



Mogo Adventure Trails Master Plan

Client- Eurobodalla Shire Council

November 2020

Table of Contents

1	Document Overview	7
2	Executive Summary	8
3	Introduction	10
3.1	Project Overview	10
3.2	Key Objectives	10
3.3	Methodology	11
3.3.1	Literature Review	11
3.3.2	Consultation	11
3.3.3	Field investigation	11
3.3.4	Concept trail development	11
3.3.5	Detailed trail design	11
4	Background Analysis	12
4.1	Overview	12
4.2	Previous Reports	12
4.2.1	Mogo Adventure Trails Hub Strategy	12
4.2.2	Dirt Art Response	13
4.2.3	Eurobodalla Tourism Monitor Financial Year 2017/18	13
4.2.4	Tourism Wayfinding and Signage Strategy	13
5	The Mountain Bike Market Overview	14
5.1	The Mountain Bike Market - National and Local	14
5.1.1	Overview	14
5.1.2	History	14
5.1.3	Current market	14
5.1.4	Current participation and economic data- Australia	15
5.1.5	Current Participation and economic data - Southern Hemisphere	16
5.1.6	Current participation and economic data - Northern Hemisphere	16
5.1.7	The future	17
5.2	Mountain bike tourism	18
5.2.1	Mountain bike tourism markets	18
5.2.2	Complementary mountain bike tourism markets	18
5.2.3	Enthusiast tourist market	19
6	The New South Wales Mountain Bike Market	20
6.1	Overview	20
6.2	Key Destinations	20
6.2.1	Thredbo Resort	20
6.2.2	Awaba	20
6.2.3	Ourimbah	21
6.2.4	Old Man's Valley	21
6.2.5	Royal National Park	21
6.2.6	Tathra	22
6.2.7	Mount Stromlo	22
7	Defining Mountain Bike Destinations	23
7.1	Overview	23
7.2	Nationally-Significant Destination	23

7.3	State-Significant Destination	24
7.4	Regionally-Significant Destination.....	24
7.5	Local-Level Destination.....	24
8	<i>Defining the Mogo and Batemans Bay Regions as a Mountain Bike Destination</i>	25
8.1	Overview	25
8.2	Current Situation	25
8.3	Key Strengths	25
8.3.1	Location	25
8.3.2	Climate.....	26
8.3.3	Coastal location.....	26
8.3.4	Topography, terrain and elevation.....	27
8.3.5	Urban Infrastructure.....	27
8.3.6	Soil type	27
8.3.7	Regional positioning	27
8.4	Key Weaknesses	27
8.4.1	Elevation Opportunity	28
8.4.2	Vegetation Damage.....	28
8.5	Key Opportunities	28
8.5.1	High Quality Trail Riding.....	28
8.5.2	Integration with Towns.....	28
8.6	Key Threats.....	29
8.6.1	New Competitors	29
9	<i>Site Analysis</i>	30
9.1	Location.....	30
9.1.1	Location Map	30
9.2	Topography	31
9.3	Geology	31
9.4	Climate	31
9.5	Values Analysis.....	31
9.5.1	Natural Values.....	31
9.5.2	Social Values.....	32
9.5.3	Cultural Values	33
10	<i>Consultation.....</i>	34
10.1	Overview	34
10.2	Consultation Session Summary	34
10.2.1	Eurobodalla Shire Council.....	34
10.2.2	Forestry Corporation of NSW.....	35
10.2.3	Stakeholder Groups / Local Users / Residents	35
10.2.4	Commercial operators and bike stores.....	37
11	<i>Existing Trails Overview.....</i>	39
11.1	Overview	39
11.2	Access Nodes.....	39
11.3	Trail Map	41

11.4	Auditing Process	44
11.5	Aims and Objectives	44
11.6	Ranking Criteria	45
11.6.1	Overview.....	45
11.7	Overview of Ranking Criteria	45
11.8	Trails Assessed – Deep Creek Dam	47
11.8.1	Overview.....	47
11.8.2	Trails Not Assessed.....	48
11.8.3	Trails Assessed	49
11.9	Trails Assessed – Maulbrooks Road.....	58
11.9.1	Overview.....	58
11.9.2	Trails Not Assessed.....	59
11.9.3	Trails Assessed	60
12	<i>New Development Concepts</i>	61
12.1	Primary Trail Head.....	61
12.2	Secondary Trail Head.....	63
12.3	Existing Trails Upgrades and Realignments	65
12.3.1	Overview.....	65
12.4	Existing Trails.....	65
12.4.1	General Works	65
12.5	Proposed New Trails.....	68
12.5.1	Overview.....	68
12.5.2	Key Objectives.....	68
12.5.3	Trail Summaries- New Trails	68
12.5.4	Proposed New Trails Maps	68
12.6	Proposed Trails.....	74
12.6.1	Trail One	74
12.6.2	Trail Two	75
12.6.3	Trail Three.....	76
12.6.4	Trail Four.....	78
12.6.5	Trail Five	79
12.6.6	Trail Six	80
12.6.7	Trail Seven	81
12.6.8	Trail Eight.....	82
12.6.9	Trail Nine.....	83
12.6.10	Trail Ten	84
12.6.11	Trail Eleven.....	85
12.6.12	Trail Twelve.....	86
12.6.13	Trail Thirteen.....	87
12.6.14	Trail Fourteen.....	88
12.6.15	Trail Fifteen	89
12.6.16	Trail Sixteen	90
12.6.17	Trail Seventeen	91
12.6.18	Trail Eighteen	92
12.6.19	Trail Nineteen	93
12.6.20	Trail Twenty	94
12.6.21	Trail Twenty-One.....	95
12.6.22	Trail Twenty-Three	96
12.6.23	Trail Twenty-Two.....	98

13	<i>Gravel Grinding Concepts</i>	99
13.1	Overview	99
13.2	The Market Opportunity	99
13.3	Proposed Loops	99
13.3.1	22km Loop	100
13.3.2	62km Loop	101
13.3.3	107km Loop	102
13.3.4	Implementation Plan	103
14	<i>Economic Impact Analysis</i>	104
14.1	Overview	104
14.2	Case Studies	104
14.2.1	Blue Derby	104
14.2.2	Rotorua	104
14.2.3	Maydena Bike Park	105
14.3	Estimated Visitation	105
14.4	Estimated Economic Impact	105
15	<i>Implementation Plan</i>	107
15.1	Detailed trail design	107
15.2	Approvals	107
15.2.1	Forestry Corporation of NSW Assessment	107
15.2.2	Development Application	107
15.2.3	Geotechnical Assessment	107
15.3	Construction Staging	107
15.4	Construction Approach	107
15.4.1	Machine construction where possible	107
15.4.2	Volunteer construction	108
15.4.3	Climatic considerations	108
15.5	Signage	108
15.5.1	Overview	108
15.5.2	New brand development	108
15.5.3	Budget	108
15.6	Suggested Development Budget	108
15.6.1	Overview	108
16	<i>Operational Considerations</i>	109
16.1	Management Models	109
16.2	Trail Maintenance	109
16.3	Uplift Opportunities	109
16.3.1	Overview	109
16.3.2	In park uplift opportunities	109
16.4	Risk and Incident Management	109
16.4.1	Overview	109
16.4.2	Key Considerations	110
16.4.3	Management Considerations	112
17	<i>Branding and Marketing</i>	114

17.1	Overview	114
17.2	Key Strengths	114
17.3	Marketing Plan	114
17.3.1	Overview.....	114
17.3.2	Marketing formats and channels	115
17.4	Marketing Budget.....	117
18	Conclusion.....	118
19	Appendix 1- Uplift Service Provider Plan.....	119
20	Appendix 2- IMBA TDRS.....	120

1 Document Overview

Version	Date	Author	Notes
Draft 1	12 March 2020	Simon French	Internal use only
Final Draft	22 April 2020	Simon French Jason Lam	Internal use only
FINAL	10 November 2020	Simon French Jason Lam	Internal use only

2 Executive Summary

The Mogo area has a history of mountain bike trail development and event conduction across the past several years, including the conduction of a number of high-profile regional mountain bike events. Immediately prior to the commencement of this project the area has been severely affected by fire, which has devastated the local community and affected numerous residential and commercial properties. The fires have had a profound effect on the local tourism economy, which has provided an even greater incentive to pursue the potential for destination-focused mountain biking in the region. During the preparation of this report, the COVID-19 virus has caused further disruption to an already damaged tourism industry.

The past five years has seen exponential growth in destination-focused trail development across Australia. Developments such as Blue Derby, Maydena Bike Park and Thredbo Resort are bringing tens of thousands of visiting riders to mountain bike destinations each year and delivering tens of millions of dollars in economic impact. During this period, trail design and construction, along with bike technology has fed a rapidly evolving mountain bike market, which has significantly changed rider behaviour. The current trail network in the Mogo region does not provide a mountain bike experience that has significant appeal for local or visiting riders.

Over the past several years, the sport of mountain bike riding has continued to experience exponential growth across the world; including significant growth in mountain bike tourism across Australia. Despite this growth, formal mountain bike infrastructure development has failed to keep up with demand, resulting in many local riders turning to informal trail development as a way of accessing the volume and style of trails they wish to ride close to their home. While there has been a substantial volume of informal trail development in the area, this trail development does not provide the diversity and quality of trail required to establish a viable mountain bike destination.

This master plan builds upon the draft trails strategy prepared by TRC, which provided a high-level strategy for developing an adventure trails network in the Mogo area.

Dirt Art has been engaged by the Eurobodalla Shire Council (ESC) to undertake a master planning project, which aims to progress the concept of a destination trail network within the Mogo area. *Dirt Art* has worked with a target area focusing on the towns of Mogo and Batemans Bay, exploring a large area for potential trail development. The focus of land for the project will be land managed by Forestry Corporation of New South Wales (FCNSW), due in large part to the fact that the agency manages the vast majority of the land in the region.

The target area has strong potential for development as a mountain bike trail destination. Key strengths of the area include;

- Location: proximal to major population areas of Canberra and Sydney
- Climate: the local climate is highly-appealing for year-round riding
- Coastal location: the coastal location of the area will appeal to visiting riders
- Topography, terrain and elevation: the target area has moderate slopes and good elevation opportunities
- Urban infrastructure: the target area provides strong connectivity into townships for a genuine ride-in, ride-out opportunity
- Soil type: the shaley clay in the target area provide excellent year-round riding potential and wear characteristics
- Regional positioning: there are limited mountain bike destination opportunities within a 3hr driving radius of the target area

The new trail developments proposed by *Dirt Art* aim to achieve the following high-level strategic objectives;

- Maximise visitation potential across a range of rider markets
- Cater to the wants and needs of local riders
- Maximise economic development and business opportunities
- Minimise implementation costs and complexity
- Minimise operational costs and complexity
- Consider and allow for development staging opportunities

Dirt Art has proposed a number of new trail and infrastructure developments, including but not limited to;

- 125.6km of new trails
- Major entry hub

The project also proposes to formalise and improve a network of approximately 30km of existing trails.

The new proposed developments will provide strong appeal for visiting riders, as well as catering to the wants and needs of local riders. Catering for a broad cross section of riders, the project has a strong focus on intermediate riders.

