
Table 4.2 MTB Rider Preferences

<table>
<thead>
<tr>
<th></th>
<th>Wide hardened track</th>
<th>Management trail</th>
<th>Single width track</th>
<th>Free riding, downhill facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recreational riders</strong></td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>No</td>
</tr>
<tr>
<td><strong>Active riders</strong></td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td><strong>Free riding/downhill riders</strong></td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
</tr>
</tbody>
</table>

4.4 Trail Types and Appropriateness

Some types of mountain biking riding and some types of facilities are likely to result in acceptable environmental impacts in reserves in Brisbane. Therefore, based on ecological criteria, it is assessed here that:

- Management trails infrastructure has high potential for MTB
- Free riding involving construction of trail technical features and steep downhill runs are not environmentally acceptable. These may include construction of jumps and other infrastructure to enhance riding experience. Areas that may be acceptable are where the sites are highly disturbed and adverse environmental effects are not exacerbated.
- Single width MTB trails are not appropriate in sensitive ecosystems
- No wide trails are to be constructed for MTB but where they already exist, they are to be assessed for their suitability particularly for recreational riders.

These ecological criteria provide strong boundaries for the MTB trails assessment. The focus can be placed on the potential for MTB on management trails and single width trails not located in sensitive environments. The following figures (Photos 1 to 4 display the different types of tracks currently available to riders.)

Photo 1 Free Riding Indoor Track
Photo 2 Management Trail

Photo 3 Wide Hardened Track

Photo 4 Single Width Track
4.5 **Suitability, Desirability and Appropriateness**

Suitability refers to the use of the concept of Ecological Suitability in the study’s Ecological Assessments. Suitability incorporates the concept of the manageability of any adverse environmental impacts.

Desirability is used to refer to recreational / MTB desirability in terms of the features that the different user groups want. Desirability incorporates the concept of manageability of any adverse social impacts.

Appropriateness is a rating resulting from the combination of ecological suitability and MTB desirability.

4.6 **Three Scales of Assessment for Trails Planning**

The overall approach to Brisbane City Council’s trails planning comprises an assessment at three scales - from the landscape scale to reserve scale and then to the individual trail scale. Assessment at each scale will identify reserves that meet suitability and desirability. Those that do not will be eliminated from the next scale of assessment.

1. **Landscape Scale assessment** of suitability and desirability uses a desk-top analysis of ecological significance, topography and other features to identify which of the proposed reserves have the potential for MTB riding.

   The result of the Landscape Scale Assessment is a rating of the reserves for their overall appropriateness for MTB riding.

2. For those reserves ranked as appropriate in the Landscape Scale Assessment, a **Reserve trails assessment** will identify appropriate areas within selected reserves with ecological suitability and desirability for biking. This assessment is a desk-top analysis of location and type of trails in the reserve and their appropriateness (ecological suitability/sensitivity, MTB desirability) for MTB riding.

   The result of the reserve scale assessment will be the classification of trails and trail areas within each reserve for their overall appropriateness for MTB riding.

3. For those trails within reserves deemed appropriate, an **on-ground Trails assessment** involving comprehensive ground-truthing of individual trails will be conducted. Trail condition is to be assessed for ecological capability (e.g. fauna, flora, slope, soils, waterways and wetlands) as well as desirability (different user groups and trail conditions) as well as management options where any adverse impacts are not considered significant and are deemed manageable through trail design and maintenance.

   The result of these three assessments is a Trails’ Plan for those reserves where trails are consistently deemed appropriate, ecologically and recreationally, for MTB riding.

This report documents the first, Landscape-scale, assessment. The second report will document the Reserve-scale assessment, and subject to Council’s consideration of the recommendations in both reports, work will proceed to the trail-scale assessment of the appropriate reserves.
Figure 4-1 presents the trail assessment process described above.

**Figure 4-1 Trail Assessment Methodology**
5.0 Current Uses and Management of Reserves

5.1 Authorisation of MTB Riding

Many reserves in Brisbane already allow bicycle riding on designated trails, but only Mt Coot- ha has MTB-specific single width trails suitable for active/traditional mountain biking. However, as indicated in the consultation results below, MTB riding does occur on formal and unauthorised single width trails in many of the reserves, indicating an unmet need for access and a willingness to ride in reserves even when the activity is not permitted.

5.2 Consultation about Current Uses and Management Needs of Reserves

This section has been derived from targeted consultation with key BCC technical, policy and field-based personnel for each relevant reserve. Community consultation for this study was designed as targeted interviews, not as a representative sampling of broad community views. The study interviewed eleven community members who have a working knowledge of specific reserves. Attachment C contains the interview questions. The discussion points raised have been used to compliment the literature review on individual reserve attributes, to fill information gaps regarding key reserve-based considerations and management implications.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Community Stakeholder Comments</th>
<th>BCC Issues</th>
</tr>
</thead>
</table>
| Tracks | ▪ Cycling & off-track usage causes significant erosion.  
▪ Very steep hillsides - erosion prone.  
▪ Tracks not suitable for bicycle use, cycling opportunities available is nearby areas. | ▪ Cycling – on and off track MTB and BMX bike riding  
▪ Construction of unapproved tracks  
▪ Trail bike use  
▪ Horse riding |
| Soils | ▪ Cyclists appear to wear a groove in the middle of tracks – subsequently channels water and erodes significantly. | ▪ Off track orienteering & geo-caching |
| Ecological | ▪ Dogs on and off leash may impact on fauna.  
▪ Reduction of the reserve due to new infrastructure such as roads.  
▪ Significant edge effect & weed infestation in disturbed areas.  
▪ Poor opportunities for fauna movement – noticeable deaths of wallabies on Becketts Road. | |
| Conflicts | ▪ Bicycles and walkers  
▪ Dogs off leash  
▪ Motorbikes | |

