

# BINDOON MOUNTAIN BIKE PARK STAGE 1

## Cost Benefit Analysis

BBRF  
Bindoon Mountain Bike Park  
Stage 1 CBA  
FINAL  
February 2021

## REPORT

### Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
DraftA	Draft for client review	ZG	MW	MW	22/02/2021
Final	Final draft for submission	MW/ZG	TW	MW	27/02/2021

### Approval for issue

Mark Wallace



27 February 2021

This report was prepared by RPS within the terms of RPS' engagement with its client and in direct response to a scope of services. This report is supplied for the sole and specific purpose for use by RPS' client. The report does not account for any changes relating the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

Prepared by:

#### RPS

Mark Wallace  
Director - Strategy and Investment (Economics)

Level 4, HQ South  
520 Wickham Street  
Fortitude Valley QLD 4006

T +61 7 3539 9500  
E mark.wallace@rpsgroup.com.au

Prepared for:

#### Shire of Chittering

Euan Martin  
Economic Development Coordinator

PO Box 70,  
BINDOON WA 6502

T (08) 9576 4634  
E Euan.Martin@chittering.wa.gov.au

## Contents

<b>1</b>	<b>INTRODUCTION</b> .....	<b>1</b>
1.1	Background and Context.....	1
1.1.1	Strengthening the Bindoon Economy .....	1
1.2	Report Scope and Structure.....	2
1.3	Statistical Geography .....	2
1.4	Glossary and Abbreviations .....	4
<b>2</b>	<b>PROJECT CONTEXT</b> .....	<b>5</b>
2.1	Significance of a Mountain Bike Trail .....	5
2.2	The Case for Bindoon Mountain Bike Park Stage 1 .....	6
<b>3</b>	<b>COST BENEFIT ANALYSIS</b> .....	<b>9</b>
3.1	Methodology.....	9
3.1.1	Discount Rates.....	9
3.1.2	Cost of Capital Approach.....	9
3.1.3	Comparison with the Base Case .....	9
3.2	Costs .....	10
3.2.1	Capital Costs.....	10
3.2.2	Maintenance Costs .....	10
3.2.3	Summary of Costs .....	10
3.3	Benefits .....	11
3.3.1	Identified Benefits .....	11
3.3.2	Value of Benefits.....	12
3.4	Summary of Cost Benefit Assessment Results .....	12
3.5	Sensitivity Test .....	14
<b>4</b>	<b>ECONOMIC IMPACT ASSESSMENT</b> .....	<b>16</b>
4.1	Methodology and Approach .....	16
4.1.1	Criticisms of Impact Assessments .....	17
4.1.2	Adjustments to Improve EIA Reliability.....	17
4.2	Summary of Results .....	18
4.2.1	Construction.....	18
4.2.2	Ongoing Tourism Activity.....	18
<b>5</b>	<b>CONCLUSIONS</b> .....	<b>20</b>

## Tables

Table 1	Identified benefits and method of value calculation .....	11
Table 2	Present Value of Benefits (\$ million), by Discount Rate, 2021 to 2041 Bindoon Mountain Bike Park Stage 1 Project .....	12
<b>Table 3</b>	<b>CBA Results (\$ million), by Discount Rate, 2021 to 2041 Bindoon Mountain Bike Park Stage 1 Project</b> .....	<b>13</b>
Table 4	Construction Impacts (\$m), Bindoon Mountain Bike Trail, Wheatbelt .....	18
Table 5	Ongoing Tourism Expenditure Impacts (\$m), Annual and 20 Years, Bindoon Mountain Bike Trail, Wheatbelt .....	19
Table 6	Construction Cost Estimates, Bindoon Mountain Bike Trail Park Project Stage 1 .....	21

## Figures

Figure 1	Catchment Area - Chittering LGA.....	3
Figure 2:	Existing assets and identified gaps in WA mountain bike infrastructure .....	7
<b>Figure 3</b>	<b>Present Value, Capital and Maintenance Costs</b> .....	<b>10</b>

## REPORT

---

Figure 4	Share of Total Present Value of Identified Benefits at 7% Discount Rate .....	12
Figure 5	Net Present Values, by Discount Rate, Bindoon Mountain Bike Park Stage 1 .....	13
<b>Figure 6</b>	<b>Benefit Cost Ratios, by Discount Rate, Bindoon Mountain Bike Park Stage 1 Project .....</b>	<b>14</b>
<b>Figure 7</b>	<b>Benefit Cost Ratios, by Discount Rate, Core Scenario and Sensitivity Test, Bindoon Mountain Bike Park Stage 1 Project.....</b>	<b>14</b>

# 1 INTRODUCTION

## 1.1 Background and Context

The Shire of Chittering is situated amongst one of the most picturesque areas of Western Australia, offering a unique and diverse country lifestyle only one hour from Perth CBD. The Shire's administration centre is located in the town of Bindoon, situated on Great Northern Highway. Located in the southern portion of the Wheatbelt region, the main towns in the Shire include Bindoon, Chittering, Lower Chittering, Mooliabeenee, Muchea and Wannamal.

The Shire encompasses 121,900 hectares of land, of which around 1,500 hectares is protected Nature Reserve and 1,965 hectares is State Forest<sup>1</sup>. Bindoon is the seat of government for the Shire and is just 93km north of Perth. As a peri-urban local government the Shire of Chittering is experiencing a high population growth with an increase of 56.8% since 2005 (ABS 2015). The Shire accounted for 63 per cent of the Wheatbelt's total population growth over the 2006-2016 period<sup>2</sup>

In 2016, there were 5,472 people in the Shire, which was an increase of 24.84% on 2011 and 1,183 people lived in Bindoon, which was up 11.28% on 2011<sup>3</sup>. Reports (Report 11) from the Department of Planning Lands & Heritage (DPLH) show that the growth trend for the Shire is set to continue with the Estimated Residential Population (ERP) for 2031 being as high as 7610; that is an increase of over 27 per cent from 2016. Given the Shire exceeded even the highest DPLH projections for 2016 population levels (Band E), it is not unreasonable to expect that growth may exceed the forecast 7610 by 2031.

The main tourist attractions in the area are related to the natural assets of the Shire, being a variety of walking trails, drive trails, lakes, wildflowers and some heritage buildings. From a Western Australian tourism region perspective, Bindoon is assigned to the sub-tourism brand of 'Chittering Valley', as identified by Destination Perth and Tourism Western Australia.

Bindoon and the Shire, however, lack a flagship tourist attraction or catalyst to make it a destination as opposed to a stopover. This is particularly important to Bindoon, given the Bindoon Bypass that will take place as part of the Great Northern Highway roadworks and the need to capture visitors that will no longer be travelling through the town on their way elsewhere.

### 1.1.1 Strengthening the Bindoon Economy

In order to secure and strengthen the economy of the local community after the Bindoon bypass of the Great Northern Highway was first proposed, the Shire of Chittering began working on a number of integrated strategies which may help to provide for an enhanced economy and an increase in local job opportunities. The Shire has been developing plans which provide for both housing diversity, alternative accommodation, tourist infrastructure and a range of outdoor and adventure-based activities, which create Bindoon as a destination, not just as a place for people to travel through.

