

BINDOON MOUNTAIN BIKE TRAILS STAGE 1

Cost Benefit Analysis

BBRF
Bindoon Mountain Bike Trails
Stage 1 CBA
FINAL v1.1
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REPORT

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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 Forest¹. 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 2.1% between 2019 and 2020². The Shire accounted for 63 per cent of the Wheatbelt's total population growth over the 2006-2016 period³

In 2020, there were over 6,000 people in the Shire, which was an increase of over 10% on 2016. In 2016 1,183 people lived in Bindoon, which was up 11.28% on 2011⁴. 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 7,610; 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 7,610 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

¹ Mountain Bike Trails Masterplan, Shire of Chittering, page 10

² ABS (2021) Regional Population, Accessed at <https://www.abs.gov.au/statistics/people/population/regional-population/2019-20#data-download>

³ Western Australian Planning Commission: Chittering Land Supply Assessment, June 2018

⁴ Masterplan – find page

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 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

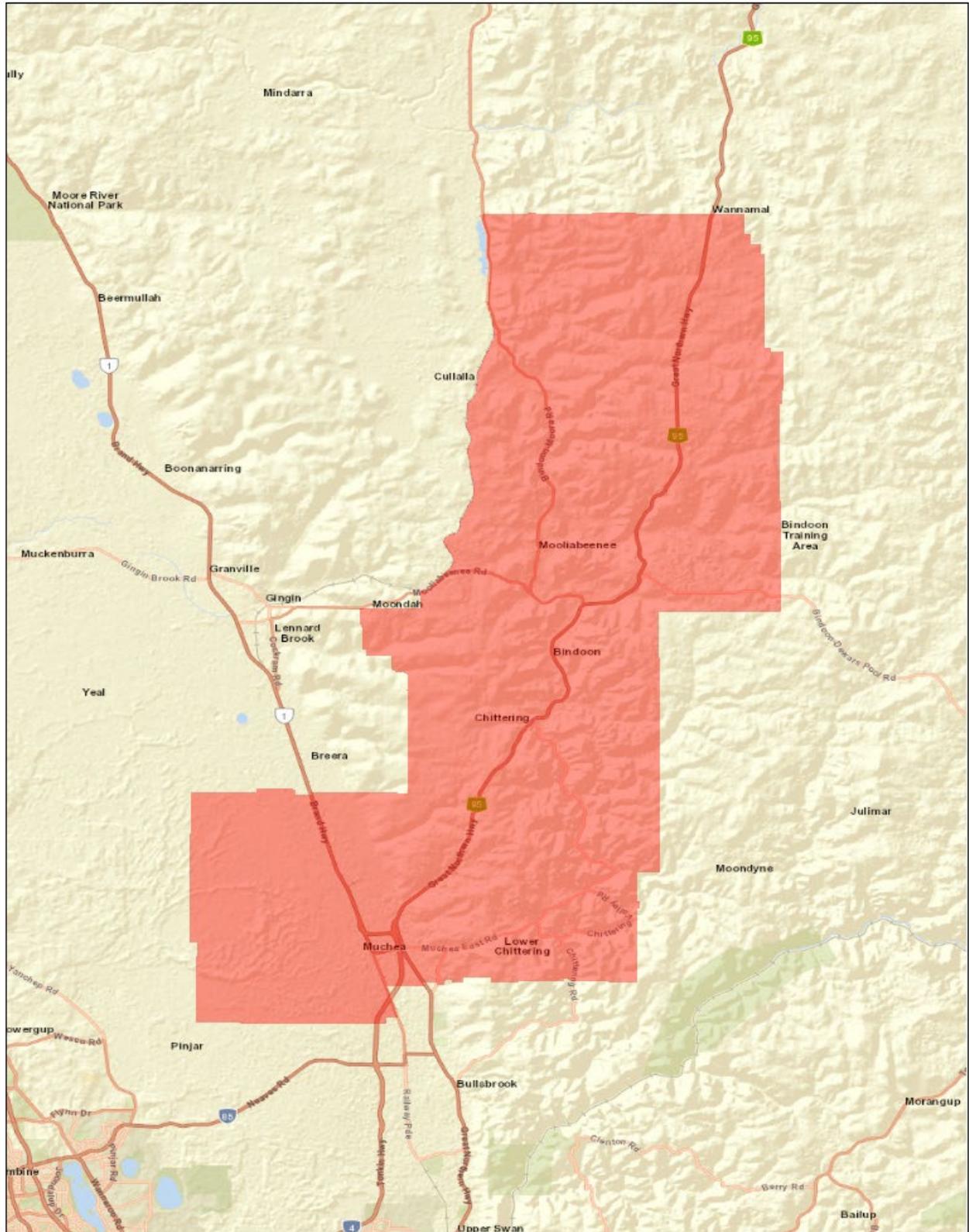
RPS was engaged by the Shire of Chittering to prepare a Cost Benefit Analysis report in support of a Building Better Regions Fund Application for the Bindoon Mountain Bike Trail Stage 1.