The Mogo project will have a significant impact on the local and regional economy, with an anticipated year-one total ride days/visitors of 45,000, and a year-one indirect economic impact of over \$11.8m. The project will create approximately 10 jobs during construction and is expected to create 20FTE new jobs once operational, across an anticipated 6+ new businesses.

The Mogo project is an excellent opportunity to use mountain biking as a major component of the economic revival of the fire ravaged regions of Mogo and Batemans Bay. With little to no regional competitors, the proposed trail system has significant potential to attract strong visitation to the area, the majority of which would be multi-day stays from a market known to spend more than the average tourist.

3 Introduction

3.1 Project Overview

Dirt Art has been engaged by the ESC to develop a master plan ('the plan') that will guide the development of a major trail network connecting the towns of Mogo and Batemans Bay.

The plan has a strong tourism and economic development focus, with the view to utilising mountain biking as a major component of the economic revival of the region post bush fires. A focus on event potential also builds upon the economic development potential of the proposed trail network.

3.2 Key Objectives

The key objective of this project is to develop a mountain bike plan that;

- Builds on the work undertaken by TRC in the original trails Strategy and provides further evidence and details around the key findings of that piece of work
- Defines the key strengths of the target area as a mountain bike destination
- Positions the project within the broader mountain bike destination industry
- Considers the social and community values of the target area
- Is environmentally sensitive and sustainable
- Provides cost-effective construction conditions
- Minimises land tenure complexity, and streamlines assessments and statutory approvals
- Maximises direct and indirect economic opportunities and benefits
- Provides maximal community benefit and engagement
- Provides a clear pathway for pursuing the project through to construction and operation

3.3 Methodology

The project has engaged the following methodology;

3.3.1 Literature Review

A summary of all reports and relevant literature reviewed can be found at **4.2**.

3.3.2 Consultation

Dirt Art has undertaken significant consultation through the project. A list of groups, organisations and individuals consulted with can be found below. A detailed consultation summary can be found at **Section 10**.

3.3.3 Field investigation

Field investigation of potential development areas was undertaken by *Dirt Art* staff between the 18th February and 29th February 2020.

This field investigation involved the assessment of existing trails, including, formal mountain bike trails, informal mountain bike trails, and walking trails.

Field inspection has also been undertaken to develop concept trail alignments.

A detailed summary of existing trails can be found in **Section 12**.

3.3.4 Concept trail development

Using a comprehensive opportunities and gap analysis, a number of concept trail alignments have been prepared for future potential trails. These alignments aim to address key network gaps, as well as opportunities for establishment of high-quality trail experiences. Concept trail alignments have been developed in areas that provide the lowest possible conflicts with environmental, historical and cultural values.

3.3.5 Detailed trail design

Detailed trail design does not form part of this project.

4 Background Analysis

4.1 Overview

Dirt Art has undertaken a comprehensive background analysis for the project. This analysis has included review of a wide range of existing documents, plans and survey data.

4.2 Previous Reports

4.2.1 Mogo Adventure Trails Hub Strategy

Report title	Mogo Adventure Trails Hub Strategy
Author/s	Tourism Recreation Conservation (TRC)
Date	August 2019

The Mogo Adventure Trails Hub Strategy was prepared by TRC Tourism for Eurobodalla Shire Council in August 2019. The strategy focused on the broader offerings of Mogo and explored the potential of the town being the epicenter of a state-significant mountain bike destination.

As part of the report, four key agendas were analysed include the following:

- State and Regional Context
- Overview of Mogo and its existing trail network
- Assessment of Mogo as an adventure trails hub
- Strategic plan of Mogo Adventure Trails Hub

The report concluded that Mogo provided a strong basis for establishing itself as a genuine adventure trails hubs due in part to its proximity to Canberra as well as the region's unique undulating landscape and scenic ocean views. With the appropriate investment and quality trail development, Mogo has the very real opportunity to bring short to long term benefits to the region with the addition of adventure tourism that complements the existing offerings of the area.

The report highlighted the development potential of the Deep Creek Dam area of Mogo State Forest as a major zone for future investigation for a series of new trails to complement the existing network built by local riders. It was recognised that the existing Maulbrooks Road trail network would be a stand-alone development given its distance away from Mogo and accessed primarily by vehicles.

4.2.2 Dirt Art Response

Dirt Art agree with the ideas and concepts put forward in the Mogo Adventure Trails Hub Strategy and confirms the potential economic growth predicted for the region is in line with the current market trends and major domestic mountain bike developments in the last 5 years.

Having surveyed the existing landscape and trails that currently sit within the two distinct trail zones, Maulbrooks Road and Deep Creek Dam, *Dirt Art* agrees with The Strategy's keen focus on developing the latter area due to the opportunity to develop genuine connectivity to Mogo and surrounding coastal suburbs. Furthermore, the area surrounding the dam presents high quality soil types that are conducive to the construction of sustainable trails that can be ridden in a much wider weather spectrum than Maulbrooks Road, which generally displays poorer soil types that are more prone to erosion as evident in a select number of trails encountered during our preliminary field investigations.

4.2.3 Eurobodalla Tourism Monitor Financial Year 2017/18

Report title	Eurobodalla Tourism Monitor 2017/18
Author/s	Destination Research
Date	November 2018

The Eurobodalla Tourism Monitor 2017/18 report provides a summary of tourism visitation and spending across the 2018/19 financial year. *Dirt Art* has utilised the report to analyse existing visitor markets, and to establish visitor spending to assist in developing the economic analysis for the project.

4.2.4 Tourism Wayfinding and Signage Strategy

Report title	Tourism Wayfinding and Signage Strategy
Author/s	Wayfound
Date	December 2018

The Tourism Wayfinding and Signage Strategy was developed to provide a whole of destination tourism and wayfinding signage strategy.

Dirt Art has reviewed the strategy with the view to recommendations made regarding broader tourism destination signage. *Dirt Art* recommend that that any road signage associated with the trails project is consistent with broader signage strategy as outlined in the report.

5 The Mountain Bike Market Overview

5.1 The Mountain Bike Market - National and Local

5.1.1 Overview

The following market profile draws upon research and anecdotal observations from a range of sources. The information draws heavily upon the Australian Mountain Bike Market Profile Survey, undertaken by *Dirt Art* in 2014, 2016 and 2018.

5.1.2 History

Mountain biking has been well established in Australia since the early 90's, though the sport really began to prosper in the mid-late 90's, which saw a period of some of the first purpose-built mountain bike infrastructure in Australia. In 2004 some of Australia's first large-scale mountain bike parks were developed, namely Glenorchy Mountain Bike Park in Tasmania and Mount Stromlo in Canberra. Prior to these developments, mountain biking was taking place largely on existing walking trails and on informal trails created by the riders themselves.

Between 2005 and present day there have been significant advances in mountain bike technology, which is contributing to defining the type of riding experience achievable for and desired by riders. While some trends in riding have come and gone, the disciplines of downhill and cross-country have remained albeit with some blurring between these styles of riding with the emergence of the all-mountain bicycle.

5.1.3 Current market

The current mountain bike market is dominated by longer travel, dual suspension mountain bikes, broadly referred to as all-mountain, trail, or enduro bicycles. This style of bike is incredibly capable at both climbing and descending and has effectively increased the capability of the average rider.

Currently riders are seeking a broad range of experiences from local urban and peri-urban trails through to remote wilderness style longer distance riding experiences. Generally speaking, the mountain bike tourist market is seeking these destinations and adventure experiences in more remote natural environments, involving longer distance loops or point-to-point trails. Trails proximate to urban areas are typically most popular with local riders because of their accessibility and convenience, though may be ridden by visitors drawn to an area for other experiences.

Research indicates that the current demographic of riders is predominately male, with an age of 25-45 years and a high disposable income.¹ This market is a key target for tourism as they are seeking longer, destination-based stays and typically seek out high quality dining and accommodation options.

¹ Koepke, J. (2005) Exploring the Market Potential for Yukon Mountain Bike Tourism, Cycling Association of Yukon, Canada, page 5.

5.1.4 Current participation and economic data- Australia

Current participation data for mountain biking in Australia is distinctly lacking due, in the main, to the nature of the activity itself. However, as new commercial venues emerge more data is becoming available. Traditionally the recording of trail usage numbers has been a relatively rare practice, though in a current climate often characterised by particularly frugal government and corporate investment this practice is increasingly being used to justify investment in trails. Sample data from some of Australia's key mountain bike destinations can be found below;

Maydena Bike Park (Tasmania) Maydena Bike Park is Australia's largest gravity-focused bike park, with 75km of trails suiting a predominantly enduro market. The park has hosted 25,000 uplift days and brought an estimate total 30,000 visitors to the town in its first year of operation. With a broadening focus towards trail-based riding and beginner friendly trails, visitation at the park is likely to increase significantly through later years.

Blue Derby (Tasmania) Blue Derby is Australia's highest profile mountain bike trail destination, with a focus on intermediate trail riding with limited up-lift opportunities. Derby has been in operation for close to 5 years, and reportedly hosted over 30,000 riders in 2018. The town is seeing a dramatic transformation, with several new business opening across tour, retail and food and beverage sectors.

Mount Buller (Victoria) have invested over \$2m over a four-year period in developing predominantly all-mountain and cross-country mountain bike trails. Data for the resort (as of June 2014) recorded a total rider count of 40,000 – 50,000 visitors over a nine-month period.²

You Yangs (Victoria) have recorded rider numbers of approximately 150,000 per annum in 2011, though a higher true count is expected due to the various entry points used for the park.³

² September to May, private communication

³ Data provided by Parks Victoria staff July 2011.

5.1.5 Current Participation and economic data - Southern Hemisphere

Internationally, New Zealand is Australia's closest competitor in the mountain bike tourism market. While New Zealand offers a significant volume of trails, not all trails are necessarily of a world-class standard, often involving poorly constructed volunteer-built trails, fire trails and access roads to add volume to trail distances. Examples of participation in an international context can be seen below;

Rotorua (North Island) is perhaps New Zealand's most recognised and loved mountain bike destination. The 150km+ trail network is regarded around the world for its fast, flowing trails through a working pine forest. Research by APR consulting found that approximately 33% of visitors to the forest in 2007 were Australian.⁴ It was recently reported that mountain bike activity in Rotorua is generating \$10.2m per annum, as opposed to the \$4.6m (one time) in export revenue potentially generated by logging the forest.⁵

Queenstown (South Island) is one of the Southern Hemisphere's leading mountain bike destination. Queenstown has a gravity-based bike park (Skyline Queenstown), along with a number of other regional cross country and all mountain trails. The region is renowned for its iconic long-format descending trails, such as Rude Rock, Corrotown and Skippers Canyon.

A 2017 report by TRC Tourism found that mountain biking contributed over \$25m per year to the local economy.

5.1.6 Current participation and economic data - Northern Hemisphere

Whistler Mountain Bike Park (Canada) is arguably the world's most recognised mountain bike park, offering one of the highest volumes of trail in one venue anywhere in the world. The Whistler Bike Park received approximately 200,000 riders per year (through its green season), but it is estimated that a similar volume of users rides the surrounding valley trail network annually.