As a result of this recommendation and the Shire's need to grow tourism in Bindoon, the Shire prepared the Mountain Bike Trails Master Plan in April 2016 to identify opportunities within the Shire of Chittering to provide high quality mountain biking experiences that will have significant new tourism attraction potential. The Master Plan reviewed all relevant literature relating to mountain bike trails and parks, including the State Mountain Bike Strategy, WA Mountain Bike Management Guidelines, as well as that relating to the topography and nature of the Shire of Chittering in order to develop a plan for the Shire. The Plan identified a number of potential trail projects across the Shire of Chittering, including one that has since been undertaken, being the recently redeveloped Sussex Bend Jumps and Pump Track. The Plan intended to provide the Shire of Chittering with a number of facilities targeting a range of demographics and mountain

---

<sup>1</sup> Mountain Bike Trails Masterplan, Shire of Chittering, page 10

<sup>2</sup> Western Australian Planning Commission: Chittering Land Supply Assessment, June 2018

<sup>3</sup> Masterplan – find page

biking disciplines that would be implemented in stages and result in the Shire being a mountain biking destination. An urban mountain bike park in Bindoon was one of the projects identified by this Master Plan.

### 1.2 Report Scope and Structure

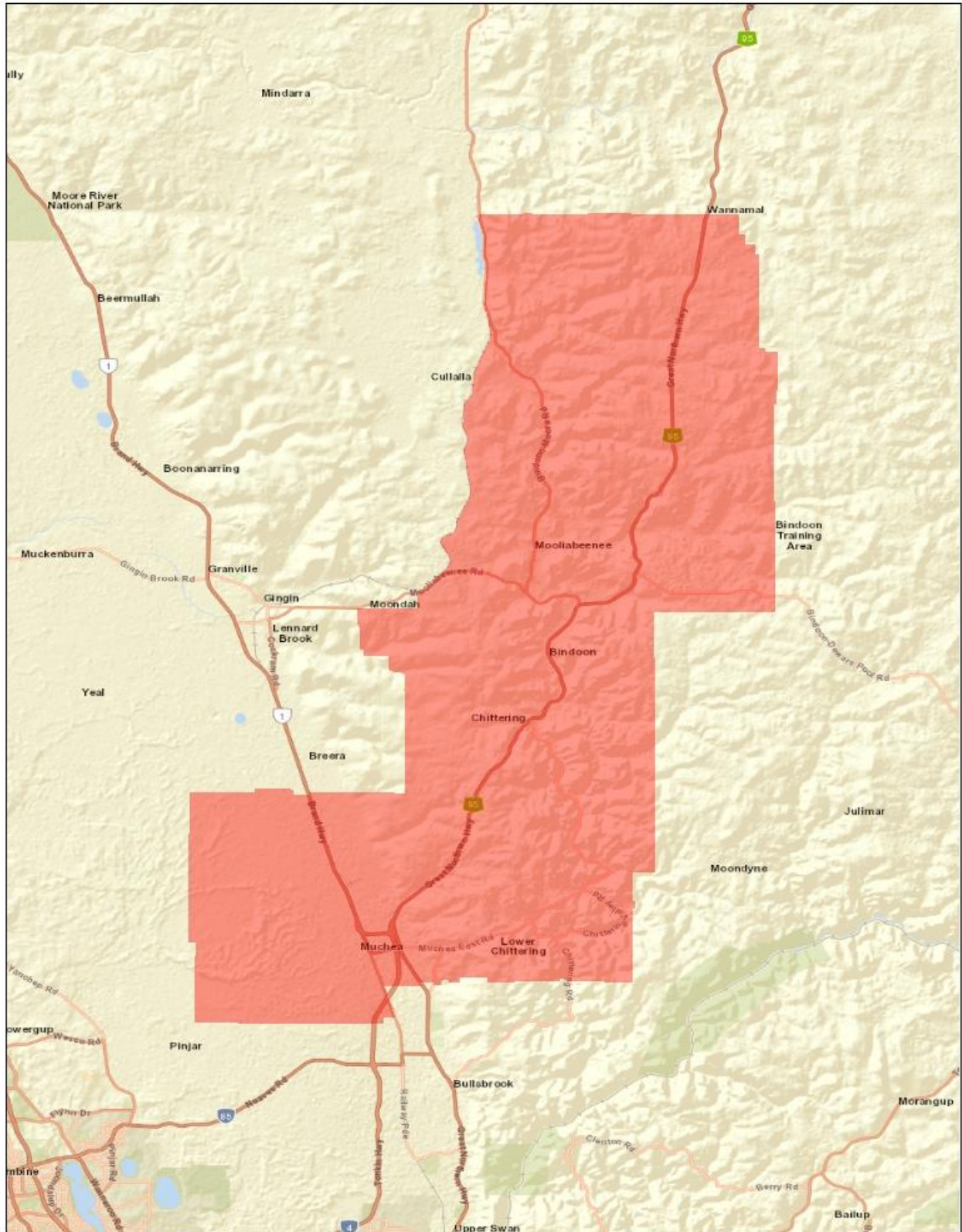
RPS was engaged by the Shire of Chittering to prepare a Cost Benefit Analysis report in support of a Building Better Regions Fund Application for the Bindoon Mountain Bike Park Stage 1.

This report is comprised of the following sections:

- **Introduction** – an overview of the background, scope and structure of the report;
- **Project Context** – outlining the key attributes and drivers of the project;
- **Cost Benefit Analysis** – outlining the methodology and assumptions for the analysis, the costs and benefits quantified and the results of the analysis across three discount rates;
- **Economic Impact Assessment** – based on regionalised economic input output transaction tables to assess the direct and indirect impacts of project expenditure; and
- **Conclusions and Recommendations** – outlining the key conclusions and recommendations relating to the project.

### 1.3 Statistical Geography

For the purpose of this assessment, all analysis is based on the Shire of Chittering Local Government Area.



0 5 10 Kilometres

**Legend**

 Chittering LGA

Scale: 1 : 350,000 @ A3 | Date: 11/02/2021 |

**Figure 1 Catchment Area - Chittering LGA**



## 1.4 Glossary and Abbreviations

The following table outlines key terms and abbreviations used throughout this report.