Chermside Hills Reserve
### Karawatha Forest Park

<table>
<thead>
<tr>
<th>Issue</th>
<th>Community Stakeholder Comments</th>
<th>BCC Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tracks</strong></td>
<td>• If site is open for MTB use on management trails – concern that the message is the whole site is open for MTB use</td>
<td>• Trail bike use</td>
</tr>
<tr>
<td><strong>Off Track Use</strong></td>
<td>• Off management trail MTB users (downhill and single track), carving through sensitive areas.</td>
<td>• MTBs off track</td>
</tr>
<tr>
<td></td>
<td>• Jump construction – track runs down from the centre to the known frog habitat areas.</td>
<td></td>
</tr>
<tr>
<td><strong>Ecological</strong></td>
<td>• Areas that have been retained appear to not meet the standards of maintenance of ecological values within reserves.</td>
<td>• Dogs off leash</td>
</tr>
<tr>
<td><strong>Land Management</strong></td>
<td>• There are concerns over the policing of the use of the tracks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• There is some concern over the lack of public consultation in the decision making process for the park’s future uses.</td>
<td></td>
</tr>
<tr>
<td><strong>Conflicts</strong></td>
<td>• People taking dogs in reserve (on and off leash).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hunting - wallabies &amp; 3 koalas shot.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Objectionable behaviour.</td>
<td></td>
</tr>
</tbody>
</table>

### Kedron Brook Floodway

<table>
<thead>
<tr>
<th>Issue</th>
<th>Community Stakeholder Comments</th>
<th>BCC Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Off Track Usage</strong></td>
<td>• Horses ridden within the reserve including off track</td>
<td>• Horses ridden within the reserve including off track</td>
</tr>
<tr>
<td></td>
<td>• Off track mountain cycling (limited)</td>
<td>• Off track mountain cycling (limited)</td>
</tr>
<tr>
<td></td>
<td>• Off leash dog walking</td>
<td>• Off leash dog walking</td>
</tr>
<tr>
<td></td>
<td>• Trail bike use (limited)</td>
<td>• Trail bike use (limited)</td>
</tr>
<tr>
<td><strong>Ecological</strong></td>
<td>• Reduced grass owl sightings/occurrence since bikeway/walkway installed.</td>
<td>• Fires</td>
</tr>
<tr>
<td></td>
<td>• Fires</td>
<td>• Camping</td>
</tr>
<tr>
<td></td>
<td>• Slashing reduces habitat values.</td>
<td></td>
</tr>
<tr>
<td><strong>Conflicts</strong></td>
<td>• No major conflict between MTB riders and walkers identified.</td>
<td></td>
</tr>
</tbody>
</table>
### Leacroft Road Park

<table>
<thead>
<tr>
<th>Issue</th>
<th>Community Stakeholder Comments</th>
<th>BCC Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tracks</strong></td>
<td>• Some single track use.</td>
<td>• Horse Riding</td>
</tr>
<tr>
<td></td>
<td>• MTBs from Daisy Hill link - concern reserve will become significantly degraded like Daisy Hill if open use allowed.</td>
<td>• Trail bike use</td>
</tr>
<tr>
<td></td>
<td>• Accepted use signage is largely ignored.</td>
<td>• Cyclists doing cross country style on management trails and some single tracks</td>
</tr>
<tr>
<td><strong>Off Track Use</strong></td>
<td>• MTBs don’t stay on tracks, and also ride at night impacting nocturnal fauna.</td>
<td>• Dogs off leash</td>
</tr>
<tr>
<td></td>
<td>• Trail bikes are regularly seen in reserves.</td>
<td>• Orienteering and Geocaching</td>
</tr>
<tr>
<td><strong>Ecological</strong></td>
<td>• Water crossings by horses on Buhot Creek – gouged riparian zone and appear to be in very poor condition.</td>
<td>• Foxes in the reserve.</td>
</tr>
<tr>
<td></td>
<td>• There are concerns with the decline in Platypus numbers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Huge seasonal stream flows.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Weed spread from Orienteering running through weeds (whisky grass, mother of millions etc).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Weeds spread from Orienteering running through weeds.</td>
<td></td>
</tr>
<tr>
<td><strong>Land Management</strong></td>
<td>• Active recreation was never to be allowed as the Council resumed the property under the auspice of environmental protection.</td>
<td>• Fire management – there is concern that the current regime is too regular</td>
</tr>
<tr>
<td></td>
<td>• Bushcare groups are doing all of the conservation work;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Bushcare groups are finding it too difficult to manage broad acre sites.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Fire management – there is concern that the current regime is too regular.</td>
<td></td>
</tr>
<tr>
<td><strong>Conflicts</strong></td>
<td>• Horses cantering uphill and cyclists coming down the hill (some conflict - more potential conflict that actual at this stage).</td>
<td>• Not being able to hear approaching MTB’s on tracks.</td>
</tr>
<tr>
<td></td>
<td>• Significant conflict between cyclists and walkers in Daisy Hill – concern over the same in this park.</td>
<td>• Continuity of management (QPWS, BCC, SEQWater)</td>
</tr>
<tr>
<td></td>
<td>• Creation of new tracks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Dogs off leash.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Potential conflict if the use of the park is taken away from users.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New ‘no bicycle’ signage recently installed.</td>
<td></td>
</tr>
</tbody>
</table>

### Lake Manchester Road Park

<table>
<thead>
<tr>
<th>Issue</th>
<th>Community Stakeholder Comments</th>
<th>BCC Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tracks</strong></td>
<td>• No trail bike facilities and the general consensus that they are quite destructive.</td>
<td>• Trail bike riding</td>
</tr>
<tr>
<td></td>
<td>• Some concern for horse access since fence on western boundary installed.</td>
<td>• Cross country MTBs on management trails.</td>
</tr>
<tr>
<td></td>
<td>• Not being able to hear approaching MTB’s on tracks.</td>
<td></td>
</tr>
<tr>
<td><strong>Land Management</strong></td>
<td>• Little water available on site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Continuity of management.</td>
<td></td>
</tr>
<tr>
<td><strong>Conflicts</strong></td>
<td>• Not being able to hear approaching MTBs on tracks – potential conflict.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Continuity of management (QPWS, BCC, SEQWater)</td>
<td></td>
</tr>
<tr>
<td>Issue</td>
<td>Community Stakeholder Comments</td>
<td>BCC Issues</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
</tbody>
</table>
| **Tracks**         | • Historically used for walking tracks.  
                     • Illegal tracks constructed.  
                     • Motorbike use now regular.  
                     • No designated walking only tracks.  
                     • Very steep bike tracks  
                     • High volumes of cyclists overusing tracks. | • Unauthorised use of tracks |
| **Soils**          | • Erosion prone soils and high impact use from bikes.                                         | • Motor bike use                          |
| **Ecological**     | • Introduction of foreign materials, soils, rocks, timber etc.  
                     • Over use of tracks  
                     • MTB tracks often cross riparian zones due to pre-existing track network designed for walkers.  
                     • There are concerns that the trail care group is focused on building and maintaining tracks not ecology of the area, or restoring impacts of use. | • Orienteering & Geocaching |
| **Land Management**| • There are concerns that there may be a lack of funding for council to support track design and management. |                                           |
| **Conflicts**      | • Substantial conflict between bikes and walkers.  
                     • People ignoring signage and general courtesy to other users due to high numbers.  
                     • Safety issue with multi-use tracks where speed is involved with bikes including the potential for horses to be spooked. |                                           |