A 2016 report commissioned by the Whistler Off Road Cycling Association (WORCA) found that mountain biking contributed over \$79m p.a. to the regional economy of British Columbia. The report also found that over 500,000 individual rides were undertaken in the region in 2016.⁶

Park City, Utah (United States of America) offers hundreds of miles of single-track across a number of riding areas. All riding styles are catered for across public trails, and commercial gravity-based bike parks. This IMBA Gold level mountain bike destination received over 1m visits in 2014.

Oregon (United States of America) has a significant cycle tourism industry. Cycle tourism (predominantly mountain biking) was worth over \$400m to the state in 2013, with cycle tourist spending on average 20% more than general tourists.⁷

⁴ Recreational Use and Economic Impact of Whakarewarewa Forest (2009 Update), APR Consultants

⁵ The New Zealand Herald January 17th 2012, Bikes bring more money than wood from Rotorua forest

⁶ CSTA Economic Impact of Mountain Biking 2016

⁷ Information provided by Destination Oregon.

5.1.7 The future

5.1.7.1 General

The sport of mountain biking has continued to see sustained and exponential growth both in Australia and overseas. With current demand for high-quality riding opportunities still far exceeding supply, there exists significant potential to see excellent return on investment when developing world-class mountain bike trails and facilities.

Dirt Art suggest that the all–mountain category of riding will continue to grow, resulting in an increasing demand for more challenging, descending-focused riding. *Dirt Art* suggests that the next five years will see a huge increase in demand for chairlift or shuttle accessed descending cross–country and all–mountain trail experiences. Many of the major recent and underway mountain biking trail developments focus on these experiences (e.g. Mt Buller Epic, Hollybank Juggernaut, Blue Tier, Derby’s Black Stump Shuttle Trails, Thredbo AM Descent and Valley Trail) which are reflective of the increasing demand for this style of descending cross–country / all–mountain trail.

5.1.7.2 E-bikes

While traditional bike technology is likely to continue to stabilise, the rapid emergence of the E-bike is likely to have a significant impact on the sport. In *Dirt Art’s* view, E-bikes will never replace the traditional mountain bike, but as technology improves the bikes will become a much more common feature on the trails. E-bikes make the sport more accessible to newer and less-capable riders and increase the ride duration and the accessible elevation range for more experienced riders.

It is important to recognise the distinction in E-bikes between high-powered throttle assisted bikes and lower-powered pedal-assisted bikes. Pedal assisted bikes have no additional impacts on trails, whereas throttle powered bikes are illegal in most public areas and will cause significant additional damage to trails.

5.2 Mountain bike tourism

5.2.1 Mountain bike tourism markets

Tourists engaging in mountain biking can be divided into two distinct categories, the 'complementary market'; those who engage in mountain biking as a complementary activity (not as a primary motivator or sole purpose for travel), and the 'enthusiast market' those who have travelled with mountain biking being the primary or sole reason for their trip.

5.2.2 Complementary mountain bike tourism markets

Mountain bike riding as a complementary activity has risen dramatically in popularity in recent years, as the sport has moved beyond the 'extreme sport' image of the past, and more towards the accurate perception of the sport as a safe, inclusive and fun 'adventure' activity.

Complementary visitation is a key component of a successful government-backed mountain bike destination as it allows the capture of a much larger target audience, and promotes longer stays, and increased travel party size. Complementary tourists include valuable family markets, who will often stay longer and spend more than solo and small group tourists.

The emergence of mountain biking as a commercially viable complementary activity has been driven largely through the development of safer, more beginner-friendly trails, and by the growing number of commercial operators including the sport in their activity programs. Commercial viability of mountain biking as a complementary activity requires a lower volume of trail than for the enthusiast market, though the required quality and maintenance demand of trails will be higher. As a complementary activity, mountain biking offers genuine avenues for commercial return, while also potentially lengthening the duration of stay for existing guests. In addition to this, targeted marketing may draw in guests that may otherwise have travelled to an alternative location.

Successfully targeting the complementary tourism market involves careful consideration and delivery against the following key areas;

- High-quality beginner-friendly trails
- A structured progression in difficulty through trail types
- A good volume of smoother flow style trails
- Access to high-quality hire bikes
- Comprehensive and easily interpreted trail signage
- Access to a variety of formal and informal non-riding activities
- Access to a good range of accommodation and food and beverage opportunities
- High quality supporting infrastructure

The location of Mogo and Batemans Bay provides strong potential for attraction of the complementary rider market, with significant through traffic and general tourism through the region.

5.2.3 Enthusiast tourist market

The enthusiast market is defined as mountain bike tourists for whom mountain biking is the primary motivator/purpose for their travel. The enthusiast market seeks out new and exciting mountain bike destinations, and typically travel multiple times annually to engage in mountain biking.

The mountain bike enthusiast market is typically populated by 25-45-year-old males with a high disposable income, who are seeking opportunities to travel to destinations with the primary purpose of going mountain bike riding.

While mountain bike riding may be the primary travel motivator, the availability of alternative activities will still influence this traveler as they will often look for destinations where they can viably travel with family, their spouse or non-enthusiast travelling companion/s.

The mountain bike enthusiast is typically travelling for multi-day stays and is seeking unique and high-quality trail experiences. These users will typically seek higher volumes of trail, as they will often ride 30-40km+ per day.

Successfully targeting the enthusiast tourism market involves careful consideration and delivery against the following key areas;

- High quality trails
- Unique and iconic environments
- Iconic signature trail experiences
- High volumes of trails
- A good supply of intermediate to advanced trails

The Mogo project is a strong opportunity to cater to the enthusiast markets, with little to no regional destination competition, and close proximity to both Sydney and Canberra.

6 The New South Wales Mountain Bike Market

6.1 Overview

The mountain bike destination market in New South Wales is relatively small, with a definite lack of large-scale mountain bike destination development. The state has a number of smaller, regional facilities, but has very limited large-scale destinations. Arguably, the states leading destination is the Snowy Mountains, with a focus on Thredbo Resort.

Currently there is a significant opportunity in New South Wales to establish new, high-quality mountain bike destinations, with very minimal market competition.

6.2 Key Destinations

6.2.1 Thredbo Resort

Location	Thredbo, NSW
Development status	Complete
Trail volume	50km
Trail types	DH, Enduro, Trail
Projected visitation	35,000

Thredbo Resort is arguably New South Wales' leading mountain bike destination. With a strong gravity focus, the resort is also surrounded by a variety of regional trail riding, including the All Mountain Trail. The destination is Australia's only lift-accessed mountain bike riding opportunity.

Notably, Thredbo is a seasonal operation, which closes for mountain biking between May and August.

6.2.2 Awaba

Location	Newcastle, NSW
Development status	Complete
Trail volume	30km
Trail types	DH, Enduro, Trail
Projected visitation	20,000

Awaba is the largest mountain bike facility near Newcastle on the NSW coast. While largely volunteer-led, the destination has a broad range of trail opportunities. The destination has a good elevation opportunity, and a diverse trail network. The facility regularly hosts cross-country events and major downhill races.

6.2.3 Ourimbah

Location	Ourimbah, NSW
Development status	Complete
Trail volume	20km
Trail types	DH, Enduro, Trail
Projected visitation	15,000

Ourimbah is a popular mountain bike destination on the Central Coast with a variety of trails ranging from cross-country to all-mountain and downhill. The facility has recently had the addition of a flow trail and bridge infrastructure to manage rider conflict on the popular downhill track. The destination has a broad range of trails in a relatively small trail network volume. Ourimbah currently services a largely local audience with a shuttle service run on the weekend by a local business.

6.2.4 Old Man's Valley

Location	Hornsby, NSW
Development status	Complete
Trail volume	10km
Trail types	Enduro, Trail
Projected visitation	40,000

Old Man's Valley is Greater Sydney's largest formal mountain bike trail destination, despite its low, ~10km trail volume. The destination has a small, yet diverse network of trails, but suffers from a general lack of trail volume. The destination services a largely local audience.

6.2.5 Royal National Park

Location	Heathcote, NSW
Development status	Informal/small formal network
Trail volume	10km formal/100+km informal
Trail types	Enduro, Trail
Projected visitation	40,000

Royal National Park is the trail network that services the majority of the riding population south of Sydney. The destination has a small network of formal trails, and a large network of informal trails. Despite its limited elevation, the area does have potential for formalisation of a larger trail network. *Dirt Art* are currently engaged by the National Parks and Wildlife Service to develop a trail development plan for the area, with the aim to formalise a larger trail network.

6.2.6 Tathra

Location	Tathra, NSW
Development status	Complete
Trail volume	53km
Trail types	Enduro, Trail
Projected visitation	20,000

Tathra is a popular coastal riding destination on the NSW South Coast. The volunteer-built trail network has grown to over 50km of trails and is popular for its family-friendly riding and beach-focused holiday options. The destination is frequented by many riders from Canberra as well as the adjoining towns along the southern coastline of NSW.

6.2.7 Mount Stromlo

Location	Canberra
Development status	Complete
Trail volume	40km
Trail types	Enduro, Trail, Downhill
Projected visitation	80,000

While located in the ACT, Mount Stromlo has been included as it is a large, well-established destination within viable driving distance from Sydney. Mount Stromlo offers a broad range of trails catering for all rider abilities. While trail quality is considered high, the area does not offer much in the way of high-quality environments, elevation opportunities or unique points-of-difference, which minimise its appeal as a mountain bike tourism destination.

7 Defining Mountain Bike Destinations

7.1 Overview

Mountain biking has been driving visitation into small regional areas for several years now, though the focus on mountain biking as an effective driver of tourism and economic development is relatively new. Destinations such as Blue Derby (Tasmania) have proven that small towns can be reinvigorated with mountain biking spearheading this change.

The below hierarchy has been developed by *Dirt Art* to assist in positioning trail developments to an appropriate audience, providing clarity on funding and operational models for land managers.

Notably, the benchmarks for mountain bike destinations is not a static or quantitative measure and will be affected by regional nuances along with a range of other factors. Also, of note, with some \$100m+ set to be invested in mountain bike trail development across the next 2-3 years, the benchmark is set to increase.