Term/Abbreviation	Definition
ABS	Australian Bureau of Statistics
BCR	Benefit Cost Ratio
CBA	Cost Benefit Assessment
EIA	Economic Impact Assessment
Externalities	External Costs or Benefits not captured in market prices
GVA	Gross Value Added
HRSC ITC	House of Representatives Standing Committee on Infrastructure, Transport and Cities
LGA	Local Government Area
MTP	Mountain Bike, Mountain Biking
NPV	Net Present Value
OBPR	Office of Best Practice Regulation
OECD	Organisation for Economic Co-operation and Development
SA2	Statistical Area 2
SIA	Social Impact Assessment
YTD	Year to date



## 2 PROJECT CONTEXT

### 2.1 Significance of a Mountain Bike Trail

A feasibility study conducted on this proposed project found that, “the proposed development of a world-class adventure tourism attraction in Bindoon may significantly elevate the tourism status, overall brand awareness, and consumer market appeal to the Chittering Valley.”<sup>4</sup>

This project will work with the other tourism offerings in the area and the work currently being delivered by the Shire to provide a compelling attraction for visitors. Increasing the number of attractions builds critical mass and widens the range of appeal for visitors. This has been shown to be magnified by having a flagship attraction, such as the Bindoon Mountain Bike and Adventure Park.<sup>5</sup>

In progressing a Mountain Bike Park for Bindoon, the Shire of Chittering undertook both a Tourism and Recreation Product Audit and commissioned a Feasibility Study in 2019. The Shire is actively working to increase tourism in the shire and commissioned the tourism audit to identify all the different tourism offerings, gaps and opportunities. Emphasising the importance of this project, the audit found that there was a gap for a unique tourism product or attraction to bring people to the Shire.

It noted that Bindoon and the broader Shire of Chittering is not recognised in the domestic or international market for any specific unique point of difference that appeals to a variety of high yielding target markets. The audit found that becoming a mountain bike trail town or a cycle tourism destination will provide greater consumer recognition, however, may not be competitively unique against other proposed trail towns such as Dwellingup or Collie. It stated that having an urban mountain bike park with unique features would provide a point of difference to competitors and provide additional sources of revenue.

The feasibility study into the Bindoon Mountain Bike and Adventure Park further assessed the target market, competitors, strengths, weaknesses and opportunities for the project and found:

- “Mountain biking is one of the world’s fastest growing recreational, sport and tourism activities and Western Australia is following this global trend.”<sup>6</sup>
- “The development of mountain bike trails in Perth and surrounds are a priority as the demand for sanctioned, quality mountain bike trails for the Perth metropolitan population far outweighs the supply”<sup>7</sup>
- “The current Shire of Chittering broader tourism landscape can be improved upon. The Shire of Chittering, via a strong forward-thinking mindset from Shire officers, is positioned to capitalise on a burgeoning adventure sports market, by simply taking advantage of the natural land formations which are proximal to the town of Bindoon.”<sup>8</sup>
- “The opportunity to capture the interest of a growing consumer market of mountain bikers of all ages with a high quality, world-class mountain bike attraction may become the ‘hero’ product within a broader tourism and recreation strategy for the Shire of Chittering.”<sup>9</sup>
- “Existing mountain biking participation and continued growth is a known, and is supported by a plethora of master planning, forecasting and studies all undertaken by a range of Government agencies and

---

<sup>4</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 37

<sup>5</sup> The Involvement of Business Improvement Areas in Tourism: An Exploratory Study of Ontario BIAs by Andrew Marc Giraldi. 2009

<sup>6</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

<sup>7</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

<sup>8</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 19

<sup>9</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

private commercial entities alike, to ensure that the supply of quality trail developments is able to keep up with the increasing demand in Western Australia, nationally and internationally.”<sup>10</sup>

- “Due to the planning and development of mountain bike trail networks, hubs and trail towns in State Forests and National Parks in the south west of Western Australia such as Dwellingup, Collie and Nannup, an opportunity to provide a unique point of difference with a dedicated mountain bike park, with collocated adventure activities all at one convenient location, may be capitalised on.”<sup>11</sup>
- “With the benefit of close proximity to the major population base of Perth, the activation of a unique, world-class mountain bike and adventure park attraction in Bindoon has the potential to be of regional, state and national tourism significance.”<sup>12</sup>
- “By identifying and considering the subject site as a potential mountain bike and adventure park facility, the Shire may be able to use the development as a platform from which a range of other tourism activity can be developed.”<sup>13</sup>
- “It is accepted that a well-designed, operated and marketed mountain bike and adventure park facility generates strong user throughput and it is also recognised that the current mountain biking landscape has a level of demand which outweighs the availability of quality riding experiences, in particular within short proximity to the major population centre of Perth.”<sup>14</sup>
- “Additional to the proposed mountain bike and adventure park development, the Shire of Chittering has other tourism initiatives which can be rolled out and implemented... The robust mountain bike scene could be the catalyst to underpin an increase in visitation and promote confidence for other commercial operations to piggy-back on to this upside.”<sup>15</sup>

## 2.2 The Case for Bindoon Mountain Bike Park Stage 1

According to the Western Australian Mountain Bike Strategy, the recent rapid rise of mountain biking now provides Western Australia with a unique opportunity to grow and evolve into a world-class mountain bike destination. This will support the growth and diversification of the state’s tourism industry whilst also securing meaningful economic and social outcomes for our local and regional communities. Demand for mountain biking experiences significantly exceeds supply. This provides opportunities for forward thinking local governments to target mountain bikers with diverse and quality experiences. The South West region is emerging as an area of long-term international level potential, but there will remain a need for quality trails and facilities closer to Perth. As well as the potential to attract visitors, the provision of mountain bike facilities as a recreation resource for local residents reflects the changing nature of recreation. There is a trend away from structured sport towards recreation activities that can be undertaken informally and at any time. Mountain biking is just such an activity<sup>16</sup>.

The Western Australian Cycle Tourism Strategy, 2018 conducted an analysis of the key target markets for cycle tourism, as well as the current assets in WA. The existing assets and identified gaps in WA were identified in the below table:

<sup>10</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 19

<sup>11</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

<sup>12</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

<sup>13</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 20

<sup>14</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 20

<sup>15</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 20

<sup>16</sup> Mountain Bike Trails Masterplan, Shire of Chittering

Mountain Bike	WA	<ul style="list-style-type: none"> <li>▪ No locations of national or regional significance</li> <li>▪ No tangible and marketable mountain bike product exists</li> <li>▪ High majority of trails on DBCA managed land</li> <li>▪ No permanent event facilities</li> <li>▪ Very limited commercial or business investment in trails</li> <li>▪ No locations meet national or regional infrastructure, amenities or service requirements</li> <li>▪ There are no locations that have trail centres or meet trail hub criteria</li> </ul>
	Perth & Peel Region	<ul style="list-style-type: none"> <li>▪ ≤9% of residents have good access</li> <li>▪ Over 120km of unsanctioned trails</li> <li>▪ Only one formal location (Kalamunda)</li> <li>▪ ≥90% of people drive a car to go riding</li> </ul>
	ASW Region	<ul style="list-style-type: none"> <li>▪ Only 18% of ASW residents have good access to purpose built mountain bike trails</li> <li>▪ ≤20% of the region's sanctioned mountain bike trails are purpose built singletrack</li> <li>▪ Only 15% of singletrack trails are in good condition</li> <li>▪ ≤10% of all trails are well-signed purpose built singletrack</li> <li>▪ Existing trails are mainly suited to riders with intermediate skill levels (12% cater for beginners, 16% for advanced riders)</li> <li>▪ Only one location can be rated as regionally significant</li> </ul>

**Figure 2: Existing assets and identified gaps in WA mountain bike infrastructure <sup>17</sup>**

Based on this analysis of markets, assets and gaps, the report noted that the unique proposition of Western Australia as a cycle tourism destination is focused on its points of difference, being:

- Expanses of natural environments, with great contrasts across short distances
- Diverse landscapes across the state with the south west offering being very different from the north west
- Diversity of key experiences in addition to cycling such as food & wine, particularly around Perth and the South West
- Undulating topography which caters for a broad cross section of the cycling market and provides cyclists with the opportunity to enjoy the surrounding landscape
- The weather in WA makes it ideal for cycling year-round (Mediterranean climate)
- Accessibility to South East Asia (as closest Western destination)
- New offering for the dedicated cycling market looking for experiences beyond the east coast of Australia

<sup>17</sup> Western Australian Cycle Tourism Strategy, 2018, Westcycle, Page 34

- Close proximity of towns through the south west and around Perth which lend themselves well to cycle touring <sup>18</sup>

It is therefore clear that this project, as the only mountain bike park north of Perth, with its close proximity to both Perth and the food and wine district of the Swan Valley and its unique natural landscape, provides the opportunity to combine with mountain bike offerings in the South West to enhance WA as a cycle tourism destination.