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 Economic and Social Significance of Mountain Biking

Mountain Biking is increasingly recognised as a popular outdoor sport and recreation activity of choice, with over 340,000 participants in Australian 2020⁵. Participants in the sport on average spent 1-2 hours per week participating in the activity. In 2020/21, this activity level represents an average annual use of mountain bike trails in Australia of approximately 1,550 per km⁶. However, this usage rate is distorted by a large number of lower volume trails, with more well established trails supporting between 5,000 and 10,000 rides per km per year⁷.

Mountain biking activity generates a series of personal, economic and social benefits including:

- Health benefits from physical activity (\$1.58 per km)
- Productivity benefits (\$7.59 per ride)
- Human capital benefits (\$2.50 per ride)
- Consumer surplus and expenditure (\$25.98/ride and \$27.10/ride respectively)
- Criminal and social justice benefits (\$0.78 per ride) and
- Volunteering benefits (\$3,214 per volunteer per year)⁸.

Estimates by GHD for Auscycling are that mountain biking contributed \$748.5m in direct and indirect activity to the Australian economy and over 6,000 FTEs in employment. It also supported significant intra-state, interstate and international tourism visitation.

2.2 Mountain Biking Opportunity in Chittering

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.”⁹

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 Park¹⁰.

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

⁵ GHD (2021) Mountain Biking in Australia: An Economic and Participation Analysis, AusCycling accessed at <https://assets.auscycling.org.au/s3fs-public/2021-03/mountain-biking-in-australia-final-report-march-2021.pdf?sOhdYZLJUG1eZnmPE8yYmFQbbuOqrfm4=>

⁶ Derived from the estimated number of mountain bike rides in 2020 from Ausplay (riders x frequency of ride) divided by the total distance of mountain bike trails in Australia in 2020 (estimated at 15,580km).

⁷ Based on DCBA data for Goat Farm, Kalamunda and Murray Valley Mountain Bike Trails.

⁸ GHD (2021) Mountain Biking in Australia: An Economic and Participation Analysis, AusCycling accessed at <https://assets.auscycling.org.au/s3fs-public/2021-03/mountain-biking-in-australia-final-report-march-2021.pdf?sOhdYZLJUG1eZnmPE8yYmFQbbuOqrfm4=>

⁹ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 37

¹⁰ The Involvement of Business Improvement Areas in Tourism: An Exploratory Study of Ontario BIAs by Andrew Marc Giraldi. 2009

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.”¹¹
- “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”¹²
- “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.”¹³
- “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.”¹⁴
- “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 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.”¹⁵
- “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.”¹⁶
- “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.”¹⁷

¹¹ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

¹² Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

¹³ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 19

¹⁴ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

¹⁵ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 19

¹⁶ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

¹⁷ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

- “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.”¹⁸
- “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.”¹⁹
- “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.”²⁰

2.3 The Case for Bindoon Mountain Bike Trail 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 activity²¹.

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:

¹⁸ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 20

¹⁹ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 20

²⁰ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 20

²¹ Mountain Bike Trails Masterplan, Shire of Chittering

Mountain Bike	WA	<ul style="list-style-type: none"> 8 rail trails are open to mountain bikers, accounting for 260 kms of off-road trails 	<ul style="list-style-type: none"> No locations of national or regional significance No tangible and marketable mountain bike product exists High majority of trails on DBCA managed land No permanent event facilities Very limited commercial or business investment in trails No locations meet national or regional infrastructure, amenities or service requirements There are no locations that have trail centres or meet trail hub criteria
	Perth & Peel Region	<ul style="list-style-type: none"> 141km of sanctioned trails 10 designated trails/trail networks 	<ul style="list-style-type: none"> ≤9% of residents have good access Over 120km of unsanctioned trails Only one formal location (Kalamunda) ≥90% of people drive a car to go riding
	ASW Region	<ul style="list-style-type: none"> 229km of sanctioned trails 12 designated trails/trail networks 	<ul style="list-style-type: none"> Only 18% of ASW residents have good access to purpose built mountain bike trails ≤20% of the region's sanctioned mountain bike trails are purpose built singletrack Only 15% of singletrack trails are in good condition ≤10% of all trails are well-signed purpose built singletrack Existing trails are mainly suited to riders with intermediate skill levels (12% cater for beginners, 16% for advanced riders) Only one location can be rated as regionally significant

Figure 2: Existing assets and identified gaps in WA mountain bike infrastructure ²²

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

²² 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 touring²³

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.²⁴

2.4 Demand for the Bindoon Mountain Bike Trails

Demand for mountain biking trails and experiences are increasing significantly across Australia, including in Western Australia. Data from the Western Australian Department of Biodiversity, Conservation and Attractions (DCBA) was provided to RPS by the Shire of Chittering on the number of rides/visits confirmed a number of new and large mountain bike trails and precincts per-urban and regional WA have experienced significant growth in rides and visits in recent years.

Examples of growth include:

- Since its establishment in January 2019, the Murray Valley Mountain Bike Trail has seen the number of rides increase to 21,725 in 2019 to 36,253 in 2020²⁵. Data for part of the 2021 year indicates that the number of rides in 2020 are likely to be exceeded again.
- In the year to October 2021, the Goat Farm Mountain Bike Trail in Greenmount, WA saw over 50,000 visits/rides. This likely equates to an annual average number of visits of in excess of 60,000 rides in 2021 calendar year across the 10kms of trails.
- With over 40km of fully signed single-track, the Kalamunda Trails area is the most popular MTB destination in WA²⁶. The number of rides in 2020 calendar year approximate 148,000, with data in November 2021 already reaching that same level²⁷.

Across these three sets of trails, the number of rides per km ranged in 2020/21 from 3,659 for Kalamunda to 7,200 for Murray Valley. This highlights the popularity of mountain biking generally in Western Australia as well as the potential need for further facilities to meet current and growing demand.

Importantly, the project possesses a series of access and collocation benefits that mean it will be a highly advantageous location for additional mountain bike trail facilities in regional WA:

- Bindoon is 30 minutes closer to Perth CBD than the Goat Farm Mountain Bike Park, providing Perth residents with improved access and choice.

²³ Western Australian Cycle Tourism Strategy, 2018, Westcycle Page 36

²⁴ Bindoon Mountain Bike and Adventure Park Feasibility Study, Breakaway Tourism, 2019, Page 16

²⁵ Based on data for Year 1, Bam and Boom Boom trails equating 5.0km of the Murray Valley Mountain Bike Trail precinct.

²⁶ TrailsWA (2022) Trail Network: Kalamunda Trails accessed at <https://trailswa.com.au/trails/networks/kalamunda-mtb-trails>

²⁷ DCBA (2022) Unpublished Data

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- The Shire of Chittering is located on the north side of the Perth metropolitan area, providing residents in the north west corridor of Perth (one of the fastest growing residential corridors in Australia) with access to mountain bike trails at a similar distance to eastern and southern suburbs currently have to Kalamunda.
- At 15km in the first stage, the trails will provide a critical mass of mountain biking opportunities and experiences while also providing for the potential for further expansion (to a total of 25-30km in the medium term).

Based on these attributes, RPS has applied a per km ride rate of 6,667 per year. This rate is less than that of Murray Valley, and broadly comparable than Goat Farm, though is more than the larger facilities at Kalamunda. This is viewed as an appropriate level of demand for the purpose of modelling benefits of the proposed facility. T

Additionally, analysis of data from the establishment Murray Valley indicates that the full demand potential of the project is likely to be achieved after a ramp up period. As such, RPS has assumed that the full demand profile (approximately 100,000 visits/rides) of the project won't be reached until the 3 year of operations, growing from 50% (approximately 50,000 visits/rides) in the first year. This is regarded as conservative as similar growth rates were achieved for Murray Valley trails in the second year (90-95% growth in rides per trail).