Dirt Art suggest recognition of the following key considerations;

- Trail quality will always be more important than trail quantity
- Gravity-based trail networks are a rarer commodity and as such, the benchmarks for these trail destinations is lower
- Travelling riders have a strong preference for riding in high-quality natural environments
- Elevation opportunities are extremely important, and often provide an insurmountable point-of-difference against other more urban trail opportunities

7.2 Nationally-Significant Destination

The idea of a nationally-significant mountain bike destination is relatively new, with the first destinations notionally meeting this benchmark only in the past three years. A nationally-significant mountain bike destination generally possesses the following key characteristics;

- 80+km trail volume
- Trails catering for green circle to double black diamond difficulty
- Capacity to host national and/or world-level events
- High-quality, comprehensive trail signage system
- A high-quality entry gateway (quality signage, pump track etc.)
- 300m+ elevation opportunity
- Uplift opportunity
- Very high-quality natural environments
- A local bike store/s
- A minimum of two market-appropriate food outlets within 10 min drive from trails
- Market-appropriate accommodation meeting supply demands during peak season
- A funded formal trail maintenance program with specific, trained human resources

7.3 State-Significant Destination

State-significant trail destinations cater for a more regionally-focused audience, though notably will generally attract national visitation, particularly when other regional or other high-quality trail opportunities are available nearby. A regionally-significant mountain bike destination generally possesses the following key characteristics;

- 50+km trail volume
- Capacity to host national or regional level events
- Uplift opportunity
- Trails catering for green circle to black diamond difficulty
- High-quality, comprehensive trail signage system
- 200m+ elevation opportunity
- Good quality natural environments

7.4 Regionally-Significant Destination

Regionally-significant trail destinations cater for a more regionally-focused audience, though notably will generally attract national visitation, particularly when other regional or other high-quality trail opportunities are available nearby. A regionally-significant mountain bike destination generally possesses the following key characteristics;

- 20+km trail volume
- Capacity to regional level events
- Trails catering for green circle to black diamond difficulty
- High-quality, comprehensive trail signage system
- 100m+ elevation opportunity

7.5 Local-Level Destination

A local-level mountain bike destination services a smaller, local market, and will generally hold low appeal for visiting riders. These destinations are generally constructed utilising primarily local volunteer labour. A locally-significant mountain bike destination generally possesses the following key characteristics;

- <20km of trails
- Capacity to hold local-level (club) events
- A functional signage system

8 Defining the Mogo and Batemans Bay Regions as a Mountain Bike Destination

8.1 Overview

The Mogo and Batemans Bay area has strong potential for the establishment of a mountain bike destination of state-level significance, with potential for development of a destination of national significance. An excellent range of topography and terrain, coastal location and appealing climate, along with proximity to Sydney and Canberra contribute strongly to the appeal of the destination for mountain bike riding.

The below report section will detail the opportunity for mountain biking in the area.

8.2 Current Situation

There are currently two key mountain bike trail areas in the area, the Deep Creek Dam and Maulbrooks Road trail networks. At the time of preparing this report, purpose-built trails in both of these areas is informal. While previous permits authorised some trails in the Maulbrooks Road area, this permit has since lapsed, with discussions around future permits ongoing between stakeholders.

The area has hosted a range of mountain bike events in the past, with a focus on stage racing and related event types.

The current functional trail network provides approximately 20km of trail riding, with some other trails beyond this volume currently un-rideable due to the recent fires. It would appear that the current trail network services a local and regional audience, with relatively limited visitation from riders beyond the region.

The current trail network will be analysed in **Section 12**.

8.3 Key Strengths

The target area offers strong potential for mountain bike destination development, with the following key strengths;

8.3.1 Location

Mogo and Batemans Bay are located approximately 2hr drive from Canberra and 4hr drive from Sydney, respectively. These drive times are in an ideal range to facilitate both day and overnight trips, with a stronger focus on overnight stays.

With a population of over 450k, Canberra provides an excellent baseline population for the project, with the 2hr drive distance being short enough to promote a relatively easy day trip. The Mogo project has a number of strategic advantages that will be highly-appealing to Canberra-based riders, including trail volume, coastal location, trail quality and climate. It is anticipated that the project will be particularly appealing to Canberrans during the winter period, when riding locally is generally unappealing due to the cold and wet climate.

Located just 4hr drive from Sydney, the project has a large potential audience of over 5m people. Sydney may be a slightly longer drive time, though this distance all but forces an overnight stay, significantly increasing visitor spend. With the smallest formal trail volume to population ratio in Australia, the Greater Sydney area has undoubtedly the worst formal mountain bike trail opportunities in Australia on a per capita basis. The poor quality and volume of the formal Sydney mountain bike trail offerings at present provide a very large and very motivated visitor market for this project.

Worth noting is that Rex Airlines fly to Moruya from Sydney, providing flight access very close to the proposed trail network. While these services may not always suit the schedule and/or budget of travelers, and may have limitation on cargo such as bikes, they do provide an option for visitors. Air transfers may also be a valid choice for people who may prefer to hire a bike locally to facilitate their trip.

8.3.2 Climate

The project area has an appealing, temperate climate. While summers can be warm and humid, winters in the target area particularly appealing for mountain bike riding. With winter temperatures generally in the 16-20 degree range with very minimal rain, the area has a near perfect winter climate for riding. When viewed against the Canberra winter riding climate, the area has very strong appeal.

The winter riding potential of the area is particularly important when considering the current tourist seasonality of the area, where the majority of visitors to the area are visiting in the summer period. This project has significant potential to establish a viable year-round tourism industry for the area, bolstering summer visitation, but importantly establishing a legitimate winter visitor market.

8.3.3 Coastal location

The value of the coastal location of the trails should not be underestimated. This attribute provides three key market opportunities;

- Complementary visitation through general through traffic
- The water sports/mountain biker visitor
- Family friendly holiday market

The complementary visitor market is a large visitor opportunity, as these visitors are a captive audience, already in the area. Catering to this market will require world-class beginner trails, and excellent commercial servicing providing hire bikes, tours and related products.

The water sports/ride holiday market is smaller, yet very important given product availability in the current market. There are very few opportunities in Australia to ride world-class, formal mountain bike trails and surf within the same immediate area.

The family-friendly riding holiday market is again, small though rapidly growing. A growing female and youth rider market is driving a strong interest in mountain bike family holidays. This project is very well-positioned to capitalise on this market opportunity.

8.3.4 Topography, terrain and elevation

The target area has moderate slopes and good elevation opportunities, with a maximum available elevation opportunity of over 500m. While the majority of the project area has a relatively small elevation opportunity (<150m), these areas possess excellent topography for trail development.

The Wandera Mountain behind Mogo has a summit at 576m AMSL (above mean sea level), with potential to connect trail from the summit to the sea, providing an iconic mountains to beach wilderness trail. This is an incredibly strong trail opportunity, which would act as the 'hero trail' for the destination.

Moderate (20-40 percent gradient) slopes are the norm throughout the target area, providing excellent conditions for trail development. While there are some low-lying flat and swampy areas, these are easily avoided through the trail design process.

8.3.5 Urban Infrastructure

The target area provides excellent connectivity into both Batemans Bay and Mogo townships for a genuine ride-in, ride-out opportunity. *Dirt Art* suggests that Mogo act as the primary trail head, where there is potential to connect the primary trail network into the main street of the town. This connectivity provides excellent visitor servicing, while also maximizing economic development opportunities.

Notably, some new urban infrastructure developments will assist in supporting the project, including but not limited to;

- Bike parking/racks
- Drinking water stations
- Urban cycle paths

8.3.6 Soil type

There are two distinct soil types throughout the project area; shaley clay and decomposed granite with a high clay content. Both soil types provide excellent year-round riding characteristics.

The predominant soil type throughout the proposed trail network is shaley clay, which is the preferable of the two soil types due to its better dry weather riding characteristics and lower maintenance needs.

8.3.7 Regional positioning

The project is positioned very well regionally, with limited competition in the surrounding area. While there are other riding opportunities in the surrounding area, none possess the key strengths of the Mogo project, particularly in terms of the Wandera wilderness trail project.

8.4 Key Weaknesses

The following are key weaknesses of the project. *Dirt Art* has worked to offset these weaknesses by leveraging the strengths and competitive advantages of the project.

8.4.1 Elevation Opportunity

While the Wandera Mountain provides 567m of elevation range, the majority of the project area provides an elevation range of <150m. *Dirt Art* has worked to maximise elevation through the main trail network by targeting high points for development of a wide variety of climbing and descending trails that maximise available elevation.

Dirt Art do not consider elevation availability a major project weakness in the final trail network design concept.

8.4.2 Vegetation Damage

The Mogo and Batemans Bay areas were severely fire damaged in recent times. The landscape throughout the trail development area has been intensively burnt, leaving no understory and highly-damaged mature trees.

While the project area does not offer an intact forest, the fires have opened up significant viewpoints, which provide views across the area.

Dirt Art do not believe the burnt forest detracts significantly from the riding experience. If anything, it was noted the lack of vegetation around the current Deep Creek Dam loop provides some positive attributes currently as it allows riders to gain picturesque views towards coastline and also down to the dam itself.

8.5 Key Opportunities

The project has a number of key opportunities, which relate to the landscape, infrastructure and mountain bike destination market. These key opportunities have provided the basis for developing the concept designs for the trail network.

8.5.1 High Quality Trail Riding

The area provides excellent potential for high-quality trail and short-format enduro riding. The rolling hills and high-quality soils will allow for establishment of highly-enjoyable network of trails that cater to a trail and enduro audience. The natural topography is conducive to creating trails of interest and unique in respects to the development area's proximity to the coastline. The Deep Creek Dam trail development area currently offers stunning ocean views while the dam provides a key reference point for those trying to find their bearings while traversing the current array of trails.

8.5.2 Integration with Towns

The project offers significant opportunity to develop a genuine ride-in/ride-out experience. Riders will be able to ride from their accommodation into and out of the trail network, which will prove highly-appealing for visiting riders. This format will also maximise economic benefit opportunities as it attracts visitors to stay for several days/nights with the abundance of nearby activities in existing coastal towns and villages. The thriving tourism offerings in the area creates a complementary asset to any future trail developments.

8.6 Key Threats

8.6.1 New Competitors

While there is little current competition in the mountain bike destination marketplace, especially along the NSW coastline, there are a number of emerging and potential developments that may pose potential threats to the project.

- **Glenworth Valley Bike Park**
 - Location: Glenworth Valley, Central Coast NSW
 - Access: Private / Commercial
 - Development:
 - Gravity / Freeride Trails
 - Cross-Country Trails
 - Commercial Shuttle
 - Future Chairlift
 - Accommodation
 - Retail / Amenities
 - Status: Planning Approvals

The development pathway of the Glenworth Valley Bike Park remains unknown, with the project opening now delayed twice. The proponents have yet to announce a third project opening date, and it is understood that planning approvals are yet to be finalised. Given the bike park focus, and lack of certainty around the project proceeding, it is not perceived to be a major threat to the Mogo Project.

- **Cringila Hills Mountain Bike Park**
 - Location: Wollongong, NSW
 - Access: Public (free) / Council
 - Development:
 - All mountain, cross-country, and freeride trails
 - Skills Area
 - Pump Track
 - Status: Preliminary Construction Tender

The Cringila Hills Project is a small, community-focused urban bike park, which does not compete with the Mogo Project.

- **Belrose Bike Park**
 - Location: Sydney, NSW
 - Access: Public (free) / Council
 - Development:
 - Gravity / Freeride Trails
 - Dirt Jumps
 - Skills Area
 - Pump Track
 - Status: Under Construction (Due for completion late-2020)

The Belrose Bike Park is an urban bike park with a jump trail and jump park focus. The park caters to a different audience to the Mogo project so is not seen as an emerging threat.

9 Site Analysis

9.1 Location

Mogo is located south of Batemans Bay and north of Moruya on the south coast of New South Wales. The town is approximately 4hrs drive from Sydney and 2hrs drive from Canberra. The heritage town is administered by Eurobodalla Shire Council and has long been a popular tourist destination. Mogo receives significant transient visitation from tourists passing through on the Princess Highway.