Due to the planning and development of mountain bike trail networks, hubs and trail towns in State Forests and National Parks in the south west of Western Australia such as Dwellingup, Collie and Nannup, an opportunity to provide a unique point of difference with a dedicated mountain bike park, with collocated adventure activities all at one convenient location, may be capitalised on by the Shire of Chittering. With the benefit of close proximity to the major population base of Perth, the activation of a unique, world-class mountain bike and adventure park attraction in Bindoon has the potential to be of regional, state and national tourism significance.<sup>19</sup>

---

<sup>18</sup> Western Australian Cycle Tourism Strategy, 2018, Westcycle Page 36

<sup>19</sup> Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

## 3 COST BENEFIT ANALYSIS

This section summarises the Cost Benefit Analysis (CBA) methodology and assumptions.

### 3.1 Methodology

A CBA is the most commonly used, and most comprehensive, of the economic evaluation techniques. Essentially, a CBA compares the monetised benefits and costs of a project to evaluate the desirability of a project. A CBA provides little value if it is conducted without a base case in which to compare options. For this study, the development option is therefore analysed based on only the incremental, or additional, benefits and costs with respect to a base case. This approach is the most appropriate to assess the net economic benefits that accrue from the two development options.

The CBA steps include:

1. Identify the quantifiable benefits that can be monetised;
2. Calculate the value (in monetary terms) of the quantified incremental benefits and capital costs in net present value (NPV) terms using the discount rates;
3. Calculate the benefit cost ratio (BCR) – the total present value of all net benefits compared to the present value of capital costs to determine the ratio to which incremental net benefits exceed (or undershoot) incremental costs related with the upgrade; and
4. Undertake a sensitivity assessment.

#### 3.1.1 Discount Rates

Discounting is the reverse of adding (or compounding) interest. It reduces the monetary value of future costs and benefits back to a common time dimension – the base date. Discounting satisfies the view that people prefer immediate benefits over future benefits (social time preference) and it also enables the opportunity cost to be reflected (opportunity cost of capital). Recognising the potential for multiple audiences for the business cases, real discount rates of 3, 7 and 10% have been applied. This complies with recommendations set by the Office of Best Practice Regulation (OBPR) at the Federal Government level and Western Australian Treasury guidelines.

Modelling of quantifiable benefits and costs are developed over a 20-year timeframe (post construction phase).

#### 3.1.2 Cost of Capital Approach

The cost benefit assessment undertaken in this report represents a “cost of capital” assessment. This approach focuses primarily on the up-front capital costs of the project with reduced consideration of ongoing costs (beyond basic operational cost impacts). The reason for this approach is twofold:

- Firstly, it reflects the stage of the project design and concept that the Cost Benefit Assessment is testing – early stage concepts typically have a capital cost estimate but may not have detailed cash flow or maintenance cost estimates. As such, the “cost of capital” approach does not consider ongoing cashflow consideration which includes discounting any financial revenues that could be secured by the harbour to offset unknown maintenance costs;
- Secondly, this economic business case specifically seeks to develop or address the validity of potential capital investment in the project. As such, evidence is required, through the CBA, of the potential return on investment (in the form of economic and social benefits) to inform this capital decision.

#### 3.1.3 Comparison with the Base Case

For the purpose of this report, RPS has undertaken a cost benefit assessment of the **net additional benefits and costs** above and beyond the current mountain bike and cycling activity at Bindoon and Chittering. All

NPVs and BCRs generated as part of the Cost Benefit Analysis are reflective of the net increase in gross value added and economic and social benefit beyond Bindoon and Chittering’s current activities/visitation, and account for the development of stage 1 of the mountain bike trail park .

### 3.2 Costs

Two financial costs have been included in this assessment:

- Capital or construction costs;
- Ongoing maintenance costs.

As per methodology, operational costs have not been included within the CBA.

#### 3.2.1 Capital Costs

For inclusion in the CBA, RPS has utilised cost estimates provided by the Shire of Chittering. This capital cost amounts to a total value of \$1.82 million for the total estimated project commitment for Stage 1.

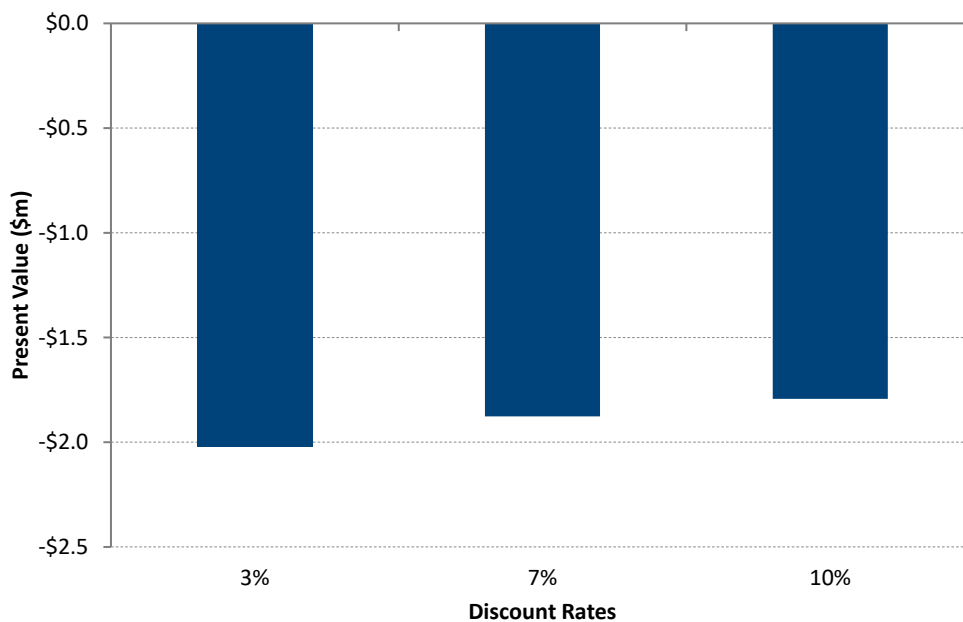
The project construction phase is assumed to take up to 12 months spread in the 2021/22 financial year.