**Mt-Coot-tha Reserve**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Community Stakeholder Comments</th>
<th>BCC Issues</th>
</tr>
</thead>
</table>
| **Tracks**         | • Orienteering does not keep to formed tracks – must go off track.  
                     • Informal track use by bikes are thought to be very damaging with many informal tracks.  
                     • Site is very vulnerable to impact and track closures are not abided by. | • High MTB usage (off designated tracks) |
| **Soils**          | • Type of soil and terrain – incredibly susceptible to erosion and disturbance.  
                     • MTB increase the impacts on erodible soils.  | • High usage of informal tracks leading to degradation, fragmentation and erosion (highly erodible soils) |
| **Ecological**     | • Visible damage to ecology that appears to be caused by jumps, engineered construction etc.  
                     • A consensus that the university is impacting core values through encroachment, landscape plant selection of non-endemic species | • Weed spread into sensitive areas of the reserve from informal tracks, and degradation |
| **Land Management**| • Concerns that land managers don’t have the available resources to coordinate management |                                           |
| **Conflicts**      | • Conflict with the values of the environment and MTB activities.  
                     • Bikes need to give notice (bells) and give way to walkers.  
                     • Large group activities (eg fun runs) can conflict with natural values.  
                     • Off-track activities – causes trampling and habitat loss. | • High potential for conflict especially in single use tracks |

**Toohey Forest Park**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Community Stakeholder Comments</th>
<th>BCC Issues</th>
</tr>
</thead>
</table>
| **Tracks**         | • Orienteering does not keep to formed tracks – must go off track.  
                     • Informal track use by bikes are thought to be very damaging with many informal tracks.  
                     • Site is very vulnerable to impact and track closures are not abided by. | • High MTB usage (off designated tracks) |
| **Soils**          | • Type of soil and terrain – incredibly susceptible to erosion and disturbance.  
                     • MTB increase the impacts on erodible soils.  | • High usage of informal tracks leading to degradation, fragmentation and erosion (highly erodible soils) |
| **Ecological**     | • Visible damage to ecology that appears to be caused by jumps, engineered construction etc.  
                     • A consensus that the university is impacting core values through encroachment, landscape plant selection of non-endemic species | • Weed spread into sensitive areas of the reserve from informal tracks, and degradation |
| **Land Management**| • Concerns that land managers don’t have the available resources to coordinate management |                                           |
| **Conflicts**      | • Conflict with the values of the environment and MTB activities.  
                     • Bikes need to give notice (bells) and give way to walkers.  
                     • Large group activities (eg fun runs) can conflict with natural values.  
                     • Off-track activities – causes trampling and habitat loss. | • High potential for conflict especially in single use tracks |
A key issue emerging from these comments is the level of unauthorised use across most of the reserves by various groups including, but not limited to, MTBs. This is a clear indication of an unsustainable situation, where planning and management actions need to be targeted at specific objectives.

The comments highlight a level of conflict between users on different trail types at various times of the day and week, with particular concern expressed in relation to single width trails.

Several comments highlight that existing management measures are not adequate either for conservation measures, or for dealing with the conflicts. Signage is not seen to work effectively and enforcement is not impacting on unauthorised uses. Some Bushcare groups are finding their reserves are too large for their capabilities. Trail care programs on Mt Coot-tha are acknowledged though reservation is expressed about their focus and maintenance practices.

The planned approach to MTB proposed here is an important contribution towards managing these highly valued yet contested spaces. Formal introduction of MTB to reserves in addition to Mt Coot-tha however will require strong commitment and material investment from Council and the community of stakeholders to address issues raised in the consultation. As well, a comprehensive management process based on a working dialogue between stakeholder groups is the most effective way to build good relations between user groups to support multi-use of the reserves.
6.0 Landscape Scale Assessment of Seven Reserves

6.1 Landscape Scale Assessment

As the first step in the trails assessment and planning process, each reserve was assessed at a high-level based on the following:

- existing suitable facilities;
- ecological sensitivity to ascertain suitability of the reserve for different riding styles and facilities; and
- the likely desirability of the reserve for MTB riders, including existing unmet demand for reserve, topography, location and access issues.

Existing suitable features include the presence of wide hardened trails suitable for recreational riders, management trails that would be suitable for any of the three types of riders, existing single width trails that would be attractive for active riders, and existing highly disturbed reserves which could be used for free riding.

Ecological suitability was assessed based on a desktop environmental impact assessment. The seven reserves were evaluated for ecosystems sensitivity based on whether they contained:

- Endangered or of concern regional ecosystems;
- High value regrowth vegetation
- provide habitat for endangered, vulnerable, rare, critically endangered or otherwise significant species,
- Riparian and wetland vegetation,
- Critical vegetation for endangered, vulnerable or rare fauna species, or significant /note worthy fauna species
- Steep erosion prone soils, where erosion is likely to impact on sensitive ecosystems.

Each reserve was then given a ranking based on its suitability for different MTB trails as highly suitable, moderate or low.

The desirability of the reserve for different uses was assessed from surveys of rangers and community members, from the topography of the reserve, from evidence of unmet demand for use, and the location of the reserve and access points (see Section 5.0).

Each reserve was then assigned to one of four ratings of Appropriateness:

1. **Use Approved**
   Only likely to be given where the bicycle riding is already permitted on the given type of facility, or where it is occurring on existing facilities and is automatically considered appropriate.
2. **Conditional Access**
   Where use of the facility for riding was not approved in the past, but its use for MTBs is now conditionally approved. Conditional approval can be altered by BCC under certain circumstances e.g. bushfires, pesticide spraying etc.

3. **Requires Detailed Trail Level Assessment**
   This was only given were the facility already exists, use or further development of the facility is not automatically rejected based on the landscape level ecological assessment, and it is likely to be desirable for a particularly style of riding. Where this category has been assigned, further desktop and field evaluation of the individual facilities within the reserve is required before conditional approval can be given to a facility to be used for MTB riding.

4. **Deemed Inappropriate**
   The provision or use of a facility for the style of riding is not appropriate based ecological and/or desirability criteria.