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 with 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 \$2.114million for the total estimated project commitment for Stage 1.

The project construction phase is assumed to take up to 12 months spread.

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). This is higher than the \$1,000-\$1,500 per km standard applied by DCBA to mountain bike trailers in Western Australia, ensuring the whole of life cycle costings are defensible.

Allowance has also been made for more significant refurbishment and redevelopment in the 10th year equivalent to 10% of the capital costs.

3.2.3 Summary of Costs

Overall, the present value of project costs ranges from \$2.50m under a 3% discount rate to \$2.16m under the 10% discount rate. The present value of capital and maintenance costs are illustrated below.

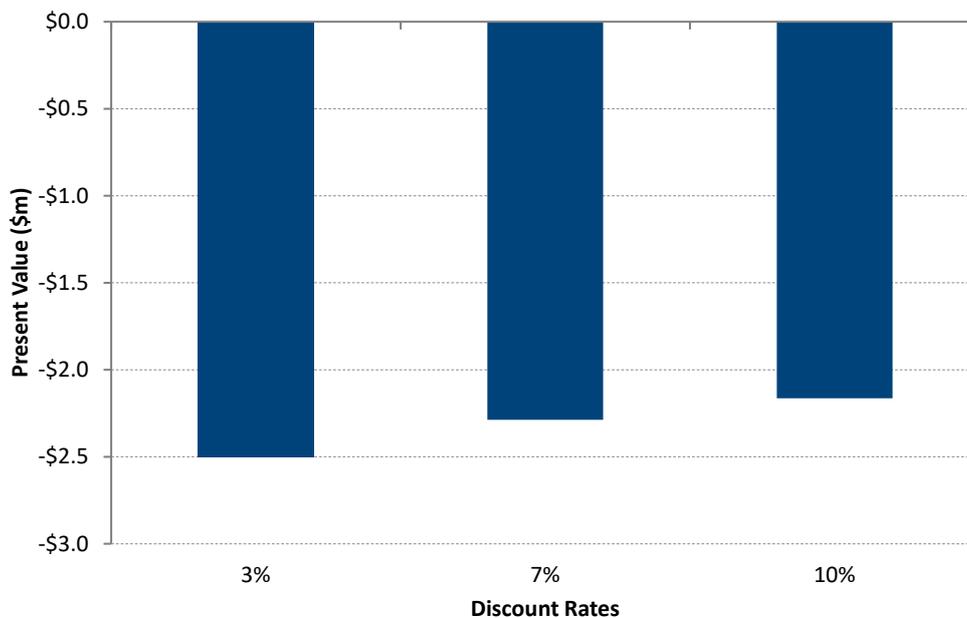


Figure 3 Present Value, Capital and Maintenance Costs

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 ²⁸ , 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.	Total additional visits to the Shire of Chittering estimated to be 100,000 in the third year. Of these visits, approximately 60% are assumed to be day trip visits from within Western Australia. This is smaller than the current day trip visitor share of 80% (pre-COVID-19) due to the visitor profile of mountain biking. The remainder of visitors are characterised as tourists and includes allowance for 15% of interstate and international visitors. Valued using TRA breakdown of visitors by type for the Shire of Chittering for the 5 years to 2020 (i.e. pre-COVID19) ²⁹ . International and interstate domestic visitor shares are allocated average expenditure rates in line with TRA and Tourism WA estimates ³⁰ . Attribution weighting of 25% to reflect project share of additional visitor expenditure to the State of Western Australia.