#### 3.2.2 Maintenance Costs

RPS has included an allowance for ongoing asset maintenance costs. This is valued at 1% the capital value of the project commencing in 2022/23 (the first year of operation).

#### 3.2.3 Summary of Costs

Overall, the present value of project costs ranges from \$2.02m under a 3% discount rate to \$1.79m under the 10% discount rate. The present value of capital and maintenance costs are illustrated below.



**Figure 3 Present Value, Capital and Maintenance Costs**

Capital costs represent the largest component of project costs, though maintenance costs are impacted more significantly by discount rates over the course of the assessment period.

## 3.3 Benefits

### 3.3.1 Identified Benefits

This section identifies and summaries the benefits assessed as part of this analysis.

A range of direct financial, economic and social benefits of the Project have been identified.

Financial benefits represent direct monetary benefits generated by (but not necessary for) the project. In contrast, economic benefits are monetary and non-monetary benefits generated to the wider economy or other stakeholders and sectors by the project.

Finally, social benefits are those that relate to the health and physical and mental wellbeing of people and households (including individual groups and cohorts) in the wider community.

Those benefits which are capable of being monetised for inclusion in the CBA are outlined in the table below.

**Table 1 Identified benefits and method of value calculation**

Benefit	Description and Approach	Calculation Approach
Construction Phase GVA Direct Impact	The direct gross value added generated by capital construction and ongoing maintenance costs. Represents the direct impact on the Chittering construction supply chain from the new capital investment.	Derived for Chittering based on regionalised input output transaction tables for Australia and WA <sup>20</sup> , adjusted for Chittering specific location quotients. Estimated at 12.5% of the construction cost of the project captured in the same year as the construction phase.
Interstate and International Tourism Direct Expenditure Benefit	Increased interstate and international overnight tourism expenditure will be supported and captured by the proposed tourism asset, bringing new visitors to the area.	Net additional visitation estimated by the Shire of Chittering at 17,200 visitors per year. Valued using TRA breakdown of visitors by type for the Shire of Chittering for the 5 years to 2019 (i.e. pre-COVID19) <sup>21</sup> . International and interstate domestic visitor shares are allocated average expenditure rates in line with TRA and Tourism WA estimates <sup>22</sup> .
Daytrip and Intrastate Tourism Direct Expenditure Benefit	The establishment of a new tourist asset in Bindoon will also increase daytrip and intrastate domestic overnight visitation to the area, with associated expenditure.	Net additional visitation estimated by the Shire of Chittering at 17,200 visitors per year. Valued using TRA breakdown of visitors by type for the Shire of Chittering for the 5 years to 2019 (i.e. pre-COVID19). Daytrip and intrastate domestic overnight visitor shares are allocated average expenditure rates in line with TRA and Tourism WA estimates.
WA Resident Health and Active Life Benefits	Cycling and bike riding is a active sporting activity with recognised health benefits.	Daytrip and intrastate domestic overnight visitor numbers allocated a per km health benefit based on state and national benchmarks. Valued at \$0.67 per km based on road cycling so regarded as conservative value <sup>23</sup> . KM travelled based on the assumed distribution of visitors across the proposed trails accounting for their length. No adjustment is made for trail difficulty.

<sup>20</sup> ABS (2019) Australian National Accounts – Input-Output Tables 2017/18

<sup>21</sup> Shire of Chittering and Tourism WA annual average estimate (pre-COVID19). Tourism Research Australia (2021) Derived from NVS and IVS unpublished data by RPS, TRA, Canberra

<sup>22</sup> Tourism Research Australia (2021) Derived from NVS and IVS unpublished data by RPS, TRA, Canberra

<sup>23</sup> Average value across NSW, Qld, WA and Victorian State Transport departments.



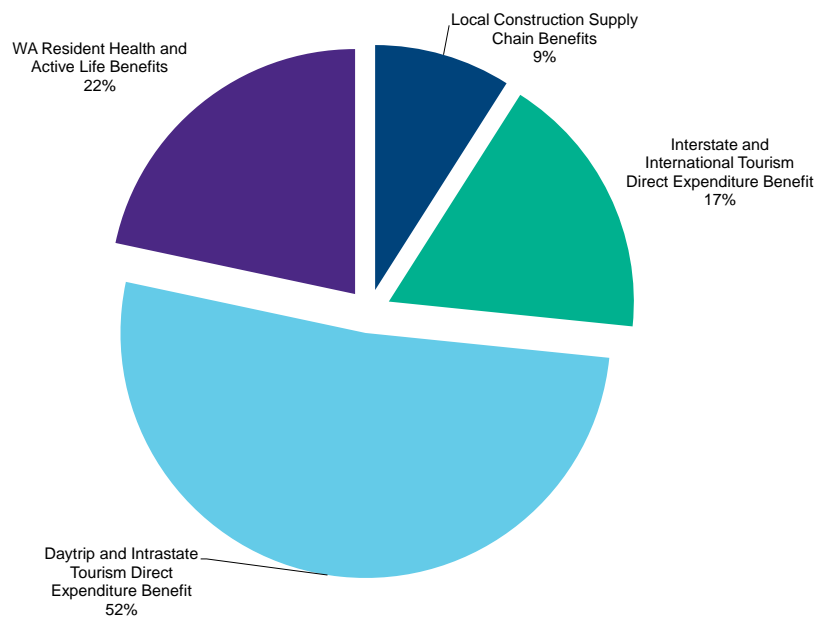
### 3.3.2 Value of Benefits

Overall, the Project will yield benefits between \$6.6m under a 3% discount rate over 20 years to \$4.2m at a 10% discount rate.

**Table 2 Present Value of Benefits (\$ million), by Discount Rate, 2021 to 2041 Bindoon Mountain Bike Park Stage 1 Project**

Benefits	3%	7%	10%
<b>Total</b>	<b>\$6.62</b>	<b>\$4.88</b>	<b>\$4.16</b>
Construction Phase GVA Direct Impact	\$0.22	\$0.44	\$0.21
Interstate and International Tourism Direct Expenditure Benefit	\$1.24	\$0.86	\$0.77
Daytrip and Intrastate Tourism Direct Expenditure Benefit	\$3.64	\$2.53	\$2.25
WA Resident Health and Active Life Benefits	\$1.52	\$1.06	\$0.94

