

# **Goulburn River Trail**

### Exploratory Study Report

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# Revision

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# **Executive Summary**

#### **Project overview**

This report presents the findings of an exploratory study undertaken to further investigate the feasibility and alignment of the proposed Goulburn River Trail. The study builds upon the foundational work of the Goulburn River Trail Feasibility Study and Development Plan, which outlined a vision for a 46km multi-use trail connecting Shepparton, Mooroopna, Toolamba, Old Toolamba, and Murchison, with a potential 12km link to Tatura.

The proposed Goulburn River Trail aims to provide a safe and enjoyable pathway for recreational uses such as cycling, walking, and running. The development of the trail is strongly supported by the Goulburn Valley Trail Group, a dedicated group of local stakeholders who have been driving this initiative. The group has garnered support from the community, businesses, and government agencies.

Through an investment logic mapping workshop with specialists in the public sector, trail network design, regional planning, and economic development several project benefits were confirmed.

Theme	Benefit	KPI
Economic	Support the Goulburn Valley's reputation as a sustainable tourism region	Increased tourism spend in the area Increased places visited per year
Health	Higher levels of physical and mental wellbeing	Increased participation in active travel Reduced cyclist fatalities
Environmental	More use of the region's parklands	Increased visitors to regional parks Fewer incident-related related report recorded

#### Scope

To further understand the feasibility and benefits of the project, the following components are presented in this report:

- A summary of the proposed trail network and the land management and environmental implications
- Trail design and development considerations
- Opinion of probable costings focusing on the physical construction of the trail (excluding, for example, detailed environmental and cultural heritage assessment)
- An overview of the further project requirements and approvals
- A socio-economic assessment calculating the benefit-cost-ratio of the project.

#### **Key Findings**

The proposed Goulburn River Trail presents an opportunity to enhance the region's recreational and tourism offerings. Key findings from the exploratory study include:

- The proposed alignment is generally feasible, leveraging existing trails where possible to minimise costs and environmental impact. However, challenges related to land ownership, access, and environmental sensitivities need to be carefully addressed. For example, an agreement between Parks Victoria and Greater Shepparton City Council is mandatory for project success due to the crossover of land ownership and ongoing asset management and maintenance requirements.
- The trail requires significant investment in infrastructure, including path construction, signage, and supporting
  facilities such as rest stops. The opinion of probable costs focuses solely on infrastructure costs and is considered in
  four ways, an estimated fee for a 3m wide trail using gravel or bitumen and including or excluding provisional items.
  Provision items tend to include longer-term infrastructure outcomes. The total ranges from approximately \$5,000,000
  to \$14,600,000 based on different materials and approaches that could be taken.
- The project must adhere to environmental regulations, particularly regarding native vegetation and waterway crossings. Detailed environmental and cultural heritage assessments are required, and the outcomes of these should influence the final alignment of the trail.
- The trail has the potential to generate social and economic benefits through increased tourism, local business activity, and improved community health and well-being. The cost-benefit analysis indicates that the Goulburn River Trail project is financially viable, with benefits outweighing costs. The net present value (NPV) is positive, and the benefit-cost ratio (BCR) exceeds 1, suggesting a strong return on investment. Beyond the quantifiable benefits, the trail is expected to improve community health, safety, and quality of life. It will also stimulate local economies by attracting tourists and supporting businesses.

• To maximise the project's benefits, it is recommended to proceed with developing an investment-ready project plan. This plan should outline the detailed design, construction timeline, and ongoing maintenance strategies.

#### **Next Steps**

To ensure the successful implementation of the Goulburn River Trail, several key actions are recommended:

- Resolve the ownership of the Goulburn River Trail assets before proceeding with development.
- Establish a project governance committee comprising key stakeholders to oversee the project.
- Progress and secure leasing agreements from Parks Victoria.
- Establish the identity of the trail.
- Identify and secure funding for detailed environmental and cultural heritage assessments.
- Conduct detailed site investigations and assessments to reflect current site conditions accurately and identify
  potential environmental and cultural heritage impacts. This should guide the finalisation of the preferred trail
  alignment.