²⁸ ABS (2019) Australian National Accounts – Input-Output Tables 2017/18

²⁹ 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

³⁰ Tourism Research Australia (2021) Derived from NVS and IVS unpublished data by RPS, TRA, Canberra

Benefit	Description and Approach	Calculation Approach
WA Resident Expenditure Benefits	Additional expenditure by WA residents induced by participation in mountain biking at the subject site.	Valued at \$27.10 per ride/visit ³¹ . Applied to the 60% of total visits (prorate for years 1 and 2) categorised as WA residents. Attribution weighting of 10% to reflect alternate locations of supply and to prevent double counting of existing sport and recreation expenditure by WA households.
WA Resident Social Value Benefits	Value of health, productivity, social cohesion and human capital benefits of participating in mountain bike riding.	Valued based on individual values outlined in 2.1, excluding consumer surplus/expenditure. Applied per trip/visit as applicable. Attribution weight of 100% due to nexus of benefits to actual activity.
Volunteering benefits	Benefits of volunteering induced from increased sport and recreation activity and facilities.	Estimated at 10 volunteers per year valued at \$3,214 per volunteer.

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 Trail Stage 1 Project

Benefits	3%	7%	10%
Total	\$20.18	\$14.12	\$11.58
Local Construction Supply Chain Benefits	\$0.26	\$0.51	\$0.24
Interstate and International Tourism Direct Expenditure Benefit	\$5.60	\$3.82	\$3.18
WA Resident Expenditure Benefit	\$2.15	\$1.47	\$1.22
WA Resident Social Value Benefits	\$11.73	\$8.01	\$6.66
Volunteering Benefits	\$0.45	\$0.31	\$0.28

The largest contributor to these benefits is WA Residential Social Value Benefits, accounting for 57% of the present value of benefits at the 7% discount rate. Interstate and International direct expenditure benefits (27%) was next with WA Resident Expenditure Benefits (10%) third.

³¹ GHD (2021) Mountain Biking in Australia: An Economic and Participation Analysis, AusCycling accessed at <https://assets.auscycling.org.au/s3fs-public/2021-03/mountain-biking-in-australia-final-report-march-2021.pdf?sOhdYZLJUG1eZnmPE8yYmFQbbuOqrfm4=>

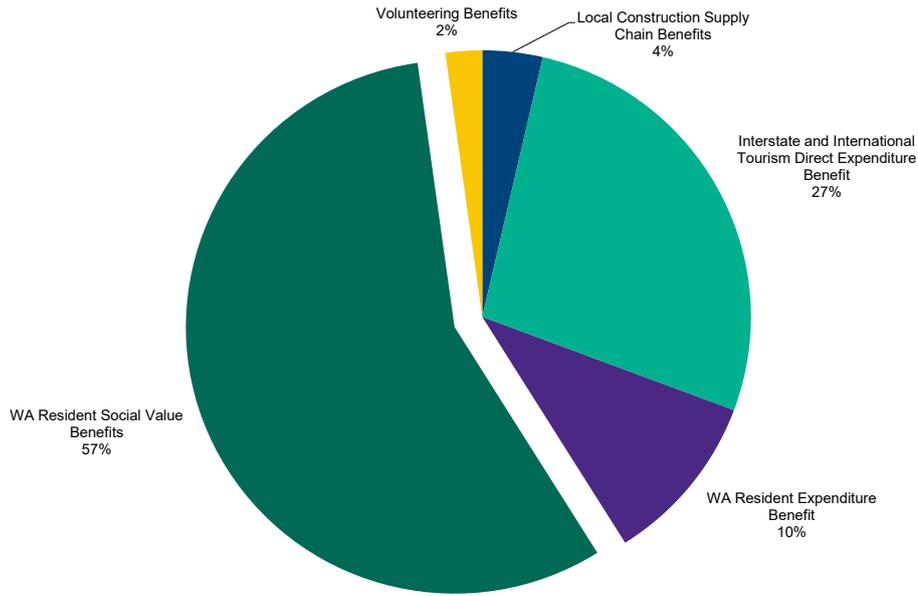


Figure 4 Share of Total Present Value of Identified Benefits at 7% Discount Rate

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 Trail Stage 1 project will have a positive Net Present Value under all discount rates, ranging from +\$17.67 million at the 3% discount rate over the 20 year assessment period to +\$8.65 million at the 10% discount rate.