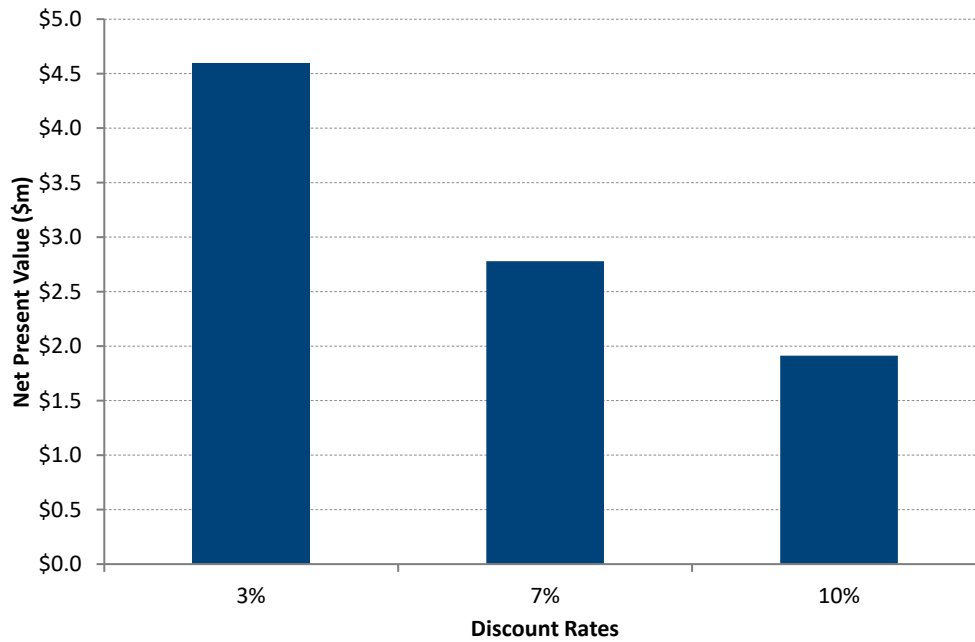
The largest contributor to these benefits is Daytrip and Intrastate Tourism Direct Expenditure, accounting for 52% of the present value of benefits at the 7% discount rate. WA Resident Health and Active Life Benefits (22%) was next with Interstate and International Tourism Direct Expenditure Benefits (17%) third.



**Figure 4 Share of Total Present Value of Identified Benefits at 7% Discount Rate**

### 3.4 Summary of Cost Benefit Assessment Results

Based on a comparison of the present values of the costs and calculated benefits, it is estimated that the Bindoon Mountain Bike Park Stage 1 project will have a positive Net Present Value under all discount rates, ranging from +\$4.6 million at the 3% discount rate over the 20 year assessment period to +\$1.9 million at the 10% discount rate.



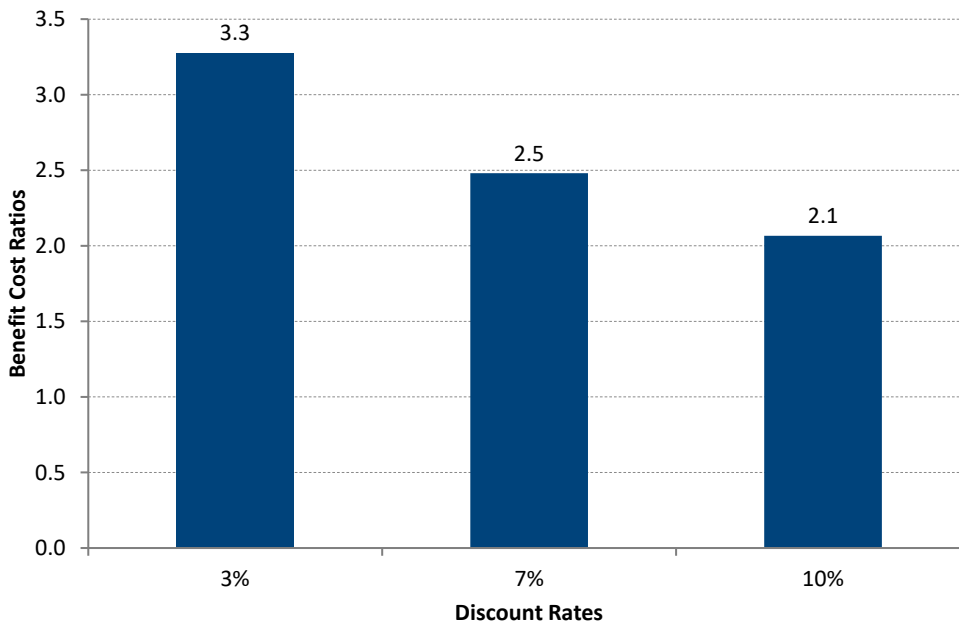
**Figure 5 Net Present Values, by Discount Rate, Bindoon Mountain Bike Park Stage 1**

Similarly, a review of the Benefit Cost Ratios reveals ratios are above 2.0 for all discount rates (1.0 is when benefits are equal with costs) and exceeds 3.3 at the 3% discount rate scenario. Any result above 1.0 is regarded as positive with results approaching 2.0 and above at any discount rate regarded as very positive.

**Table 3 CBA Results (\$ million), by Discount Rate, 2021 to 2041 Bindoon Mountain Bike Park Stage 1 Project**

	4%	7%	10%
Costs	-\$2.02	-\$1.88	-\$1.79
Benefits	\$6.62	\$4.66	\$3.70
<b>NPV</b>	<b>\$4.60</b>	<b>\$2.78</b>	<b>\$1.91</b>
<b>BCR</b>	<b>3.3</b>	<b>2.5</b>	<b>2.1</b>

BCRs for the project are illustrated in the figure below.

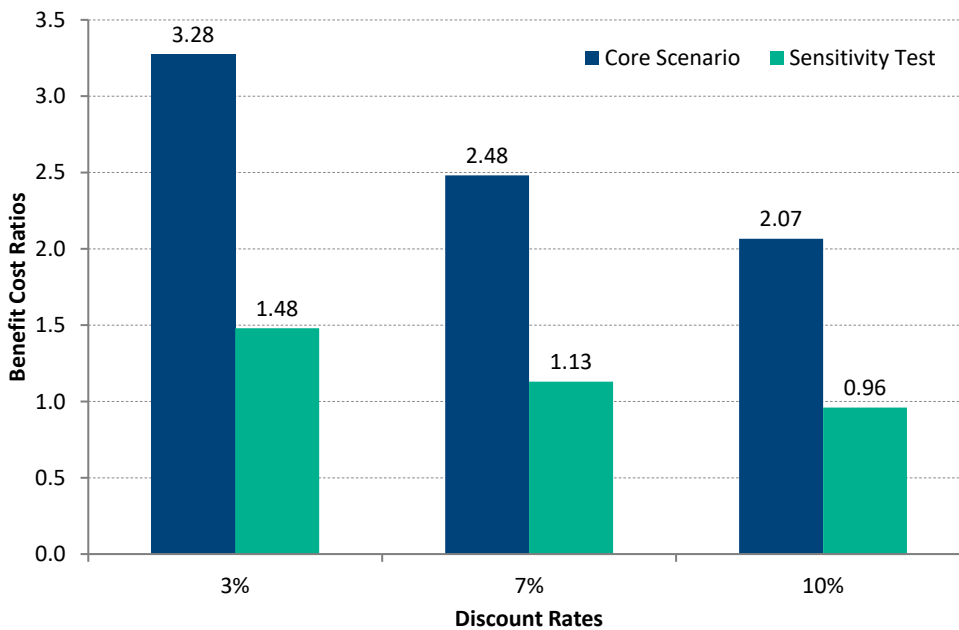


**Figure 6 Benefit Cost Ratios, by Discount Rate, Bindoon Mountain Bike Park Stage 1 Project**

Given the social nature of the proposed investment, RPS regards the results under the 3% and 7% discount rates to be the most relevant as they are closest to the “social rate of return” of 6%. As such, a BCR of 3.3 for the project at the 3% discount rate and 2.5 at the 7% discount rate is regarded as a very positive outcome.