The Goulburn River Trail Exploratory Study demonstrates the strong potential of a connected trail network along the Goulburn River. This project will deliver social, economic, and environmental benefits, including improved health, increased tourism, and stronger community connections. To realise these benefits, the project should progress to the next stage, addressing the key recommendations outlined in this report.

# 1. Introduction

### 1.1 Purpose of the Report

A group known as the Goulburn River Trail Group has prepared the *Goulburn River Trail Feasibility Study* (Feasibility Study) and *the Goulburn River Trail Development Report* (Development Plan) to develop a 46km long, multi-use, predominantly off-road, unsealed trail suitable for cycling, walking, running and horse riding from Shepparton to Murchison, via Mooroopna, Toolamba and Old Toolamba, with a 12km link to Tatura.

To better understand the cost and infrastructure requirements of any trail, this Exploratory Study undertakes a more detailed feasibility study and accompanying socio-economic assessment that seeks to identify the alignment, construction, and planning issues before preparing detailed designs and costings.

The report includes:

- Overview of the trail network (summary of peer review findings)
- A summary of the infrastructure required to support the development of the trail
- Cost estimates for proposed infrastructure
- Planning permit and other approvals required
- Areas that warrant further investigation
- A socio-economic analysis of the proposal (high-level business case)

### 1.2 The Proposal

The proposed Goulburn River Trail is a 46km long multi-use pathway, running between Shepparton to the north and Murchison to the south, as shown in Figure 1-1. Key town linkages along the trail include Mooroopna, Toolamba and Old Toolamba, with the trail generally following the course of the Goulburn River. A 12km link to Tatura to the west is also envisaged, referred to as the Jodie Ridges Trail. The trail aims to create a multi-use route for mountain bikes, recreational bike riding, trail runners and walkers of mixed abilities and ages.

### 1.3 Rationale for Investment

The shared vision for the Goulburn River Trail created the Goulburn Valley Trail Group (GV Trail Group) which has become a key stakeholder in the development of the trials. The GV Trail Group was formed to promote the development of the trail network, which originated from a need identified by the Mooroopna, Tatura, Toolamba and Murchison communities to link the townships by walking and cycling paths. It is proposed this would generate several benefits for individuals, the wider community, and local businesses, including:

- 1. Improving the safety of kids and adults when travelling to and from school or work by creating a designated commuter trail.
- 2. Providing additional outdoor recreation options, complementary to the existing walking and cycling opportunities in the area, to improve health outcomes for the local population. The additional facilities can also be used by schools or for events.
- 3. Creating social connectivity between the townships along the Goulburn River.
- 4. Increasing tourism visitation leading to greater business activation, driving economic growth.
- 5. Improved environmental protection by allowing users to gain a larger appreciation of natural assets and undertaking regular maintenance or conservation activities.

To achieve these objectives, Greater Shepparton City Council is mindful of designing a trail network that showcases the key attractions of the region, is complimentary to and links with existing trails, and provides a range of tracks catering to all rider ages, abilities, and a wide range of use types.

The Feasibility Study developed in 2020 highlights several similar trails in regional Victoria to estimate the likely usage and tourism patterns that would result from its delivery. It conservatively suggests that 10,317 people will use the trail annually, creating 2 additional jobs and returning economic benefits of approximately \$233,000 annually in the area covered by Greater Shepparton City Council.

Council is seeking for this development to form part of a broader vision of improving trail connectivity with those in the surrounding regional areas, including the Northern and North-East Victorian trail system as well as those in the outskirts of Melbourne.







Source: Goulburn River Trail Feasibility Study 2020 prepared by Community Vibe

### 1.4 Stakeholder and Community Support

#### 1.4.1 The Goulburn Valley Trail Group

The development of the proposed trail is strongly supported by the GV Trail Group. The group includes representatives from Murchison, Tatura, Toolamba and Mooroopna and was specifically formed to develop this trail.