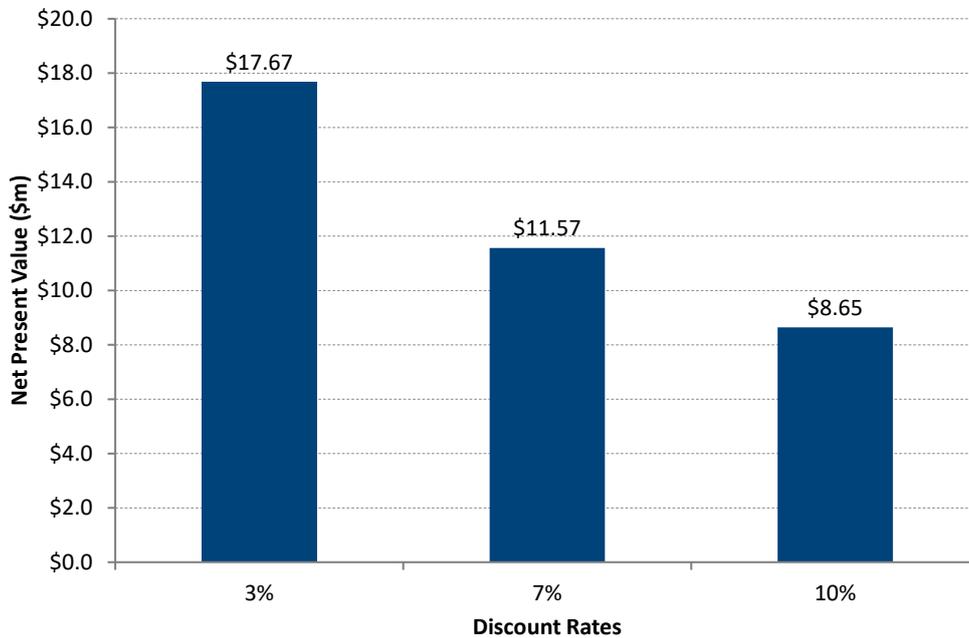


Figure 5 Net Present Values, by Discount Rate, Bindoon Mountain Bike Trail Stage 1

Similarly, a review of the Benefit Cost Ratios reveals ratios are above 5.0 for all discount rates (1.0 is when benefits are equal with costs) and exceeds 7.0 at the 3% discount rate scenario. Any result above 1.0 is regarded as positive with results 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 Trail Stage 1 Project

	4%	7%	10%
Costs	-\$2.50	-\$2.29	-\$2.16
Benefits	\$20.18	\$13.85	\$10.81
NPV	\$17.67	\$11.57	\$8.65
BCR	8.1	6.1	5.0

BCRs for the project are illustrated in the figure below.

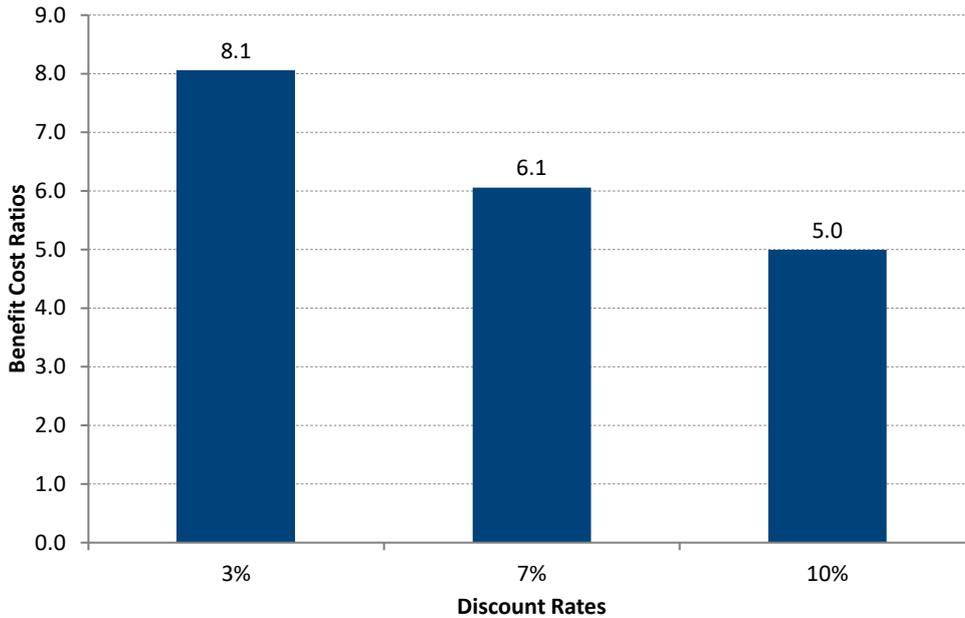


Figure 6 Benefit Cost Ratios, by Discount Rate, Bindoon Mountain Bike Trail Stage 1 Project

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 8.1 for the project at the 3% discount rate and 6.1 at the 7% discount rate is regarded as an extremely positive outcome.