### 3.5 Sensitivity Test

RPS has run a sensitivity test for the CBA. This test focuses on the removal of day trip and intrastate domestic visitors from the CBA. The purpose of this sensitivity test is to determine the continued value of the project if tourism visitation benefits were sourced only from interstate and international visitors only.



**Figure 7 Benefit Cost Ratios, by Discount Rate, Core Scenario and Sensitivity Test, Bindoon Mountain Bike Park Stage 1 Project**

## REPORT

---

Overall, the removal of daytrip and domestic intrastate overnight visitors reduces the BCR at the 3% discount rate to 1.48 and at the 7% rate to 1.13. Both results remain above a BCR threshold of 1.0, indicating continued value for money for the project. It is only at the 10% discount rate that this project drops below 1.0 under the sensitivity test. This discount rate is regarded as the least relevant, but does demonstrate the validity of Local Government intervention to create the underlying tourism asset.

## 4 ECONOMIC IMPACT ASSESSMENT

This section summarises the preliminary employment indicators and economic impact assessment results for the Bindoon Mountain Bike Trail. This section also provides an outline of the methodology and assumptions associated with the preparation of these preliminary results.

### 4.1 Methodology and Approach

At the core of an Economic Impact Assessment is Input–Output (IO) tables. IO tables are part of the national accounts by the ABS and provide detailed information about the supply and use of products in the Australian economy, and the structure of and inter–relationships between Australian industries.

IO tables are converted, through statistical analysis, into a series of Economic Multipliers. These Multipliers represent the relationship between the direct activity (expenditure or production) associated with a Project and the wider economy.

The results of an EIA are generally presented as both direct effects, that is effects from the direct activity of the Project or event, and indirect effects, which are additional effects from further rounds of spending in the supply chain. A third or consumption effect, resulting from rounds of consumer spending generated by the additional income in the region can also be calculated.

There are two broad levels of Multipliers that can be utilised for Impact Assessments:

5. **Simple Multipliers** – including the Direct or Initial Effect, First Round and Industry Supply Chain effects;
6. **Total Multipliers** – including the Simple Multipliers plus subsequent Induced Production and Household Consumptions effects.

Impact Assessments can assess:

- **Output** - the actual dollar amount spent on the Project in the Region;
- **Income** - the amount of wages and salaries paid to labour;
- **Employment** - the full-time equivalent (FTE) per annum employment generated by the project; and
- **Value Added** - the value added to materials and labour expended on the project.

RPS has undertaken an Impact Assessment for the Chittering regional economy, focused solely on **Simple Multipliers**. For the Chittering economic impacts, this entailed the following tasks:

1. Transaction tables were developed from National IO tables for the Wheatbelt economy. For the Chittering regional economy, the Regional Transaction Table was calculated by applying employment-based location quotients for the Region, based on the results of the 2016 Census of Population and Housing. This has the effect of excluding spending on imports to the Region since they generate no local economic activity.
2. Economic Multipliers were then generated for Chittering regional economy across 119 industry categories defined by the ABS;
3. Construction and operational expenditure and production associated with the development were allocated across 119 industry categories; and
4. Economic impacts associated with the Project are calculated.

### 4.1.1 Criticisms of Impact Assessments

Economic Impact Assessments based on IO-tables and Economic Multipliers have been criticised by Government and academia. RPS recognises Economic Multipliers are based on limited assumptions that can result in multipliers being a biased estimator of the benefits or costs of a project.

Shortcomings and limitations of Multipliers for economic impact analysis include:

- **Lack of supply-side constraints:** The most significant limitation of economic impact analysis using multipliers is the implicit assumption that the economy has no supply-side constraints. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or if it is near capacity.
- **Fixed prices:** Constraints on the availability of inputs, such as skilled labour, require prices to act as a rationing device. In assessments using multipliers, where factors of production are assumed to be limitless, this rationing response is assumed not to occur. Prices are assumed to be unaffected by policy and any crowding out effects are not captured.
- **Fixed ratios for intermediate inputs and production:** Economic impact analysis using multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. As such, impact analysis using multipliers can be seen to describe average effects, not marginal effects. For example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount.
- **No allowance for purchasers' marginal responses to change:** Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.
- **Absence of budget constraints:** Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government consumption is not subject to budget constraints.
- **Not applicable for small regions:** Multipliers that have been calculated from the national IO table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter-industry linkages are normally relatively shallow. Inter-industry linkages tend to be shallow in small regions as they usually do not have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions.

### 4.1.2 Adjustments to Improve EIA Reliability

Despite this, IO tables and Economic Multipliers remain popular due to their ease of use and communication of results. RPS has undertaken a number of steps and made appropriate adjustments to the EIA methodology to address and mitigate these concerns.

**RPS has only used Simple Multipliers in the Assessment.** This has the effect of discounting Household Consumption impacts from the assessment. By doing so, only those industries with a first round or supply chain connection are considered. This has the effect of making the results of the EIA conservative and suitable to inform decision making.

RPS regards the use of Economic Multipliers as part of this Assessment as appropriate and reliable. The results of the assessment are conservative, defensible and suitable for informing decision making.

## 4.2 Summary of Results

The following tables provide a breakdown of the direct and indirect economic impacts of the Bindoon Mountain Bike Trail during construction and operational phases.

### 4.2.1 Construction

To calculate construction impacts, RPS first established the local construction spend based on data provided by the Shire of Chittering. RPS attributed 95% of the capital expenditure to the Non-Residential Construction sector. An allowance of 5% of total capital cost was made for allocation to Construction Services.

Direct and indirect economic impacts of construction of the proposed Project to the Wheatbelt regional economy are summarised in the table below.

**Table 4 Construction Impacts (\$m), Bindoon Mountain Bike Trail, Wheatbelt**

Economic Indicators	Direct Impacts	First Round Impacts	Industry Support Impacts	Total Impacts
Output	\$1.8	\$1.0	\$0.6	\$3.4
Income	\$0.2	\$0.2	\$0.1	\$0.6
Jobs (FTEs)	3	2	1	6
Gross Value Added	\$0.4	\$0.4	\$0.2	\$1.0

A total of 6 direct and indirect jobs are estimated for the Project, inclusive of, and stemming from construction. Given the nature of the Project and the anticipated timeframe of construction completion, all of this construction job creation will be realised in the first year. A projected \$0.6m of income is expected to stem from the construction of the Project, with overall direct and indirect GVA projected to reach \$1.0m (based on Simple economic multipliers).

### 4.2.2 Ongoing Tourism Activity

A range of ongoing expenditure-based activity is expected to be supported by the Bindoon Mountain Bike Trail Park Stage 1 once fully operational. The main impact is likely to be in the form of additional tourism expenditure linked to new visitors, increased return visitation and greater levels of expenditure per visitor.