Mogo is an established tourism destination, with a number of existing tourism assets such as the Mogo Zoo. The town has received a large amount of media attention in recent times due to the devastating impacts of the recent bush fires.

The town itself is serviced by local businesses with a petrol station, bakery, cafes, and several giftshops. The eclectic mix of weatherboard cottages presents a unique identity to the small town and subsequently attracts passersby to stop and utilise the local offerings, often as a rest stop in their travels to destinations north or south of Mogo.

9.1.1 Location Map



9.2 Topography

Average slopes	20-40%
----------------	--------

The lower slopes of the target area are predominantly composed of rolling hills (20-40% slopes), though higher elevations feature some steep slopes (40%+).

9.3 Geology

The target area has two distinct geologies. Maulbrooks Road features a mix of shaley clay and some areas of decomposed granite. Granite areas feature a number of rock features, including some sections of large bed rock and rock formations. The Deep Creek Dam area features a shaley clay material.

All soil types in the target area provide for good trail development opportunities. Areas with shaley clay will provide a more sustainable trail development opportunity, with more scope to develop mineral earth trail features such as berms and jumps.

9.4 Climate

Average annual rainfall	917mm (www.bom.gov.au)
-------------------------	--

The climate in the target area is generally mild, with summer temperatures in the mid to high twenties, and winter temperatures in the mid to high teens. Annual rainfall is spread relatively evenly across the year, which provides consistent moisture for trails without marked seasonal rainfall and drought.

The mild climate and consistent, yet relatively low rainfall provides an excellent climate for year-round riding.

9.5 Values Analysis

The target area has a range of social, environmental and cultural values. Notably, a detailed environmental and cultural heritage assessment of individual trails in the proposed network has not been undertaken at this point in time. These assessments will form an important component of the next stage of the project.

This report section will provide a summary and preliminary analysis of these values.

9.5.1 Natural Values

The natural values of the target area have been severely affected by recent bushfire activities across essentially the whole proposed development area. While these areas have been fire-affected, strong natural values will remain in areas. A comprehensive assessment will be required as part of the approvals process for any trail formalisation and/or new trail development.

Natural values to be assessed in the next stage of the project include, but not limited to, the following:

- **Biodiversity**
 - Biodiversity values
 - Critical EEC
 - Priority Fauna Habitats
 - Threatened Fauna and Flora (NSW & EPBC)
 - Vegetation
 - Wetlands
 - Directory of Important Wetlands of Australia (DIWA)

- **Soil and Water**
 - Soils
 - Great Soil Group (GSG) Type
 - Erosional
 - Steep and highly erodible
 - Waterbodies
 - Waterways
 - Flood risk
 - Riparian zones
 - Estuary drainage catchments

9.5.2 Social Values

A number of social activities and values are present in the target area. Notably, shared use appears minimal on the current informal trail systems. While it is not predicted that there will be major social value conflicts, notably existing social values include;

- Walking
- Mountain biking
- Dog walking
- Trail running
- Geocaching
- Orienteering
- Horse riding

While no conflict between trail users is anticipated as a result of this project, extensive consultation between bushland user groups will be required to ensure all users are adequately considered.

9.5.3 Cultural Values

9.5.3.1 *Indigenous Cultural Values*

While assessments for cultural heritage values has yet to be undertaken, it is anticipated that there will be strong cultural values across some areas of the site. Notably, all current proposed trail alignments are conceptual only. Final trail alignments should be determined with liaison with the local indigenous community.

A comprehensive Aboriginal cultural heritage assessment will be required as part of the approvals process for any trail formalization and/or new trail development.

9.5.3.2 *European Cultural Values*

No known European cultural values have been encountered during the concept design process. Further investigation will be required during the detailed design process.

A comprehensive cultural heritage assessment will be required as part of the approvals process for any trail formalization and/or new trail development.

10 Consultation

10.1 Overview

Consultation for the project will be undertaken in three stages;

- Stage 1: Needs Analysis
- Stage 2: Concept Review
- Stage 3: Targeted Consultation

Needs Analysis provides context for the project, setting the tone for the development of project concepts. Concept Review is the major opportunity for a wide range of stakeholders and the broader community to provide input into the proposed master plan for the project. The final consultation stage, Targeted Consultation involves targeted consultation on more detailed aspects of the project as required.

During the development of this project, a number of groups, organisations, individuals and the broader community have been consulted with. Consultation included the below key groups;

- Community groups
- Key stakeholder groups

Consultation has been undertaken in face-to-face meetings, via phone and email. A summary of consultation can be found below.

10.2 Consultation Session Summary

10.2.1 Eurobodalla Shire Council

The ESC are the proponents of the project, and strongly support the development of a mountain bike destination that focuses on tourism and economic development. The ESC has managed the project, and thus *Dirt Art* has liaised with the agency throughout the development of this draft report, with a summary of key discussions below;

- Strong supporters of the project
- Discussion around the current lease and license situation with FCNSW and Crown Lands

10.2.1.1 Mogo Adventure Trails Hub Draft Masterplan – Submissions Summary

Sixty submissions were received during the formal exhibition period for the Mogo Adventure Trails Hub Draft Masterplan. There was strong support for the draft Plan in the submissions with the primary reasons relating to the potential for greater visitor attraction to Mogo and surrounding towns and villages.

The three most common reasons identified in the submissions for the support of the draft Plan are listed below:

1. The potential of the Mt Wandera as a signature trail and unique trail experience for the Mogo Adventure Trails Hub;
2. Economic benefit to the region; and
3. Enthusiasm and support for Council to delivery this nationally-significant trail destination.

Concerns raised during the submissions process are summarised with a brief response provided below:

- Greater consideration for other trail-users (including trail bikes and horse riders)- *the new proposed trails do not detract from the experience of other authorised users of the area, or remove trail access for any other authorised trail users. Dirt Art has worked to minimise intersections and other interactions with existing trails in the area. Where appropriate, shared-use has been suggested for the new proposed trails. Shared-use is not recommended on descending mountain bike trails;*
- Additional car parking provision- *the need for parking at each access points will be further assessed during the next design and approvals stage of the project;*
- Safety and risk management (particularly potential conflict between trail users)- *Safety and risk management has been addressed within this report (Section 16.4) and;*
- Environmental and cultural issues- *Environmental and cultural values will be further assessed during the design and approvals stage of the project, with trail alignments to be adjusted if required to avoid areas of cultural and/or environmental significance where required.*

10.2.2 Forestry Corporation of NSW

The FCNSW has been liaised with directly by ESC throughout the project, with ongoing consultation expected as the project progresses.

10.2.3 Stakeholder Groups / Local Users / Residents

A stakeholder workshop was hosted by Council and *Dirt Art* at Moruya Golf Club on 18 February 2020. There was a total of 40 attendees representing the local mountain biking community, local businesses, and key stakeholders. The workshop was a continuation of previous consultation undertaken by TRC Tourism in 2019.

Dirt Art covered a number of open topics relating to the locality to help identify the key opportunities and constraints that stakeholders saw within Mogo and surrounding areas. The exercise was particularly useful in bringing to light the rich local knowledge available within the collective and the subtle nuances / opportunities that would otherwise be difficult to ascertain in other methods of research such as a desktop mapping process.

The following topics were discussed in the workshop and the resulting feedback from various stakeholders listed below:

10.2.3.1 Key Network Strengths

- Location
 - Close to the coast and established tourist destinations
 - Proximity to Sydney and Canberra
 - Major thoroughfare for travellers passing through on the Princess Highway
- Weather
 - All-year around riding due to mild climate, especially in the colder months where places like Canberra become less appealing to ride
 - Local soil types are conducive to riding in a broad range of weather conditions
- Trails
 - Volume of trails

- Adventure aspect of trails – i.e. takes the rider on a journey and provides a remote wilderness experience
- Prior to the fires, the trails took riders into some beautiful natural areas with unique vegetation types
- The Deep Creek Dam trail network is central to major town centres and easily accessible from adjoining suburbs
- Well connected to hubs with previous history/experience in running mountain biking events
- Two separate trail networks that offer different experiences: Deep Creek Dam and Maulbrooks Road
- Convenience to have a 1-1.5hr ride loop

10.2.3.2 Key Weaknesses

- Navigation
 - Difficult to navigate some parts of the existing network
 - Signage and trailhead maps required (old map was burnt in the fires)
- Trail Maintenance
 - Overgrown trails – mainly applicable to the Maulbrooks Road network
 - Entirely dependent on an informal volunteer maintenance group
 - Residents that have recently moved the area are not part of the discreet group that maintains the local trails
 - Volunteers are hesitant to organise or advertise public maintenance days on informal trails
 - Maintenance days needs more organised and focused on upgrading all trails not just individuals' favourites
- Trail Offerings
 - Lack of trail variety
 - No rocky technical trails
 - No free/jump trails
 - No beginner-specific trails
 - Skills progression
 - Existing trails are intimidating to newcomers to the sport primarily due to the narrow trail tread
 - Strong focus on intermediate (Blue Square) difficulty trails in the current network
 - Lack of a dedicated skills area / park
- Clearing from Forestry affecting trails
- Connectivity
 - Trail development has historically been due to convenience with no one ever stopping to look at the broader picture for trails
 - No easy link for families into town
 - Difficult linking trails to Tomakin and other coastal towns
 - More than a single trail hub with many local riders accessing the Deep Creek Dam network via a multitude of entrances
 - Connectivity with the beach to the trails to allow families to have more flexibility to schedule in rides with beach activities

10.2.3.3 Current User Groups

- Local mountain bikers
- Visiting mountain bikers
 - Canberra (2hrs)
 - Wollongong (3hrs)
 - Sydney (4hrs)

- Walkers, trail runners, horse riders, and motorbikes
- Trail use has increased noticeably in popularity in recent years

10.2.3.4 Key Events

- Rocky Trail Entertainment has run mountain bike races/events in the past
- Lack of definitive trail style to draw major interest
- Not enough volume and diversity of trail to provide for events
- Opportunity to utilise the trail network for school sport/activity
 - Licensing and legality of the trails is an issue for events
- Adaptive cyclists need to be considered
- Lack of mobile coverage, especially in the Maulbrook Road area, a major factor in meeting the technological demands of events

10.2.3.5 Future Potential

- Trail Opportunities
 - Beginner-orientated trails that cater for introducing new riders to mountain biking
 - Gravity focused descents with flow/freeride features such as jumps and berms
 - Provision of trails that cater for a broader spectrum of trail difficulties
 - Current networks are predominately catering for intermediate riders (Blue Square difficulty)
- Development Sites
 - Lookout at the top of Apex Lookout over Batemans Bay
 - Granite and rock slabs, utilise the unique terrain/features
 - Connection between Mitchells and the Dam Loop, proper climbing track with a connection/link
 - Mogo Zoo through to Batemans Bay – more trails/connections
 - Greater diversity of trails
 - Shuttle accessed trails
 - Opportunities for views / vistas
 - Mogo Zoo – can trails be integrated into the existing facility
- Infrastructure
 - Trail signage / maps
 - Shower facilities / amenities for visiting users
 - Utilise surrounding towns to provide accommodation and complimentary activities
 - Establish new off-road links to the trail networks from surrounding suburbs
- Events
 - Triathlon (on/off road)
 - Adventure racing
 - Trail running
 - Mountain bike:
 - Club races
 - Regional / National significant races
 - Social events

10.2.4 Commercial operators and bike stores

Representatives from the commercial sector were present at the initial community consultation for the project. Further consultation with these groups and individuals will occur as the project progresses.