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 and Heavy and Civil Engineering sectors, based on individual cost items. 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	\$2.1	\$0.7	\$0.4	\$3.2
Income	\$0.4	\$0.2	\$0.1	\$0.7
Jobs (FTEs)	3	2	1	6
Gross Value Added	\$0.8	\$0.3	\$0.2	\$1.3

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 \$0.7m of income is expected to stem from the construction of the Project, with overall direct and indirect GVA projected to reach \$1.3m (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 interstate and international 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

Annual Impact	Direct Impacts	First Round Impacts	Industry Support Impacts	Total Impacts
Output	\$1.8	\$0.5	\$0.2	\$2.5
Income	\$0.6	\$0.1	\$0.0	\$0.7
Jobs (FTEs)	11.5	1.5	0.6	13.5
Gross Value Added	\$0.9	\$0.2	\$0.1	\$1.2

20 Year Impacts	Direct Impacts	First Round Impacts	Industry Support Impacts	Total Impacts
Output	\$36.0	\$9.9	\$4.3	\$50.2
Income	\$11.2	\$2.6	\$1.0	\$14.8
Jobs (FTEs)	11.5	1.5	0.6	13.5
Gross Value Added	\$17.0	\$4.6	\$2.1	\$23.7

Based on RPS’ analysis, the proposed Project will stimulate a total of \$50.2 in Economic Output and over \$23.7m in Gross Value added over the 20 year assessment period. This will directly and indirectly support up to 13.5 additional FTEs in the Shire of Chittering economy over this time.

5 CONCLUSIONS

The Bindoon Mountain Bike Trail Stage 1 will represent a new catalytic tourism asset and attraction for the Bindoon community and the wider Chittering economy. This new asset has the potential to attract an additional 100,000 visitors per year to the Shire (in line with benchmark locations and DCBA data) and support local construction and tourism jobs in the region.

The project has very positive benefit cost ratios of 8.1 at the 3% discount rate and 6.1 at the 7% discount rate. WA Resident Social Value Benefits accounts for the largest share of the benefits at 57% of the present value. This is followed by Interstate and International Tourism Direct Expenditure Benefits (27%).

Based on RPS' analysis, the proposed Project will stimulate a total of \$50.2m in Economic Output and over \$23.7m in Gross Value added over the 20-year assessment period. This will directly and indirectly support up to 13.5 additional FTEs in the Shire of Chittering economy over this time.