The following sections outline the Landscape Scale Assessment of the seven reserves to determine the appropriateness (Ecological Suitability and MTB Desirability) of MTB in each Reserve.
7.0 Results of Landscape Scale Assessment

7.1 Ecological Suitability

The purpose of this high-level desktop study and the targeted consultation was to document the environmental values of the designated reserves and produce a rating of each reserve’s Ecological Suitability for any formal establishment of MTB trails. The desktop report takes into consideration the possible negative effects of MTB Trail establishment and use and the manageability of these effects.

The following is a summary of the findings from the desktop study. The comprehensive desktop study can be viewed in Attachment B.

7.1.1 The Ecological Suitability Rating Criteria

Significant environmental values are regarded for the purposes of this Report as those communities that:

- contain Endangered or Of Concern Regional Ecosystems (RE) or High Regrowth Vegetation;
- provide Endangered, Vulnerable, Rare, (EVR), Critically Endangered or Otherwise Significant (OS) plant habitat;
- contain riparian and wetland vegetation;
- provide critical vegetation and habitat value for EVR fauna species or significant/noteworthy fauna species; and
- contain steep erosion prone trails where erosion is likely to impact sensitive ecosystems.

Please note that the suitability rating of each reserve is dependant on the locality and quantity of the above criteria e.g. if a park contains a small amount of essential habitat that is in an area that is not in the vicinity of the current trails the park’s suitability rating may be still be rated as high, whereas a park with the same essential habitat may have a significant quantity of that habitat and be situated in a corridor adjacent to the trails will therefore be given a low suitability rating.

Attachment E contains a list of key ecological assessment-related terms and their definitions.

The significant environmental values were used to provide a ranking of each Reserve’s suitability for the establishment of MTB Trails (High Suitability, Moderate Suitability, and Low Suitability).
The Suitability Classifications are based on Desktop studies of ecological values only. It is re-
commended that field investigations be conducted to determine the presence of any 
significant or sensitive habitat that the desktop searches may not have identified/returned in 
the Desktop search or no longer applicable to the reserve (stages 2 and 3 outlined in Section 8 
below).

7.1.2 Ecological Values Summary for Each Reserve

The following tables provide a summary for each BCC bushland reserve. The tables provide a 
summary of the key findings for each of the parks and consider:

- Location
- Historical and Current Land Use
- Topography, Hydrology and Soils
- Vegetation Communities, Flora and Regional Ecosystems
- Fauna and Essential Habitat
- Wetlands and Waterways

**Table 7-1 Chermside Hills Reserve Ecological Values**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>Chermside Hills Reserve is approximately 12km north of Brisbane’s CBD and are located in the suburbs of Aspley, Bridgeman Downs and McDowall</td>
</tr>
<tr>
<td><strong>Historical and Current Land Use</strong></td>
<td>Historical land uses of the Chermside area were predominately for agricultural purposes. The Reserves provides for a range of active activities including walking and cycling trails as well as nature appreciation, bird watching and environmental education.</td>
</tr>
<tr>
<td><strong>Topography, Hydrology and Soils</strong></td>
<td>Chermside Hills Reserve is characterised by moderate to steep slopes, with two ridges located in the southern section of the reserve. Abundant drainage features are located within the reserve, particularly in the south. Stable to unstable clay loam topsoils; on reserve analysis of soils is required to determine the potential for soil erosion on the trails.</td>
</tr>
<tr>
<td><strong>Vegetation Communities, Flora and Regional Ecosystems</strong></td>
<td>The predominant vegetation community is classified as Open Eucalypt Forest. A regionally rare species, Velvet Flower (<em>Keraudrenia sp.</em>), is also found within the Reserve. The majority of vegetation within Chermside Hills Reserve is classified as Not of Concern Remnant Vegetation.</td>
</tr>
<tr>
<td><strong>Fauna and Essential Habitat</strong></td>
<td>The Reserve supports a large diversity of birds, with over 115 species recorded at the reserve. Reptiles observed at the reserve include Blue-tongued Lizards, Goannas, Water Dragons, Skinks and Geckoes. Mammals observed include Swamp Wallabies, Gliders, Possums, Bats and Flying-foxes. The reserve contains 11 mammal species, four of which are introduced species and two which are listed as vulnerable. 19 bird species are listed in the EPBC Protected Matters as either Endangered, Vulnerable or Migratory. One frog species, six mammal species and one reptile species were also identified as either Endangered or Vulnerable. The remnant vegetation at the reserve is mapped as Essential Habitat for the Koala.</td>
</tr>
<tr>
<td><strong>Wetlands and Waterways</strong></td>
<td>The majority of the Reserve is mapped as containing CP-WAT Waterway Corridor. No wetlands occur on the reserve.</td>
</tr>
</tbody>
</table>

Chermside Hills Reserve
### Table 7-2 Karawatha Forest Park Ecological Values

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Location**                               | • Karawatha Forest Park is located in the suburbs of Berrinba, Calamvale, Drewvale, Karawatha and Stretton.  
• The Forest is situated immediately north of the Logan Motorway, with the Gateway Motorway bisecting the north-western section of the Reserve. |
| **Historical and Current Land Use**         | • Historically the reserve was used for rural purposes, with some clearing for pasture areas.  
• There is an abandoned quarry in the northwest of the Park which is now filled with water.  
• The Park including picnic areas, bushwalking trails and a scenic lookout. |
| **Topography, Hydrology and Soils**        | • The forest is characterised by moderate and gentle slopes.  
• The northern sections of the Forest contain the highest elevations at 100m AHD.  
• Number of drainage line traverse the reserve  
• Soils range across the reserve from unstable to stable; on reserve analysis of soils is required to determine the potential for soil erosion on the trails. |
| **Vegetation Communities, Flora and Regional Ecosystems** | • The predominant vegetation community is classified as Open Eucalypt Forest with areas of Heath, Wetland systems and Woodlands  
• The Reserves contain over 320 native plant species.  
• Some of the last remaining wet Heathlands and Melaleuca Wetlands in Brisbane are protected within the Forest.  
• A number of locally significant trees are also protected within the Park such as Bailey’s Stringybark, Planchar’s Stringybark and Giant Water Lily. |
| **Fauna and Essential Habitat**            | • Forest contains a variety of habitats providing an important refuge for a diversity of wildlife, including the Greater Glider, Squirrel Glider and rare frogs.  
• Other significant and or noteworthy species present at the reserve include Rednecked Wallabies, Swamp Wallabies and Eastern Grey Kangaroos.  
• The forest contains a large diversity of bird species, with over 100 bird species observed.  
• 21 bird species are listed in the EPBC Protected Matters as either Endangered, Vulnerable or Migratory.  
• One frog species, four mammal species and one reptile species were also identified as either Endangered or Vulnerable.  
• The remnant vegetation at the reserve is mapped as Essential Habitat for four listed species, the Green-thighed Frog, Tusked Frog, Wallum Froglet and the Koala. |
| **Wetlands and Waterways**                 | • Karawatha Forest is mapped by the BCC as containing both CP-WAT Waterway Corridors and Wetlands. |
### Kedron Brook Floodway