The GV Trail Group have received widespread support to further progress plans for a trail network from the community, businesses, and government. This has been in the form of consultation, letters of support and funding. The organisations that have endorsed the plans are Greater Shepparton City Council, Tatura Rotary Club, Toolamba Lions Club, Goulburn Valley Mountain Bike Club, Tatura 200, Tatura Milk Industries Pty Ltd and Bega Cheese Limited.

A high-level overview of the feedback is as follows:

- Economic development arising from the trails by attracting visitors to the region.
- Enabling a safer route for children to travel to school.
- Expanding the types of recreational opportunities offered locally and catering to a wider variety of residents and tourists.
- Providing opportunities for residents to commute to work via the trail.
- Improving the liveability of the region and environmental outcomes by connecting people with nature.
- Alignment with state and council plans and strategies.



#### 1.4.2 Parks Victoria

Parks Victoria is now a Statutory Authority under the Parks Victoria Act 2018 and as such any projects that occur on Parks Victoria land (Arcadia Streamside Reserve & Shepparton Regional Park) would require Parks Victoria support and approval as part of the Statutory Planning process; without Landowner / Land Manager Consent the project cannot proceed. Parks Victoria supports the proposal but requires more certainty on the land management agreements before endorsing the development of the trail.

#### 1.4.3 Yorta Yorta

The Yorta Nation Aboriginal Corporation (YYNAC) was established in 1999, it has set up a Traditional Owner Land Management Board, which the Victorian government recognises, can and does facilitate improved decisions that can address specific and complex environmental issues and problems. As the study area is located in Yorta Yorta Country, the Yorta Yorta people have a say in the management of their traditional land, which makes them a key stakeholder for the Goulburn River Trail. A representative from YYNAC is on the Project Board for the Goulburn River Trail.

#### 1.4.4 RiverConnect

RiverConnect is a community government partnership program under the auspice of Greater Shepparton City Council and jointly funded by the Goulburn Broken Catchment Management Authority. RiverConnect aims to foster the community enjoyment, respect and connection to the Goulburn and Broken river environments through engaging events, collaborative projects and education programs. It also aims to maintain and build relationships with 50 groups and organisations and seeks funding from government and 'non-traditional' source consistent with RiverConnect aspirations. For these reasons, RiverConnect and its participants a key stakeholder for the Goulburn River Trail project.

### 1.5 Expected Outcomes and Benefit

The expected outcomes and benefits of the project link to the aspirations of the key stakeholders. This was defined through an investment logic mapping (ILM) workshop with specialists in the public sector, trail network design, regional planning, and economic development coming together to discuss and agree on the core issues, potential benefits, and responses. These workshops helped confirm the investment need by holistically defining the problem, benefits, response, and solution before developing this exploratory study.

The second part of the workshop focused on defining the benefits of the proposed project. The session aimed to ensure that participants were aligned with and understood the initial problem statements. A crucial part of this workshop was the identification of 1-2 key performance indicators (KPIs) for each defined benefit, adhering to three critical tests to ensure their effectiveness:

- 1. **Measurability:** The KPIs must be straightforward to measure and easily obtainable by Council and/or its partners, ensuring that tracking progress is both feasible and practical.
- 2. **Relevance:** This involves defining clear outputs (such as the trail network) and outcomes (such as increased visitation) associated with the project. The objective is to provide confidence that the anticipated benefits are likely to be realised, showcasing the direct impact of the project.
- 3. **Attribution:** It must be evident that the primary reason for any positive movement in the selected KPIs is directly attributable to the initiative itself, although it may not be the sole reason for such improvements.

This workshop served to solidify the benefits framework of the project, by confirming the alignment with the ILM and establishing measurable, relevant, and attributable KPIs, thereby setting a robust foundation for assessing the project's success and its impact on the Shepparton community. This is summarised in Figure 1-2. Refer to the Final ILM at Appendix A for the full investment story.