Appendix A Construction Costs

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

Scenario: BBRF Funding								
Ref	Buildings	Unit	Qty	Rate \$ Ex GST	Amount \$	Source of Estimate	Contingency 10%	Total Cost \$ Ex-GST
1	Bike Showroom, Kiosk and Seating Area inc. Instal	Item	1	\$ 185,000.00	\$ 185,000.00	Quote Received	Required	\$ 203,500
2	Toilet / Changeroom Facilities (Noosa Tourist Vill	Item	1	\$ 190,500.00	\$ 190,500.00	Quote Received	Required	\$ 209,550
3	Toilet (Chemical installed X2)	Item	2	\$ 52,000.00	\$ 104,000.00	Quote Received	Required	\$ 114,400
Trail Works								
4	Green Loop Trail	Lm	5223	\$ 35.00	\$ 182,805.00	Quote From Concept	Not Required	\$ 182,805.00
5	Green Link Trail	Lm	231	\$ 35.00	\$ 8,085.00	Quote From Concept	Not Required	\$ 8,085.00
6	Green Descending 1	Lm	1470	\$ 40.00	\$ 58,800.00	Quote From Concept	Not Required	\$ 58,800.00
7	Blue Descending 1	Lm	1502	\$ 45.00	\$ 67,590.00	Quote From Concept	Not Required	\$ 67,590.00
8	Black Descending 1	Lm	941	\$ 55.00	\$ 51,755.00	Quote From Concept	Not Required	\$ 51,755.00
9	Blue XC 1	Lm	1443	\$ 40.00	\$ 57,720.00	Quote From Concept	Not Required	\$ 57,720.00
10	Blue Descending 2	Lm	1229	\$ 48.00	\$ 58,992.00	Quote From Concept	Not Required	\$ 58,992.00
11	Black Descending 2	Lm	959	\$ 68.00	\$ 65,212.00	Quote From Concept	Not Required	\$ 65,212.00
12	Road Shuttle Uplift	Lm	2000	\$ 150.00	\$ 300,000.00	Quote From Concept	Not Required	\$ 300,000.00
Infrastructure								
15	Bike Lockers	No	10	\$ 1,600.00	\$ 16,000.00	Quote Received	Not Required	\$ 16,000.00
16	Bike Maintenance Stand with Tools and Tyre Pum	No	1	\$ 1,200.00	\$ 1,200.00	Quote Received	Not Required	\$ 1,200.00
17	Bike Rack	No	1	\$ 750.00	\$ 750.00	Quote Received	Not Required	\$ 750.00
18	Freight for Above (Lockers, Maintenance Stand an	Item	1	\$ 2,600.00	\$ 2,600.00	Quote Received	Not Required	\$ 2,600.00
19	Double Barbecues	No	2	\$ 10,333.00	\$ 20,666.00	Quote Received	Not Required	\$ 20,666.00
20	Barbecue Shelters (Skillion Park Shelter 4x7m w l	No	2	\$ 10,830.00	\$ 21,660.00	Quote Received	Not Required	\$ 21,660.00
21	Public Benches	No	4	\$ 847.00	\$ 3,388.00	Quote Received	Not Required	\$ 3,388.00
22	Bin Surrounds	No	4	\$ 1,428.00	\$ 5,712.00	Quote Received	Not Required	\$ 5,712.00
23	Delivery of 15 -18	Item	1	\$ 3,200.00	\$ 3,200.00	Quote Received	Not Required	\$ 3,200.00
24	Packaging of 15-18	Item	1	\$ 363.00	\$ 363.00	Quote Received	Not Required	\$ 363.00
25	All Signage	Item	1	\$ 50,000.00	\$ 50,000.00	Quote Received	Not Required	\$ 50,000.00
26	Donation Point Tap Kiosk	Item	1	\$ 750.00	\$ 750.00	Quote Received	Required	\$ 825.00
27	Kiosk fit-out - bain marie, work benches, air-cond	Item	1	\$ 18,000.00	\$ 18,000.00	Quote Received	Required	\$ 19,800.00
28	Fire Hose Reels	Item	1	\$ 5,000.00	\$ 5,000.00	Quote Received	Required	\$ 5,500.00
External Works Trail Head								
29	Electrical Site Works and Lighting	Item	1	\$ 95,000.00	\$ 95,000.00	Works Dept Quote	Required	\$ 104,500.00
30	ATU & Sewerage Connection	Item	1	\$ 70,000.00	\$ 70,000.00	Quote Received	Required	\$ 77,000.00
31	Civil Works	Item	1	\$ 100,000.00	\$ 100,000.00	Works Dept Quote	Required	\$ 110,000.00
32	Landscaping & Nature Play	Item	1	\$ 37,500.00	\$ 37,500.00	Quote From Concept	Required	\$ 41,250.00
33	Installation of Street Furniture, BBQ's	Item	1	\$ 15,000.00	\$ 15,000.00	Works Dept Quote	Required	\$ 16,500.00
34	Car Park and Driveway - Sealed	Item	1	\$ 75,000.00	\$ 75,000.00	Works Dept Quote	Required	\$ 82,500.00
35	Drainage	Item	1	\$ 40,000.00	\$ 40,000.00	Works Dept Quote	Required	\$ 44,000.00
36	Fencing	No	4100	\$ 10.00	\$ 41,000.00	Works Dept Quote	Required	\$ 45,100.00
37	Dieback Management Stations	No	2	\$ 10,000.00	\$ 20,000.00	Quote Received	Not Required	\$ 20,000.00
Promotion								
38	Branding Development and Marketing Campaign	Item	1	\$ 40,000.00	\$ 40,000.00	Estimate Received	Required	\$ 44,000.00
								\$ 2,114,923.00