11 Existing Trails Overview

11.1 Overview

Dirt Art has undertaken an in-field assessment of all formal trails in the target area. Including commonly used fire trails, there is approximately 35km of formal trails utilised by mountain bikes in the region.

Notably, the vast majority of the current trail network has been severely affected by recent fire activity. The fires have rendered some trails un-rideable and, in some instances, indistinguishable. For these reasons, *Dirt Art* has been unable to assess much of the existing trail network.

Beyond being fire-affected, the trail network has a number of generally consistent issues, including but not limited to;

- Inadequate trail maintenance
- Poor trail connectivity
- Limited trail diversity
- Formal trails are often lacking the dynamics and flow sought after by riders

The above issues are in line with the feedback received thus far through stakeholder and public consultation.

11.2 Access Nodes

Currently there is a reasonable level of access dispersal, with no notable primary access node for either trail network. Anecdotally, it would appear that many trail users are accessing the Deep Creek Dam trail network via Batemans Bay and surrounding communities. It would appear that the majority of users at Maulbrooks road are accessing the trails via vehicle.

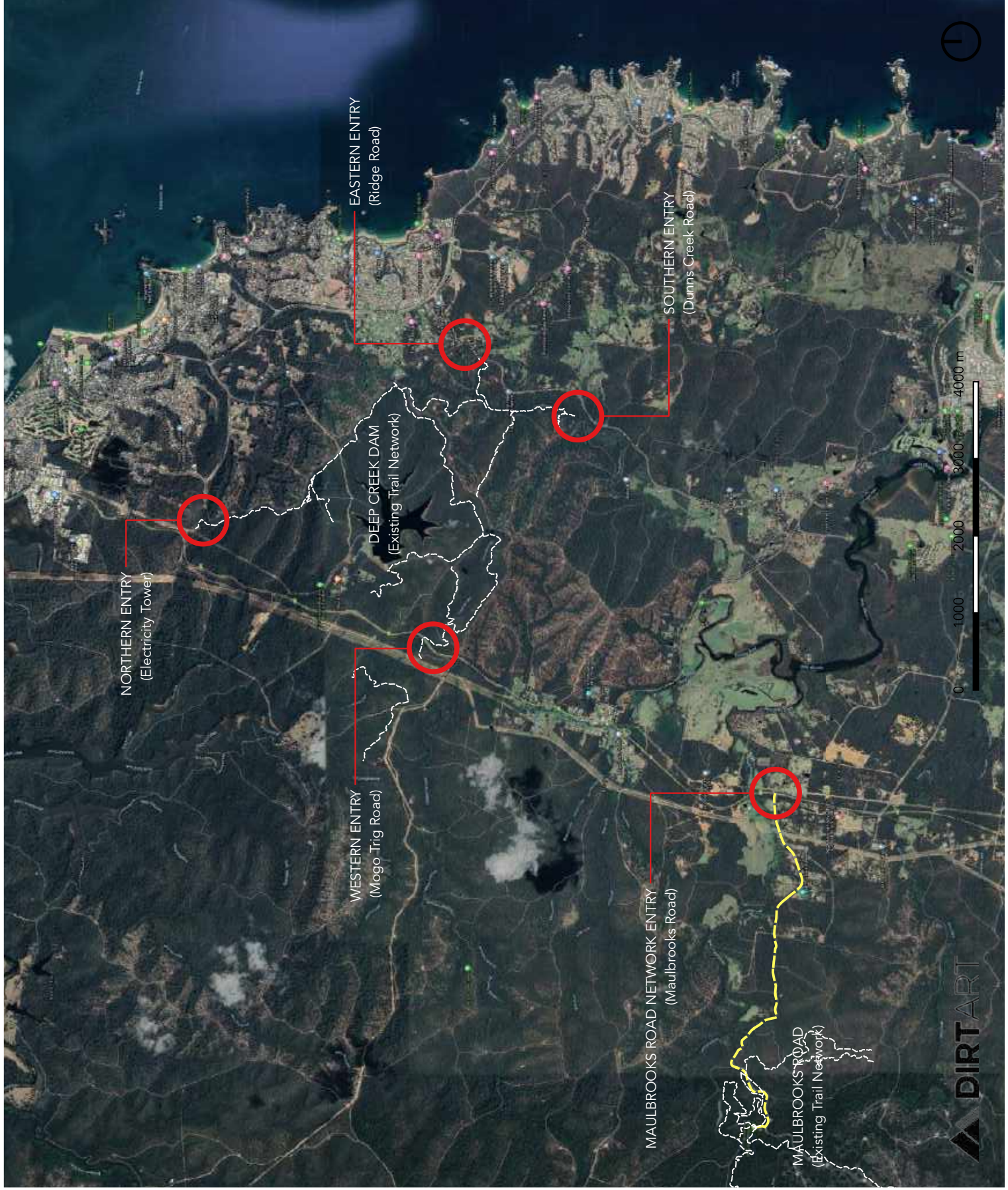
A map of existing access nodes can be found over the page.

Mogo MTB Masterplan Project

ACCESS NODES MAP

11.03.20

- Existing Trails
- Mt Wandera
- Maulbrooks Road



11.3 Trail Map

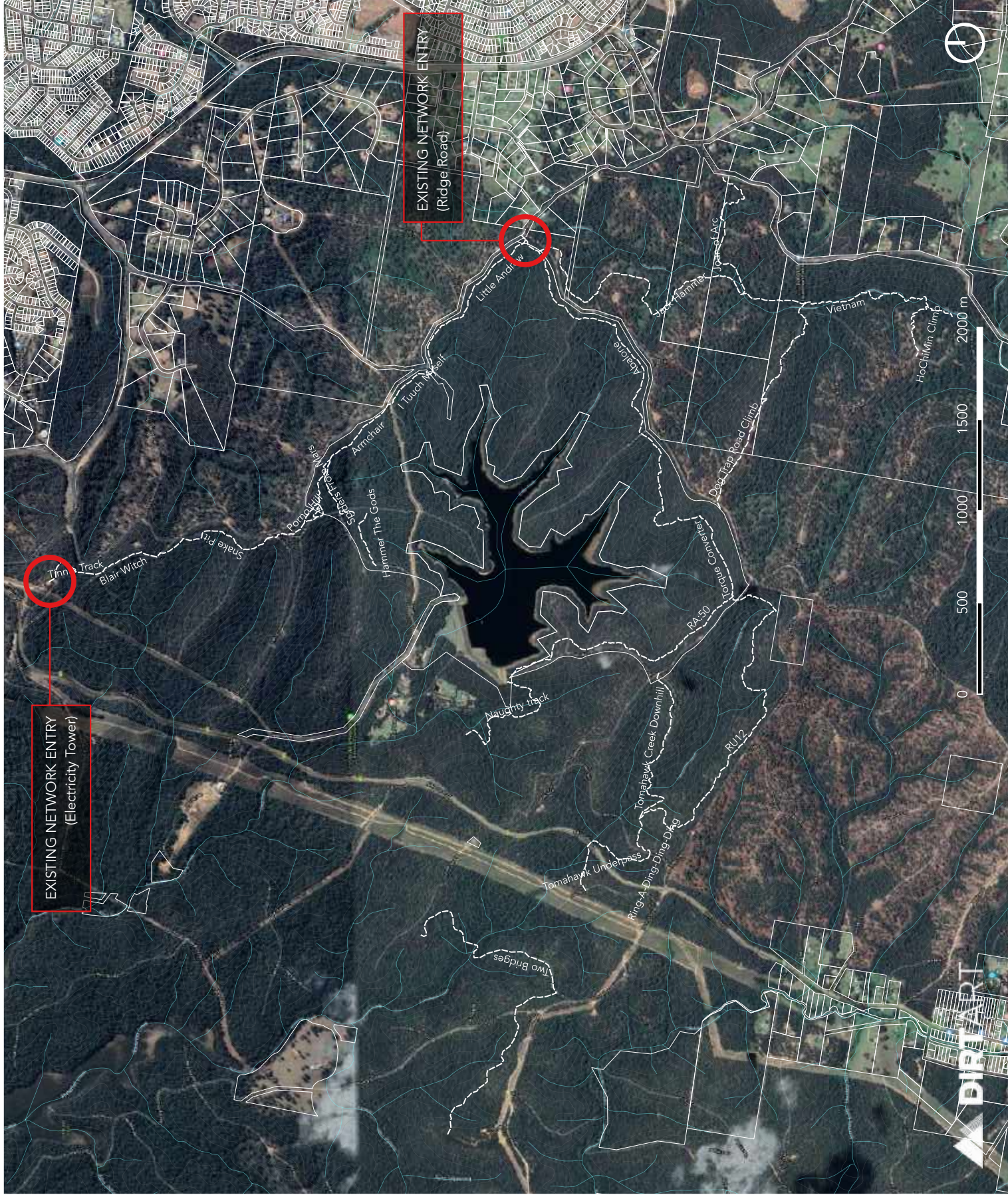
A map of existing trails can be found over the page.

Mogo MTB Masterplan Project

EXISTING TRAILS
DEEP CREEK DAM

11.03.20

- Existing Trails
- Existing Trails
- hydroline
- Lot



Mogo MTB Masterplan Project

EXISTING TRAILS
MAULBROOKS RD

11.03.20

- Existing Trails
- Existing Trails
- hydroline
- Lot



11.4 Auditing Process

Dirt Art employ the below methodology to assess all trails. The step-by-step process provides a broad analysis of the trails key characteristics and includes both a desktop and in field assessment.

1. Desktop analysis- This stage involves a desktop analysis of the trail, with the view to establishing environmental values, gradients, and fit within the broader trail network (if relevant). Desktop analysis will generally establish larger, more fundamental flaws in the trail.
2. In field analysis- All trails are reviewed in detail during a field assessment. The assessment may be completed on foot or on bicycle. The in-field analysis aims to establish trail issues such as; alignment, drainage issues and safety concerns.
3. Network analysis- Using desktop and in field analysis, *Dirt Art* will assess the trails value to the broader trail network.
4. Signage analysis- *Dirt Art* will assess the adequacy and appropriateness of trail signage during in field analysis.
5. Budget scope of works- The trail audit will conclude with an overview of key works required (if any) and a suggested market rate budget for these works

11.5 Aims and Objectives

In undertaking any trail audit, *Dirt Art* are working to the following key objectives;

1. Improve user safety- trails should wherever possible be predictable, and minimise the consequence should a crash occur. Trails must need the criteria for their difficulty grading.
2. Improve the trail experience- trails should provide high-quality user experience.
3. Improve environmental performance of the trail- trails should minimise environmental impacts, including minimising vegetation impact and erosion.
4. Provide objective advice around trail closure/s and network rationalisation- trail networks should be functional and limit duplication and braiding. Low quality trails that are not practical to repair should be closed and rehabilitated.
5. Provide advice that allows land managers to effectively invest in priority trail projects- the trails audit will assist land managers in programing and budgeting priority trail upgrades.