RPS has distributed the expenditure associated with new visitors to Bindoon and Chittering (as modelled in the CBA) across the following sectors:

- Food and Beverage Services
- Retail Trade
- Road Transport
- Sports and Recreation and
- Accommodation

The results of the analysis are outlined below.



**Table 5 Ongoing Tourism Expenditure Impacts (\$m), Annual and 20 Years, Bindoon Mountain Bike Trail, Wheatbelt**

<b>Annual Impact</b>	<b>Direct Impacts</b>	<b>First Round Impacts</b>	<b>Industry Support Impacts</b>	<b>Total Impacts</b>
Output	\$0.4	\$0.1	\$0.0	\$0.5
Income	\$0.1	\$0.0	\$0.0	\$0.1
Jobs (FTEs)	2.2	0.3	0.1	2.6
Gross Value Added	\$0.2	\$0.0	\$0.0	\$0.2

<b>20 Year Impacts</b>	<b>Direct Impacts</b>	<b>First Round Impacts</b>	<b>Industry Support Impacts</b>	<b>Total Impacts</b>
Output	\$7.0	\$1.9	\$0.8	\$9.8
Income	\$2.2	\$0.5	\$0.2	\$2.9
Jobs (FTEs)	2.2	0.3	0.1	2.6
Gross Value Added	\$3.3	\$0.9	\$0.4	\$4.6

Based on RPS’ analysis, the proposed Project will stimulate a total of \$9.8m in Economic Output and over \$4.6m in Gross Value added over the 20 year assessment period. This will directly and indirectly support up to 3 additional FTEs in the Shire of Chittering economy over this time.

## 5 CONCLUSIONS

The Bindoon Mountain Bike Park Stage 1 will represent a new catalytic tourism asset and attraction for the Bindoon community and the wider Chittering economy. This new asset will help to attract an additional 17,200 visitors per year and support local construction and tourism jobs in the region.

The project has very positive benefit cost ratios of 3.3 at the 3% discount rate and 2.5 at the 7% discount rate. Daytrip and intrastate domestic overnight visitor expenditure accounts for the largest share of the benefits at 52% of the present value.

However, even with daytrip and intrastate domestic overnight visitation removed, the project continues to have a BCR above the minimum threshold of 1.0 under both the 3% and 7% discount rates. These rates are regarded as the most relevant for the project and demonstrate the value for money even when only interstate and international visitors are considered.

# Appendix A

## Construction Costs

**Table 6 Construction Cost Estimates, Bindoon Mountain Bike Trail Park Project Stage 1**

Ref	Buildings	Unit	Qty	Rate \$ Ex GST	Amount \$	Contingency 10%	Total Cost \$ Ex-GST
1	Bike Showroom, Kiosk and Seating Area inc. Installation	Item	1	\$ 185,000.00	\$ 185,000.00	Required	\$ 203,500
2	Toilet / Changeroom Facilities (Noosa Tourist Village)	Item	1	\$ 190,500.00	\$ 190,500.00	Required	\$ 209,550
3	Toilet (on Hill)	Item	1	\$ 20,000.00	\$ 20,000.00	Required	\$ 22,000
<b>Trail Works</b>							
4	Green Loop Trail	Lm	5223	\$ 35.00	\$ 182,805.00	Not Required	\$ 182,805.00
5	Green Link Trail	Lm	231	\$ 35.00	\$ 8,085.00	Not Required	\$ 8,085.00
6	Green Descending 1	Lm	1470	\$ 40.00	\$ 58,800.00	Not Required	\$ 58,800.00
7	Blue Descending 1	Lm	1502	\$ 45.00	\$ 67,590.00	Not Required	\$ 67,590.00
8	Black Descending 1	Lm	941	\$ 55.00	\$ 51,755.00	Not Required	\$ 51,755.00
9	Blue XC 1	Lm	1443	\$ 40.00	\$ 57,720.00	Not Required	\$ 57,720.00
10	Blue Descending 2	Lm	1229	\$ 48.00	\$ 58,992.00	Not Required	\$ 58,992.00
11	Black Descending 2	Lm	959	\$ 68.00	\$ 65,212.00	Not Required	\$ 65,212.00
12	Road Shuttle Uplift	Lm	2000	\$ 150.00	\$ 300,000.00	Not Required	\$ 300,000.00
13	Summit Point	m2	1500	\$ 15.00	\$ 22,500.00	Not Required	\$ 22,500.00
<b>Infrastructure</b>							
14	Bike Lockers	No	10	\$ 1,600.00	\$ 16,000.00	Not Required	\$ 16,000.00
15	Bike Maintenance Stand with Tools and Tyre Pump	No	1	\$ 1,200.00	\$ 1,200.00	Not Required	\$ 1,200.00
16	Bike Rack	No	1	\$ 750.00	\$ 750.00	Not Required	\$ 750.00
17	Freight for Above (Lockers, Maintenance Stand and Bike Rack from Cc	Item	1	\$ 2,600.00	\$ 2,600.00	Not Required	\$ 2,600.00
18	Double Barbecues	No	2	\$ 10,333.00	\$ 20,666.00	Not Required	\$ 20,666.00
19	Barbecue Shelters (Skillion Park Shelter 4x7m w louvres/lights/balust	No	2	\$ 10,830.00	\$ 21,660.00	Not Required	\$ 21,660.00
20	Public Benches	No	4	\$ 847.00	\$ 3,388.00	Not Required	\$ 3,388.00
21	Bin Surrounds	No	4	\$ 1,428.00	\$ 5,712.00	Not Required	\$ 5,712.00
22	Delivery of 15-18	Item	1	\$ 3,200.00	\$ 3,200.00	Required	\$ 3,200.00
23	Packaging of 15-18	Item	1	\$ 363.00	\$ 363.00	Not Required	\$ 363.00
24	All Signage	Item	1	\$ 50,000.00	\$ 50,000.00	Not Required	\$ 50,000.00
25	Donation Point Tap Kiosk	Item	1	\$ 750.00	\$ 750.00	Required	\$ 825.00
<b>External Works Trail Head</b>							
26	Electrical Site Works	Item	1	\$ 30,000.00	\$ 30,000.00	Required	\$ 33,000.00
27	ATU & Sewerage Connection	Item	1	\$ 60,000.00	\$ 60,000.00	Required	\$ 66,000.00
28	Civil Works	Item	1	\$ 100,000.00	\$ 100,000.00	Required	\$ 110,000.00
29	Landscaping	Item	1	\$ 25,000.00	\$ 25,000.00	Required	\$ 27,500.00
30	Installation of Street Furniture, BBQ's	Item	1	\$ 15,000.00	\$ 15,000.00	Required	\$ 16,500.00
31	Car Park and Driveway - Sealed	Item	1	\$ 75,000.00	\$ 75,000.00	Required	\$ 82,500.00
32	Drainage	Item	1	\$ 40,000.00	\$ 40,000.00	Required	\$ 44,000.00
33	Fencing	No	750	\$ 10.00	\$ 7,500.00	Required	\$ 8,250.00
<b>TOTAL STAGE 1</b>							<b>\$ 1,822,623.00</b>