#### Figure 1-2 ILM Workshop Outputs

Theme	Benefit	КРІ
ECONOMIC	Support the Goulburn	Increased tourism spend in area
ECONOMIC	sustainable tourism region	Increased places-visited per trip
	Higher levels of physical and	Increased participation in active travel
HEALTH	mental well-being	Reduced cyclist fatalities / KSI
	More use of the region's	Increased visitors to regional parks
ENVIRONMENT	parklands	Fewer incident related reports recorded

Source: Prepared by Stantec

# 2. The Trail Network

### 2.1 Trail Overview

The Goulburn River Trail is defined as a shared-use recreational trail. Currently, portions of the trail exist between townships within Greater Shepparton. The proposed extension links these alignments to create an interconnected network, increasing amenity value for community members and sightseeing opportunities for tourists.

### 2.2 Existing Trails

The Goulburn River Trail should be viewed as part of a collection of trails in the Shepparton region. There are a few existing shared pathways catering to walkers and cyclists within the Greater Shepperton area.

Most of the infrastructure for the Goulburn River Trail already exists in the form of bush tracks, backroads, and existing trails. Some trails are already used informally by walkers and riders. Other informal uses include 4 Wheel Drives (4WD) and motorbikes which historically have caused harm to the forest. The existing shared paths and Goulburn River alignments are summarised in Table 2-1.

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Trail	Location	Description	Length (km)	Surface
Shared pathway	North Shepparton at Water's Reserve to Mooroopna and Kialla Lakes	Includes forest and river environments and is connected in places by on-road access links.	13	Combination
Rail trail	Dookie	Short, scenic ride for cyclists through a classic Australian cropping landscape.	9.3 (return)	Sealed gravel path
Rail Trail	Murchison	Follows part of the former Rushworth- Murchison to Melbourne railway, and offers a short, scenic cycle or walk through the significant river red gum wetlands of Doctor's Swamp	7.2	Unsealed, fine gravel
Jodie Ridges Trail	Rear of Victoria Park Lake, large suspension bridge near Aquamoves. Finish is Cussen Park in Tatura or vice versa.	This trail is in memory of Jodie Ridges, a young mother of four who whilst riding for fitness along the Midland Highway in 2010 was involved in a collision with a motor vehicle and later tragically died from her injuries. The scenic ride links Shepparton to Tatura via dedicated cycle paths, minor roads, and bush tracks.	22 (one- way)	Sealed road and bush track

Source: Cycling Guide. Available at: Cycling Guide 2017 Web.pdf (greatershepparton.com.au), Shepparton and Goulburn Valley. Available at: Cycling & Walking | Shepparton & Goulburn Valley (sheppandgv.com.au)

### 2.3 Trail User Profiles

To provide the community and visitors with a trail suitable to the unique nature and demographic of this region, a trail profile assessment was conducted to further understand the user types, activities and needs of the trail. This user assessment considered all areas of alignment, including connections between townships such as Toolamba and Old Toolamba, proximity to schools and businesses, housing density, and existing trail and recreational facilities.

The results identified the highest proportion of users are likely to be nature and adventure seekers (20%), families (20%), and commuters (15%), participating in activities like, mountain bike riding, cycling, hiking, walking, and jogging. The current usage and estimated uptake, if the trail were to be extended, are calculated in Section 6.1.1.





Given the wide variety of user types that are anticipated to use the trail, trail types should be designed to cater to a variety of activities. Drawing on the results of the trail profile assessment identified the following trail types as important in catering to the community and visitors:

- Footpath
- Trail bike path (unsealed or gravel)
- Bikeway (sealed)
- Disability access

Figure 2-2 shows trail bike paths had the highest proportion of users (50%). These are unsealed pathways which can be utilised by a large proportion of footpath users (15%).

Figure 2-2 Trail Type Associated with User Types





### 2.4 Trails Accommodating Equestrian Use

It is understood that there is a community value in the project region for equestrian support infrastructure, including trails. Through the User Type Assessment, Stantec identified approximately 5% of users (combined residents and visitors) would utilise these types of equestrian trails.

According to Austroads Part 5, where permitted, horses may share paths with pedestrians. However, safety measures would need to be implemented to address the conflict with horses and bicycles. Rail Trails Australia guidance suggests that 'ideally a separate dirt path beside the main trail should be provided for horses' (Rail Trails Establishment Guidelines, 2015, p.2). In addition, dog walkers often see horse activity as a deterrent to trail usage.