11.6 Ranking Criteria

11.6.1 Overview

To provide objectivity and clarity to the trail audit process, *Dirt Art* has developed an attribute ranking system for trail auditing. Each trail audited is ranked against 10 key criteria, which assess its performance against a wide range of qualitative and quantitative metrics. These 10 criteria are provided a score of 1-5, which results in a total score from 50 for each trail.

Dirt Art recommend that trails scoring less than 25 should in most cases not be included in a formalised trail network.

11.7 Overview of Ranking Criteria

Sustainability: This criteria refers to the sustainability of the trail in the short, mid and long term. The trail is assessed for its capacity to manage water and rider traffic, with a focus on gradient versus soil type and rider behaviour. The capacity of the site to manage the trail use in the local climate is also considered. A low sustainability score does not necessarily mean that a trail should be closed, rather the sustainability issues in some cases may be easily and cost effectively addressed.

Ride Experience: This criteria refers to the trails capacity to provide a high-quality riding experience. This qualitative criteria assesses the ride quality across a wide range of trail types- no one trail style is considered to provide a higher quality experience than any other trail style.

Broad market appeal: This criteria refers to the capacity for the trail to cater for a broad market of riders. A low score for this criteria does not necessarily mean a trail is low quality, rather that the trail will cater only for a smaller market segment (notably small market segments may translate to strong visitation if that market segment is poorly catered for in the market)

Environmental Experience: This criteria refers to the environmental experience that the trail provides for the user. A trail with a higher environmental experience ranking may include unique and appealing vegetation, views points and vistas, rivers and creeks and related attributes. A weaker environmental experience may include heavily disturbed areas, generic vegetation types and logged areas. This criteria does not reflect a trails compatibility with natural values.

Value to Network: This criteria ranks the trail on the value it adds to the broader trail network. Trails that provide key connectivity and/or provide diversity in the network will score higher, whereas trails that are duplicated in alignment and style will generally score lower.

Environmental compatibility: This criteria refers to the compatibility of the trail with the natural values of the site. Trails that have a significant detrimental impact on natural values will score low, whereas trails that do not impact on natural values will score higher. This criteria also analyses a broad spectrum of natural values, including rare and endangered flora and fauna on site.

Notably, this criteria has been assessed at a high-level only during this stage of the project. Further assessments will be undertaken during the next stage/s of the project, with trail alignments adjusted as required.

Social Compatibility: This criteria assesses the trails impact on the social values of the site. Trails that negatively impact on other trails and user groups, and/or trails that impact negatively on local residences will score low. Trails that do not negatively affect any other users or residents will score highly.

Heritage Compatibility: This criteria assesses the impact the trail may have on any known Indigenous or European cultural heritage values of the site. Importantly, this criteria only assesses against known rather than potential values.

Notably, this criteria has been assessed at a high-level only during this stage of the project. Further assessments will be undertaken during the next stage/s of the project, with trail alignments adjusted as required.

Lifecycle Cost Rating: This criteria assesses the lifecycle costs of the trail. Trails will score low where lifecycle costs are higher, which may be due to a number of factors such as poor soil types, poor maintenance access and climatic factors.

Emergency Access: This criteria assesses the complexity of emergency access to the site, should it be required. A range of access methodologies are considered, including on trail, road and via air.

11.8 Trails Assessed – Deep Creek Dam

11.8.1 Overview

Although the trails in Deep Creek Dam network sustained significant damage from the recent fires, they have fared well in comparison to their neighbouring trails at Maulbrooks Road. This is partly to the clean-up efforts by local trail builders witnessed along the primary loop around the dam. There was evidence of large fallen trees cleared from the trail tread and community members recounted stories of group efforts immediately post fires to clear the dam loop of debris that had fallen and blocked the trail since.

The trails assessed in this network were primarily focused around the primary loop around Deep Creek Dam. The majority of the trails in the periphery and adjoining areas were not distinguishable at the time of our field investigations as documented in Figure 1 below.

The general character of the trails was noted as being well built along sound alignments that typically ran parallel to existing access roads. The contouring trails follow mellow gradients with a good mix of flowing descents linked into short undulating climbs. The style of trails akin to this network would undoubtedly appeal to a broad rider demographic given the naturally flowing trail dynamic being suited to a range of riding abilities. Ride faster and the trail becomes instantly more challenging. Ride slower and the trail becomes infinity more manageable for less confident riders with no major technical features to note other than the occasional tighter radius corner.

Dirt Art noted the lack of vegetation has most definitely had an effect on the ability of the rider to look much further ahead than usual and help predict the upcoming demands of the trail. The reduction in trail side vegetation has likely opened up trail corridors and reduced the perceived technicality of some trails in the network.



Figure 2 – Example of a barely distinguishable trail



Figure 3 Example of an existing trail that has been cleared

11.8.2 Trails Not Assessed

The following trails were not assessed due to extensive bushfire damage with most trail being barely distinguishable.

Trail Name	Difficulty	Length	Status
Tinnie	Blue Square	309m	Informal
Blair Witch	Blue Square	309m	Informal
Snake Pit	Blue Square	712m	Informal
Wombat Loop	Green Circle	270m	Informal
Jack Hammer	Blue Square	2,162	Informal
Joan of Arc	Blue Square	909m	Informal
Vietnam	Blue Square	999m	Informal
Ho Chi Min Climb	Blue Square	401m	Informal
Dog Trap Road Climb	Black Diamond	1399m	Informal
Naughty Track	Blue Square	931m	Informal
RU12	Blue Square	2,019m	Informal
Tomahawk Underpass	Blue Square	668m	Informal
Two Bridges	Blue Square	2,331m	Informal
Mitchells	Blue Square	1,728m	Informal
Ring-A-Ding-Ding-Ding	Blue Square	505m	Informal

11.8.3 Trails Assessed

11.8.3.1 Porno Hill

Criteria	Rating				
Sustainability					
Ride Experience					
Broad Market Appeal					
Environmental Experience					
Value to Network					
Environmental Compatibility					
Social Compatibility					
Heritage Compatibility					
Life Cycle Cost Rating					
Emergency Access					

Total Score	40/50
--------------------	-------

Key Stats	
Length	696m
TDRS	Blue Square
Style	Technical
Formalisation status	Informal
Recommendation	Retain and upgrade
Weather notes	Recent rain

Trail Overview

Porno Hill is a short linking trail, providing connectivity to the dam trails from Batemans Bay. The trail provides useful connectivity and should be retained and formalised.

11.8.3.2 Spiders from Mars

Criteria	Rating				
Sustainability					
Ride Experience					
Broad Market Appeal					
Environmental Experience					
Value to Network					
Environmental Compatibility					
Social Compatibility					
Heritage Compatibility					
Life Cycle Cost Rating					
Emergency Access					

Total Score	34/50
--------------------	-------

Key Stats	
Length	388m
TDRS	Blue Square
Style	Technical
Formalisation status	Informal
Recommendation	Retain and upgrade
Weather notes	Recent rain

Trail Overview

Spiders from Mars is predominately used as a climbing trail to gain access to Armchair when riding from the dam wall. The trail follows a generally sound alignment, contouring along a mellow gradients after a steep pinch at the start.

The trail forms a critical component of the main loop in the area, and as such should be upgraded and formalised.

11.8.3.3 Hammer from Gods

Criteria	Rating				
Sustainability					
Ride Experience					
Broad Market Appeal					
Environmental Experience					
Value to Network					
Environmental Compatibility					
Social Compatibility					
Heritage Compatibility					
Life Cycle Cost Rating					
Emergency Access					

Total Score	35/50
--------------------	-------

Key Stats	
Length	339m
TDRS	Blue Square
Style	Technical
Formalisation status	Informal
Recommendation	Retain and upgrade
Weather notes	Recent rain

Trail Overview

Hammer of the Gods is a component of the main dam loop. The trail provides a good quality riding experience on a generally sustainable and functional trail alignment.

The trail forms a critical component of the main loop in the area, and as such should be upgraded and formalised.

11.8.3.4 Armchair

Criteria	Rating				
Sustainability					
Ride Experience					
Broad Market Appeal					
Environmental Experience					
Value to Network					
Environmental Compatibility					
Social Compatibility					
Heritage Compatibility					
Life Cycle Cost Rating					
Emergency Access					

Total Score	45/50
--------------------	-------

Key Stats	
Length	519m
TDRS	Blue Square
Style	Technical
Formalisation status	Informal
Recommendation	Retain and upgrade
Weather notes	Recent rain

Trail Overview

Armchair is a descending trail section that forms part of the main dam loop circuit. The trail provides a good quality riding experience on a generally sustainable and functional trail alignment.

The trail forms a critical component of the main loop in the area, and as such should be upgraded and formalised.

11.8.3.5 I Tuuch Myself

Criteria	Rating				
Sustainability					
Ride Experience					
Broad Market Appeal					
Environmental Experience					
Value to Network					
Environmental Compatibility					
Social Compatibility					
Heritage Compatibility					
Life Cycle Cost Rating					
Emergency Access					

Total Score	45/50
--------------------	-------

Key Stats	
Length	434m
TDRS	Blue Square
Style	Technical
Formalisation status	Informal
Recommendation	Retain and upgrade
Weather notes	Recent rain

Trail Overview

I Tuuch Myself is a predominantly contouring section of trail that forms part of the main dam loop. The trail provides a good quality riding experience on a generally sustainable and functional trail alignment.

The trail forms a critical component of the main loop in the area, and as such should be upgraded and formalised.

11.8.3.6 Little Andrew

Criteria	Rating				
Sustainability					
Ride Experience					
Broad Market Appeal					
Environmental Experience					
Value to Network					
Environmental Compatibility					
Social Compatibility					
Heritage Compatibility					
Life Cycle Cost Rating					
Emergency Access					

Total Score	45/50
--------------------	-------

Key Stats	
Length	842m
TDRS	Blue Square
Style	Technical
Formalisation status	Informal
Recommendation	Retain and upgrade
Weather notes	Recent rain

Trail Overview

Little Andrew is a predominantly contouring section of trail that forms part of the main dam loop. The trail provides a good quality riding experience on a generally sustainable and functional trail alignment.

The trail forms a critical component of the main loop in the area, and as such should be upgraded and formalised.

11.8.3.7 Abalone

Criteria	Rating				
Sustainability					
Ride Experience					
Broad Market Appeal					
Environmental Experience					
Value to Network					
Environmental Compatibility					
Social Compatibility					
Heritage Compatibility					
Life Cycle Cost Rating					
Emergency Access					

Total Score	45/50
--------------------	-------

Key Stats	
Length	2254m
TDRS	Blue Square
Style	Technical
Formalisation status	Informal
Recommendation	Retain and upgrade
Weather notes	Recent rain

Trail Overview

Abalone is a component of the main dam loop trail network. The trail is generally well-built and features a sustainable trail alignment.

The trail forms a critical component of the main loop in the area, and as such should be upgraded and formalised.