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Location** | - Kedron Brook Floodway is located in the suburb of Eagle Farm.  
- The Floodway is situated immediately east of the Gateway Motorway and is approximately 15km north of Brisbane’s CBD.  
- Schulz Canal is located along the reserves eastern boundary and the reserve forms a part of the Boondall Wetlands. |
| **Historical and Current Land Use** | - Indigenous Australians historically utilised Boondall Wetlands and continue to have links with this land.  
- In 1863, 3000 acres of ‘Nudgee lands’ was acquired for settlement and utilised for agricultural purposes.  
- Boondall Wetlands provide a range of recreational activities including boar ramps, lookouts, bikeways, bird watching, boardwalks and walking trails. |
| **Topography, Hydrology and Soils** | - The area is characterised by gentle to flat slopes  
- Soils are predominantly saline muds, clays and sands or beach sand with the sandy top layer providing stability  
- On reserve analysis of soils is required to determine the potential for soil erosion on the trails. |
| **Vegetation Communities, Flora and Regional Ecosystems** | - Boondall Wetlands supports various vegetation communities including Eucalyptus and Melaleuca Woodlands, Remnant Rainforests, Ironbark Forests, Casuarina forests, Grasslands, Tidal Mudflats, Mangroves, Swamplands, Hypersaline Flats and Salt Marshes.  
- The area may contain the Mt Berryman Phebalium (*Phebalium distans*), which is listed as Critically Endangered under the EPBC 1999.  
- Portions of vegetation are mapped as Remnant Vegetation. |
| **Fauna and Essential Habitat** | - Flying-foxes, Possums, Squirrel Gliders, Frogs, Reptiles and Butterflies can be found within the Reserve.  
- A diversity of wildlife has been observed at the reserve including Black-shouldered Kites, Brahminy Kites, Australian Kestrels, Ospreys, Whimbrels, Godwits, Plovers, Tattlers, Sandpipers, Curlews, Ducks, Egrets, Herons, Cormorants, Kingfishers and Rainbow Bee-eaters.  
- 37 bird species, one frog species, five mammal species and one reptile species are listed in the EPBC Protected Matters as either Endangered, Vulnerable or Migratory.  
- The remnant vegetation at the reserve is mapped as Essential Habitat for the Koala. |
<p>| <strong>Wetlands and Waterways</strong> | - The majority of the reserve is mapped as containing wetlands, with a limited number of streams mapped traversing the reserve. |</p>
<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Location** | ▪ Lake Manchester Road Park is spans over a number of suburbs including Kholo, Mt Crosby and Lake Manchester.  
▪ The is park is located approximately 30km southwest of Brisbane CBD and 15km east of the Brisbane Valley Highway |
| **Historical and Current Land Use** | ▪ The area of Kholo supported either Jagera or Turrbal indigenous groups.  
▪ It is likely that the reserve was used for timber harvesting and cattle grazing by European settlers.  
▪ It is likely that the Park would provide informal recreational activities (such as bushwalking). |
| **Topography, Hydrology and Soils** | ▪ Topography within Lake Manchester Road Park moderate to steep.  
▪ A number of ridges are located within the Parks bounds with the highest section in the northern area at a height of 228mAH.  
▪ A number of drainage paths traverse throughout the reserve.  
▪ On reserve analysis of soils is required to determine the potential for soil erosion on the trails. |
| **Vegetation Communities, Flora and Regional Ecosystems** | ▪ The reserve is dominated by Eucalypt Open Woodlands.  
▪ The reserve contains localised occurrences of Gum-topped Box, Silver-leaf Ironbark, Moreton bay Ash and a number of other canopy species.  
▪ The area may contain the Mt Berryman Phebalium (*Phebalium distans*), which is listed as Critically Endangered under the EPBC 1999.  
▪ The majority of vegetation is mapped as Remnant Vegetation. |
| **Fauna and Essential Habitat** | ▪ The Koala and the Tusked Frog were recorded at the reserve and are listed as vulnerable under the NCA 1992.  
▪ A number of species were also observed at the reserve that are considered by BCC’s *Natural Assets Planning Scheme Policy* as Significant or Noteworthy, including the Long-nosed Bandicoot, Red-necked Wallaby, Grey Kangaroo, Swamp Wallaby, Lace Monitor, White-throated Nightjar, and the Wedge-tailed Eagle  
▪ Numerous unvetted sightings of the Spotted Tail Quoll have been made within the area.  
▪ 19 bird species, one frog species, five mammal species and one reptile species are listed in the EPBC Protected Matters as either Endangered, Vulnerable or Migratory.  
▪ The majority of the reserve is mapped as containing Protected Koala Bushland Habitat Area. |
| **Wetlands and Waterways** | ▪ The majority of the Reserve is mapped as containing CP-WAT Waterway Corridor.  
▪ No wetlands occur on the reserve. |
### Table 7-5 Leacroft Road Park Ecological Values

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Location**                               | ▪ Leacroft Park spans over a number of suburbs with the majority being in Burbank.  
▪ The park is located approximately 18km southeast of Brisbane CBD and 3.5km east of the Pacific Motorway.                                        |
| **Historical and Current Land Use**        | ▪ Leacroft Road Park forms part of the Brisbane Koala Bushlands.  
▪ Leacroft Road Park provides a visitor node with information displays on koala conservation and Picnic facilities, bushwalking trails, boardwalks and horse riding trails |
| **Topography, Hydrology and Soils**        | ▪ Topography of Leacroft Road Park is best described as gently undulating  
▪ There are several drainage lines throughout the Park.  
▪ Clay loams and light clays for topsoil; on reserve analysis of soils is required to determine the potential for soil erosion on the trails. |
| **Vegetation Communities, Flora and Regional Ecosystems** | ▪ The vegetation communities within the Park have considerable regional significance as it contains remnants of the original lowland vegetation.  
▪ Communities include Open forest, Woodland, Riparian Forest, and Heathland area. Flora within the Park includes native Grasses, Herbs, Wildflowers, Melaleucas, Brush Box, Wattles and Scribbly Gums.  
▪ The area may contain the Mt Berryman Phebalium (*Phebalium distans*), which is listed as Critically Endangered under the EPBC 1999.  
▪ The majority of vegetation is mapped as Remnant Vegetation. |
| **Fauna and Essential Habitat**            | ▪ Mammals present in the Park include Koalas, Red-necked Wallabies, Swamp Wallabies, Bandicoots, Greater Gliders and Squirrel Gliders.  
▪ A number of species were also observed at the reserve that are considered by BCC’s Natural Assets Planning Scheme Policy as Significant or Noteworthy, including the Long Necked Turtle, Greater Glider, Red-necked Wallaby and Swamp Wallaby.  
▪ 15 bird species, two frog species, four mammal species and one reptile species are listed in the EPBC Protected Matters as either Endangered, Vulnerable or Migratory.  
▪ The remnant vegetation at the reserve is mapped as Essential Habitat for three listed species, the Tusked Frog, Wallum Froglet and the Koala. |
### Mt Coot-tha Reserve

#### Table 7-6 Mt Coot-tha Reserve Ecological Values

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Location**                               | ▪ Mt Coot-tha spans over a number of suburbs with the majority being in Mt Coot-tha.  
▪ The is park is located approximately 5km west of Brisbane CBD and the Western Freeway traverses through the south-eastern section of the reserve. |
| **Historical and Current Land Use**         | ▪ In the late 1800’s the reserve was used as a timber reserve, with a large proportion of the Forest declared a Reserve, the Reserve was then transferred to BCC in 1919, and expanded in 1920.  
▪ The Park includes picnic areas, bushwalking trails, horse riding and cycling trails, scenic lookouts and dining facilities. There is 31km of multi-use trails, 18.5km of walking trails and 12.1km of MTB trails. |
| **Topography, Hydrology and Soils**         | ▪ The landform of Mt Coot-tha Reserve comprises steep slopes.  
▪ Elevation ranging from 40 to 250m AHD  
▪ There are several ephemeral drainage lines throughout the Park. A steep ridgeline bisects the park and runs south-east to northwest.  
▪ On reserve analysis of soils is required to determine the potential for soil erosion on the trails. |
| **Vegetation Communities, Flora and Regional Ecosystems** | ▪ The predominant vegetation community is described as Open Eucalypt Woodland.  
▪ Numerous waterfalls and creeks containing riparian vegetation are dispersed throughout the Reserve  
▪ The area may contain the Mt Berryman Phebalium (*Phebalium distans*), which is listed as Critically Endangered under the EPBC 1999.  
▪ The reserve is also mapped as *Essential Habitat* for a significant flora species, Hairy Hazelwood.  
▪ The majority of vegetation is mapped as Remnant Vegetation. |
| **Fauna and Essential Habitat**             | ▪ Mammals present in the Park include Gliders, Possums and Micro-bats.  
▪ Mt Coot-tha Forest supports a variety of wildlife including birds such as Goshawks, Kites and Eagles, Wrens, Robins and other small forest birds, Parrots and Cockatoos, Tawny Frogmouths and Owls (including the Powerful Owl).  
▪ 18 bird species, one frog species, five mammal species, one fish species and one reptile species are listed in the EPBC Protected Matters as potentially occurring.  
▪ The remnant vegetation at the reserve is mapped as *Essential Habitat* for three listed species, Black-breasted Button quail, Powerful Owl and the Koala. |
Table 7-7 Toohey Forest Park Ecological Values

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>▪ Toohey Forest Park spans over a number of suburbs with the majority being in Nathan. The is park is located approximately 10km south of Brisbane CBD and a number of formed named roads traverse the Park including the South East Freeway and Toohey Road.</td>
</tr>
<tr>
<td><strong>Historical and Current Land Use</strong></td>
<td>▪ The Park has historically, and is currently being, used for conservation purposes. ▪ The Park includes a variety of trails and facilities including picnic areas, scenic lookouts and cycling and walking trails.</td>
</tr>
<tr>
<td><strong>Topography, Hydrology and Soils</strong></td>
<td>▪ The landform of Toohey Forest Park is gentle to steep slopes. ▪ Elevation ranges from 35 to 194 mAHD ▪ The sandy and skeletal soils are prone to erosion, as observed along trails, trails and steep slopes throughout the park.</td>
</tr>
<tr>
<td><strong>Vegetation Communities, Flora and Regional Ecosystems</strong></td>
<td>▪ The vegetation type is predominantly comprised of forest with an understorey of Acacias, Casuarinas, Heath species, creepers and grasses ▪ Vine Forest and Closed Scrub forms the dominant vegetation community along creeks and gullies. ▪ The area may contain the Mt Berryman Phebalium (<em>Phebalium distans</em>), which is listed as Critically Endangered under the EPBC 1999. ▪ There are several sections of mapped <em>High Value Regrowth Vegetation</em> containing Endangered and Not of Concern Regional Ecosystems.</td>
</tr>
<tr>
<td><strong>Fauna and Essential Habitat</strong></td>
<td>▪ There is almost a complete absence of native ground dwelling mammals, however contains five tree-dwelling mammals including Gliders and Possums. ▪ Toohey Forest Park supports a variety of birds such as Tawny Frog-mouths, Kookaburras, Grey Shrike-thrushes, White-throated Treecreepers, Rainbow Lorikeets, Eastern Spinebills and Yellow-faced Honeyeaters ▪ 19 bird species, one frog species, four mammal species, and one reptile species are listed in the EPBC Protected Matters as potentially occurring. ▪ The remnant vegetation at the reserve is mapped as <em>Essential Habitat</em> for two listed species, the Koala and the Tusked Frog.</td>
</tr>
</tbody>
</table>
### 7.2 Rating Ecological Suitability of Seven Reserves