11.8.3.8 Torque Convertor

Criteria	Rating				
Sustainability					
Ride Experience					
Broad Market Appeal					
Environmental Experience					
Value to Network					
Environmental Compatibility					
Social Compatibility					
Heritage Compatibility					
Life Cycle Cost Rating					
Emergency Access					

Total Score	42/50
--------------------	-------

Key Stats	
Length	643m
TDRS	Blue Square
Style	Technical
Formalisation status	Informal
Recommendation	Retain and upgrade
Weather notes	Recent rain

Trail Overview

Torque Convertor is a gradually climbing trail that takes riders towards the summit of the high point of the area, Mogo Hill. The trail does feature some steeper sections that would benefit from minor realignment, though the trail generally follows a sound alignment.

The trail forms a critical component of the main loop in the area, and as such should be upgraded and formalised.

11.8.3.9 RA:50

Criteria	Rating				
Sustainability					
Ride Experience					
Broad Market Appeal					
Environmental Experience					
Value to Network					
Environmental Compatibility					
Social Compatibility					
Heritage Compatibility					
Life Cycle Cost Rating					
Emergency Access					

Total Score	44/50
--------------------	-------

Key Stats	
Length	1584m
TDRS	Blue Square
Style	Technical
Formalisation status	Informal
Recommendation	Retain and upgrade
Weather notes	Recent rain

Trail Overview

RA:50 is one of the primary descending trails in the network, also forming part of the main dam loop. The trail features a predominantly descending alignment, with a mostly sound alignment. The trail importantly captures the longest available descending opportunity in the area.

The trail forms a critical component of the main loop in the area, and as such should be upgraded and formalised.

11.9 Trails Assessed – Maulbrooks Road

11.9.1 Overview

The trails in this network were badly damaged by the recent fires in the region with the majority of trails barely distinguishable albeit a few remnants of old trail benches and occasional signage. The heavy rainfall experienced throughout NSW post-fires have further impacted the existing trails in a negative way, most notably causing a major section of the primary access road, Maulbrooks Road, to be washed away and rendering the route inaccessible at the time of *Dirt Art's* preliminary ground assessments.

The only exception to the above-mentioned current situation would be the popular Snake Track, which *Dirt Art* noted as having received recent repair works by an unnamed and passionate individual according to the local mountain bike community. The trail has a reputation of its own in the area and is largely revered by the community due to its highly desirable riding experience. *Dirt Art* attributes this primarily due to the fact the trail presents a freer flowing riding experience akin to those of modern day flow trails.



Figure 4 - Jeremadra Creek during site inspections



Figure 5 – The remnants of the Bump & Grind trail

11.9.2 Trails Not Assessed

The following trails were not assessed due to extensive bushfire damage with most trail being barely distinguishable.

Trail Name	Difficulty	Length	Status
Bump & Grind	Blue Square	1,641m	Informal
Boulder Track	Blue Square	2,545m	Informal
Old Maulbrooks Road	Green Circle	431m	Informal
Sound Check	Green Circle	700m	Informal
Rock and Roll	Blue Square	3,056m	Informal
No Encore	Blue Square	374mm	Informal
Kick Start	Green Circle	474m	Informal
Trailhead Track	Blue Square	1,072m	Informal
Loopy Track	Green Circle	1,642m	Informal
Dam Road Link	Blue Square	404m	Informal
Baby Bear	Blue Square	694m	Informal
Wiggies	Blue Square	545m	Informal
The Snake Track	Blue Square	1,684m	Informal
She Oak Track	Blue Square	1,908m	Informal
Swamp Track	Blue Square	1,331m	Informal
Thru Track	Blue Square	333m	Informal
AST	Blue Square	1,152m	Informal

11.9.3 Trails Assessed

11.9.3.1 The Snake Track

Criteria	Rating				
Sustainability	Blue	Blue	Blue	White	White
Ride Experience	Blue	Blue	Blue	Blue	White
Broad Market Appeal	Blue	Blue	Blue	Blue	White
Environmental Experience	Blue	Blue	White	White	White
Value to Network	Blue	Blue	Blue	Blue	White
Environmental Compatibility	Blue	Blue	White	White	White
Social Compatibility	Blue	Blue	Blue	White	White
Heritage Compatibility	Blue	Blue	Blue	White	White
Life Cycle Cost Rating	Blue	Blue	White	White	White
Emergency Access	Blue	Blue	Blue	Blue	White

Total Score	31/50
--------------------	-------

Key Stats	
Length	1684m
TDRS	Blue Square
Style	Flow
Formalisation status	Formalised
Recommendation	Retain and formalise
Weather notes	Recent rain

Trail Overview

The Snake Track is one of the most popular trails in the Maulbrooks Road trail network. The predominantly descending trail features a number of flow-focused trail features such as berms and rollers that are enjoyed by local riders.

While Maulbrooks Road is not a major focus of the first stage of the project, this trail is proposed to form the end of the Wandera Descent trails, so should be retained and upgraded.

12 New Development Concepts

12.1 Primary Trail Head

The primary access for the trail network is proposed to be directly from Mogo's town centre with a suite of less formal entrances along the peripheries of the network to foster the open synergy that currently exists with the urban areas that surround the project area to the east. Many local riders already access the Deep Creek Dam network via an assortment of informal trails or short off-road links between established suburban streets/roads along the coastline.

The Mogo trail head will act as the primary entry point to the trails. The entire trail network has been structured to begin and end at Mogo, with the proposed Wandera wilderness trail set to pass through the town, or optionally terminate on Mogo.

Facility	Current	New Proposed
Toilets		
Parking		
Bike wash		
Beginner trails		

Concept plans for the proposed Mogo Trail Head can be found over the page.

Mogo MTB Masterplan Project

TRAILHEAD CONCEPT MOGO

24.04.20

Proposed Trailhead	Proposed Trails
Trailhead Link	N1
Bike Hub	N20
Existing Carpark	Lot
Existing Toilet	



12.2 Secondary Trail Head

The secondary trail head for the area will be located at Batemans Bay. This trail head will only feature signage and minor infrastructure, providing a clear and functional entry/exit to the trails at Batemans Bay.

A concept plan for this trail head can be found over the page.

Mogo MTB Masterplan Project

TRAILHEAD
CONCEPT
BATEMANS BAY

12.11.20

Proposed Trailhead

- Bike Hub

Proposed Trails

- N14
- Lot



12.3 Existing Trails Upgrades and Realignment

12.3.1 Overview

The existing trail network within the target area has grown somewhat organically over the past several years, which has in some cases resulted in sub-optimal connectivity between trails. The existing trails are also generally not in optimal condition.

Dirt Art has proposed a works plan for the existing trails, which includes upgrades, realignments and trail closures. Details of the proposed works plan can be found below.

12.4 Existing Trails

12.4.1 General Works

12.4.1.1 Overview

Given the general condition of trails in the network, *Dirt Art* suggest that a general works program is undertaken across all trails proposed for formal conclusion in the trail network. This works program will bring all trails up to a modern, high-quality trail standard, consistent with relevant guidelines and standards, while significantly improving the riding experience and the sustainability of the trails.

The below works are proposed for all trails.

12.4.1.2 Re-Profiling

Dirt Art has suggested that all key existing trails undergo complete re-profiling, which will include realignment within +/- 5m. The fundamental principal of re-profiling will first be that all alignments must be correct or should be realigned as required. Re-profiling should then follow the below key principles;

1. Realign as required before upgrade
2. Maintain trail gradients inside 15% unless rock armouring is installed
3. Remove organic matter as required
4. Establish in-slope where required to maintain rider confidence and flow
5. Establish out slope for drainage as required in low spots. Culverts should not be installed unless strictly required
6. Utilise a rolling contour construction approach, which features frequent (~20m interval) gradient changes to shed water
7. Realign trails from wet areas before treating the wet area. Only treat the wet area if realignment not possible
8. Re-bench trails to a suitable depth
9. Utilise the excavator tracks and bucket to compact the trail surface and all batters and spoil
10. Utilise a full bench construction approach where possible
11. Avoid using burrow pits below 1,000mm depth unless strictly required
12. All burrow pits should minimise peripheral disturbance, and to be completely rehabilitated, including packing in organic material to fill the pit, and brushing over with organic material once filled

12.4.1.3 *Realigning Trails*

Trails should be realigned where required and possible. Realignment should be utilised for managing a range of issues, including but not limited to; steep gradients, wet areas, limited cross slope, network functionality and ride experience.

When realigning trails, the following methodology should be employed;

- All realignments should adhere to relevant approvals and conditions
- Wet areas should be avoided
- Riparian areas should be avoided
- Trails should be placed in areas with 20-40% cross slope where possible
- Closed trail sections should be aerated (breaking up of the trail tread), before being brushed in organic material

12.4.1.4 *Drainage*

Drainage should be managed wherever possible through the use of passive drainage measures, such as grade reversals to remove water from the trail. The use of culvert pipes should be avoided unless strictly necessary.

12.4.1.4.1 *Installing Rolling Contour Drainage Measures*

A genuine rolling contour trail type should be established, where gradient is reversed based on the following specifications;

- Gradient change should be installed every <20m
- Waterbars and knicks should be avoided
- A rolling contour high point should be a minimum of 500mm (target minimum is 1,000mm) above the low point
- The total length of the high point should be a minimum of 5m
- Low points should be out sloped with a minimum gradient of 5%
- Low points should allow water to be completely removed from the trail (avoiding construction off trail sumps/pits)

12.4.1.4.2 Culvert Pipe Installation

Wherever possible, culvert pipes should be avoided. Where strictly required, the following methodology should be employed;

- Minimum 150mm pipe size should be utilised
- Pipe intakes should be a minimum of 500mm from the trail edge
- A minimum sump hole size of 500mm x 500mm should be utilised, with a minimum depth of 250mm
- Pipe intakes should be raised a minimum of 100mm from the base of the sump
- Soil around the sump should be compacted extensively to minimise the risk of pipe blockage

12.5 Proposed New Trails

12.5.1 Overview

Approximately 125.6km of new trails have been proposed, which seek to address key trail network gaps, while capitalising on areas with generally low development constraints. The new proposed trails provide a diverse range of trail experiences, which cater for riders of all abilities.

The proposed development of 125.6km of new trails will add to the existing trail network proposed for formalisation, to create a total trail network of approximately 150km.

New trail concepts have focused on addressing local wants and needs but have also considered the attributes required for creating trail experiences that will appeal to visiting riders.

Development budgets for all proposed new trails can be found at **Appendix 1**.

12.5.2 Key Objectives

Key objectives when analysing priority new trail developments were as follows;

1. Address key network gaps
2. Develop a stacked loop trail system where possible
3. Provide opportunities for a wide range of riding styles, including shuttle uplift riding
4. Increase trail diversity
5. Place trails in areas with lower environmental values
6. Place trails in areas with reduced social conflicts
7. Place trails in areas that eliminate or reduce heritage conflicts
8. Place trails in areas that provide cost effective construction conditions

12.5.3 Trail Summaries- New Trails

Green	Blue	Black
66.3km	42.7km	11.3km
54%	35%	11%

12.5.4 Proposed New Trails Maps

Trail maps for all proposed new trails can be found over the page.

Mogo MTB Masterplan Project

TRAIL CONCEPT OVERVIEW MAP

11.03.20