<table>
<thead>
<tr>
<th>Property</th>
<th>Critical Factors for Determining Suitability</th>
<th>Ecological Suitability Rating</th>
</tr>
</thead>
</table>
| **Chermside Hills Reserve**  | - Records of EVR flora species in the area;  
- Records of potential significant fauna species;  
- High presence of mapped waterways and buffers where trails may impact the waterway values;  
- Unstable to stable soils and moderate slopes                                                                                                                                       | Moderate                     |
| **Karawatha Forest Park**    | - Records of EVR flora species in the area;  
- Endangered Sub-dominant Regional Ecosystems (less than 10% of park);  
- Records of listed fauna species;  
- Mapped wetlands and waterways (and associated buffers) where trails may impact the waterway values; and  
- Stable to stable soils and moderate to gentle slopes                                                                                                                               | Moderate                     |
| **Kedron Brook Floodway**    | - High presence of mapped wetlands where trails may impact the waterway values;  
- A number of records for significant flora species and birds and a listed frog species; and  
- High number of records of significant wetland and water birds.                                                                                                                                                                      | Low                          |
| **Lake Manchester Road Park**| - Known records of significant fauna species;  
- A number of known records for significant flora species;  
- a relatively small proportion of mapped waterways;  
- undetermined soil stability/erosion risk and moderate to steep slopes                                                                                                                                                                | Moderate                     |
| **Leacroft Road Park**       | - Significant habitat for a number of species  
- Koala populations and high numbers of Otherwise Significant Fauna species (BCC NAPP).  
- Small areas of Of Concern Regional Ecosystem;  
- A number of records for significant flora species, mammals and birds and listed frog species (based on the Wildnet search and EPBC search);  
- Mapped wetlands and waterways; and  
- Stable to unstable soils, gently undulating                                                                                                                                             | Low                          |
| **Mt Coot-tha Reserve**      | - A small pocket of Of Concern RE;  
- A number of records for significant flora species, mammals and birds and listed frog species;  
- A small number of mapped waterways; and  
- Unclassified soil stability/erosion risk                                                                                                                                                                                                     | High                         |
| **Toohey Forest Park**       | - Small areas of Of Concern and Endangered Regional Ecosystem;  
- A number of records for significant flora species, mammals and birds and listed frog species;  
- A small number of mapped waterways; and  
- Undetermined soil stability/erosion risk                                                                                                                                                                                                        | Moderate                     |
7.3 MTB Desirability of Seven Reserves

Desirability for MTB within each reserve involves assessing existing facilities and trails and the preferences of the three distinct MTB user groups for the riding conditions to be found there (Table 7-8).

Several principles inform the desirability assessment, notably:

1. Free riding including the construction of trail technical features and steep downhill runs is environmentally unacceptable in any but existing highly disturbed sites.
2. Single width MTB tracks are inappropriate in sensitive ecosystems. These are reserves that are highly likely to contain significant ecological values over the majority of the reserve and where trails are likely to adversely impact these values or where the site contains steep slopes with very unstable soils.
3. No wide trails should be constructed specifically for mountain biking, but that where such hardened wide trails already exist, they may be assessed for their suitability for use by MTB riders, particularly recreational riders.
4. Management trails may be considered suitable for MTB riding on a conditional access basis.

### Table 7-8 MTB Desirability of the Seven Reserves

<table>
<thead>
<tr>
<th>Reserve</th>
<th>Wide hardened trail</th>
<th>Management trail</th>
<th>Single width trail</th>
<th>Free riding, down-hill facilities</th>
<th>Some management issues raised in the consultation (refer Section 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chermside Hills Reserve</strong></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>-</td>
<td>MTB, BMX, trail bikes and horse riding on formal and unauthorised trails</td>
</tr>
<tr>
<td></td>
<td>Clarify trail links to cycleways</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Karawatha Forest Park</strong></td>
<td>Uncertain demand by recreation riders</td>
<td>✓</td>
<td></td>
<td>Potential in quarry site</td>
<td>MTB, trail bikes off track through sensitive areas; off management trail MTB (downhill and single track)</td>
</tr>
<tr>
<td><strong>Kedron Brook Floodway</strong></td>
<td>✓</td>
<td>None</td>
<td>Not challenging</td>
<td>-</td>
<td>Some off-trail use by MTB and trail bikes; horse riding on and off trail</td>
</tr>
<tr>
<td><strong>Lake Manchester Road Park</strong></td>
<td>Uncertain demand by recreation riders</td>
<td>✓</td>
<td></td>
<td>-</td>
<td>Trail bike usage; cross country MTB on management trails; horse access</td>
</tr>
<tr>
<td><strong>Leacroft Road Park</strong></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>-</td>
<td>Daisy Hill–Leacroft link too impacting; MTB, trail and horse use on and off trail, night use</td>
</tr>
<tr>
<td><strong>Mt Coot-tha Reserve</strong></td>
<td>✓</td>
<td>✓</td>
<td>Assessment recommended for existing trail</td>
<td>-</td>
<td>High MTB usage levels, riparian damage at crossings, trail bikes, trail care focus not as ecological as needed</td>
</tr>
<tr>
<td><strong>Toohey Forest Park</strong></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>-</td>
<td>High MTB use of unauthorised tracks; ‘commuter’ pressures</td>
</tr>
</tbody>
</table>
7.4 Appropriateness of Reserves for MTB - Summary of Landscape Scale Assessment

The initial Landscape Scale Assessment was used to ascertain the appropriateness of MTB Trails for the seven nominated reserves based on the results of the information provided. The four categories for the results from the appropriateness assessment are as follows:

1. Use Approved
2. Deemed Inappropriate
3. Requires detailed reserve assessment (Stage 2 Assessment)
4. Conditional Access

The flow chart (Figure 7-1) summarises the assessment decision-making process proposed for the trails assessment and planning.

Figure 7-1 Flow Chart of Decision Process
Results of the Stage 1 Landscape / Park level assessment of the suitability of seven reserves in Brisbane for use of the four types of facilities for MTB riding can be viewed in Table 7.9.

Table 7.9 Appropriateness Rating for the Reserves from the Landscape Scale Assessment

<table>
<thead>
<tr>
<th>Reserve</th>
<th>Wide hardened trails</th>
<th>Management trails</th>
<th>Single width trail</th>
<th>Free riding facilities</th>
</tr>
</thead>
</table>

[1] Use Approved - Only likely to be given where the bicycle riding is already permitted on the given type of facility, or where it is occurring on existing facilities and is automatically considered appropriate. These tracks maybe subject to modification or in some cases closure in any given period. International Mountain Bike Association Guidelines (IMBA) may be used to assess sustainability of trail construction and appropriateness of tracks.

[2] Conditional Access - Where use of the facility for riding was not approved in the past, but its use for MTBs is now conditionally approved. Conditional approval can be altered by BCC under certain circumstances e.g. bushfires, pesticide spraying etc.

[3] Requires Detailed Trail Level Assessment - This was only given where the facility already exists, use or further development of the facility is not automatically rejected based on the landscape level ecological assessment, and it is likely to be desirable for a particularly style of riding. Where this category has been assigned, further desktop and field evaluation of the individual facilities within the reserve is required before conditional approval can be given to a facility to be used for MTB riding.

[4] Deemed Inappropriate - The provision or use of a facility for the style of riding is not appropriate based ecological and/or desirability criteria.
In summary, as a result of the Landscape Scale Assessment, reserves with wide, hardened trails are generally considered appropriate for MTB use without further detailed assessment. The exceptions are Chermside Hills where more work is needed on access issues, Karawatha where demand for wide trails is uncertain and Lake Manchester where demand may be limited as a result of remoteness from recreation riders.

It is recommended that conditional access be provided to mountain bikers on management trails in Chermside Hills Reserve, Toohey Forest Park, Karawatha Forest Park, Lake Manchester Road Park, Leacroft Road Park (Brisbane Koala bushland) and Mt Coot-tha Reserve. This access can be removed at the discretion of the BCC.

A number of reserves are identified as requiring further investigation for MTB potential use. Detailed trail level assessments should be conducted in Toohey Forest, Karawatha Forest Park, Lake Manchester Road Park and Mt Coot-tha Reserve to assess their potential for the provision of single width trails for MTBs, but only where there are existing single width trails and they are assessed as suitable in the Reserve-scale assessment which is the next step in the trails assessment and planning process.

### 7.5 Management for Recreation and Conservation Objectives

The interview results, though restricted due to the small number of interviewees, highlight that all reserves have existing management issues associated with authorised and unauthorised use. The ratings of, appropriateness for open access, conditional access, further investigation and inappropriate for MTB access, are made acknowledging that investment in management will match the recreational and ecological objectives of respective reserves.

### 7.6 Community Engagement on Appropriateness Rating

City-wide consultation is recommended at this stage. It would focus on informing the community and obtaining feedback about the Trails Assessment methodology and the results of the Landscape Scale Assessment provide the Appropriateness Rating for the seven reserves. This consultation would be aimed at building a strong engagement process with key stakeholders and neighbouring communities for the next stages of the Reserve Trails Assessment and the on-ground investigation of individual trails.
8.0 Reserve Trails and On-ground Assessments

8.1 Methodology for Reserve Trails Assessment

Detailed desk-top trail level assessment will be conducted for each park that has been assessed as “Requires detailed trail level assessment” in Stage 1 of this project.

Five reserves were assessed as requiring detailed trail level assessment for single width MTB trails in stage 1:
- Chermside Hills Reserve
- Toohey Forest Park;
- Karawatha Forest Park;
- Lake Manchester Road Park; and
- Mt Coot-tha Reserve.

The Reserve trails Desktop Assessment will include:
- Review of Brisbane City Council (BCC) Vegetation and Track mapping layers and relating information;
- Desktop assessment of ecological sensitivity against locations of existing tracks and evaluation of tracks to be subject to the field investigations;
- Development of maps which depict tracks to be subject to field investigations and tracks which should not be subject to MTB riding.

This Reserve scale assessment will identify and categorise trails using more specific information about the ecological values of the Reserve and about the location and other attributes of existing trails and uses there.

Geographical Information Systems (GIS) maps of all existing single width trails within each of the four reserves will be analysed. Each existing single width trail will be assessed for its suitability as an authorised single width MTB trail. A similar desktop method to that used in stage 1 assessment at the landscape level will be conducted, but at a finer resolution of vegetation mapping and at the level of individual trails. It will assess if the trails are likely to negatively affect sensitive ecosystems. This will involve zoning the reserve into ecosystem sensitivity categories – high sensitivity, moderate sensitivity and low sensitivity. The extent to which each trail passes through these zones, and the likely severity of their impact, will then be used to determine if the trail may be suitable for on reserve assessment. Following the identification of trails for ecological suitability as single width MTB trails, the trails could be assessed further for their likely desirability for riding based on their location, topography, relationship to existing trail network and access. Only trails that achieve a high desirability and low environmental sensitivity rating may then be considered for field assessment.

8.2 Methodology for On-ground Trails Assessment

Following the Reserve trails assessment stage, an on-ground assessment of trails will be conducted only for trails identified as suitable in the desktop component. Assessments will report on:
- Condition of existing tracks in assessment areas
- Protection options for retained vegetation, protected species and vegetation communities
- General recommendations on management and maintenance procedures where required.

Field work will be intensive and will involve walking the selected trail and recording information on detailed ecological values/impacts/issues, current trail condition, management and safety issues, trail hardening options. This information will then be used in conjunction with advice from Council about potential works to determine if any existing trails should in the future be developed as single width MTB trails. This will include decisions as to their suitability for single or multi-use.

On-ground assessment of individual trails will require suitably detailed field work assessment criteria. These criteria are not finalised and are a work in progress at this stage. Examples of data to be recorded for each trail include:

- Trail length
- Current status (authorised or informal)
- Trail surface type
- Trail width
- Detailed trail GIS map
- Topography details
- If it traverses sensitive vegetation communities
- Soil types – any sensitive e.g. have high erosion potential
- Favourability for different types of users
- Like already used for mountain biking
- Likely effect important localised conservation resources – hollow trees close to trail, waterways etc
- Presence of other issues – rubbish, weeds etc
- Evidence of existing erosion, root exposure etc
- Likely user conflict – accidents – sight lines, etc...
- Suitability for mixed use, suitability for single use (width trail – landscape, topography issues – social component)
- Trail difficulty rating

The criteria and process for on-ground trail investigation will be finalised as part of the Reserve trails Assessment.

### 8.3 Community Engagement on Trails Assessments

Community engagement will need to be a significant component of this assessment and planning process, to build understanding amongst stakeholder groups and to engage them in the planning for the multiple objectives held for the reserves. Engagement should be comprehensive and would be reserve-specific using the information provided from the desktop assessment. It would seek to build awareness of the potential for MTB recreation uses under consideration in the reserves, to obtain information about the values and tracks and to engage the community in exploring the options and accompanying management requirements.
ATTACHMENT A

Literature and Trends Review
ATTACHMENT B

Desktop Ecological Assessment Report
ATTACHMENT C

Interview Prompts
ATTACHMENT D

Figures
ATTACHMENT E

Key Terms
ATTACHMENT F

References List