The addition of horses to trails has the potential to limit usability due to conflict of interest between bikes, horses, and dogs walking. It is assumed that including horses within a trail alignment would require either significant trail widening with user segregation or separate trail alignment for safety purposes. Due to this, equestrian use has been removed from the preferred option alignment. However, due to the size of the project area additional trail routes could be implemented at later stages to cater for equestrian activities.

While this project trail design does not specifically cater for equestrian activities, it would be up to Council and landowners whether equestrian usage is permitted in areas of the alignment. It is recommended that these areas be clearly identified with signage.

### 2.5 The Proposed Routes

Figure 2-3 outlines the proposed routes which consider the different alignments presented in the Development Report (2020) and proposed new alignments developed by Stantec based on findings from the site visit.

The routes are divided into two sections each comprising subsections, with an additional connection to Tatura, as follows:

- Section 1: Mooroopna to Toolamba 22.7 km.
  - 1a Mooroopna to Pyke Road via Common Track
  - 1b Pyke Road to Pogue Rd
  - 1c Pouge Road to Toolamba Township
- Section 2: Toolamba to Murchison 23.3 km.
  - 2a Toolamba to Old Toolamba
  - 2b Cemetery Roadside Path
  - 2c Toolamba Cemetery to River Road
  - 2d River Road to Channel Crossing
  - 2e Channel Crossing to River Road, Murchison
- Tatura Connection: The proposed path connection to Tatura 12 km.

Figure 2-3 The Proposed Routes



Source: Prepared by Stantec

### 2.6 Assessment of the Preferred Alignment

The Peer Review finalised in October 2023 presented the route options for the trail network to key stakeholders. The outcome of the Peer Review was the recommendation of a proposed route alignment.

The suggested alignment, outlined in Figure 2-4, includes sections of track pre-determined by the Development Report and minor revisions proposed by Stantec. The assessment was informed by:

- A review of the Development Report prepared by Destination Trails in 2020
- A review of the Feasibility Study commissioned by the Goulburn Valley Trail Group in 2020
- Site inspection and walkover
- Site constraints such as limited to no available access to routes due to flooding or private land ownership
- Stakeholder engagement with representatives from the Goulburn Valley Trail Group
- Stakeholder engagement with Parks Victoria
- Desktop review of planning, environmental and cultural heritage factors
- A critical assessment of each section of the proposed alignment



• A review of the proposed costings.

The suggested alignment utilises the existing trails and parking facilities within the project area to provide minimal impact to the landscape while allowing for aesthetic, practical trails that will have maintenance stability relating to flood impacts and creek erosion, supporting project longevity.

The alignment has been used to develop concept designs and infrastructure needs for more accurate costings.



Figure 2-4 The Suggested Alignment Based on Peer Review

Source: Prepared by Stantec

Refer to Appendix B for the details and assessment of each trail section (Section 1a to 2e and the Tatura connection).

# 2.7 Land management and environmental Implications

#### 2.7.1 Land Management Agreement

Agreement between Parks Victoria and Greater Shepparton City Council is mandatory for project success due to the crossover of land ownership and ongoing asset management and maintenance requirements. The discussion of land management and ongoing maintenance of the trails with public land managers is encouraged to remain a priority.

#### 2.7.2 Ecological

DEECA Victorian Biodiversity Atlas (VBA) maintains a register of threatened flora and fauna species in Victoria. A VBA search generated on 31 January 2023 for threatened flora and fauna species within a 5km radius from the investigation area within the last 20 years determined that 15 threatened flora species and 44 threatened fauna species have been recorded (DEECA 2022a) in the study area. Refer to Appendix C for the list of threatened species within the Flora and Fauna Desktop Assessment.



Inspection of aerial imagery and VBA records suggest there may be suitable habitat for threatened species in and around the study area (see Figure 2-5).

Figure 2-5 VBA Fauna Records



Source: DEECA (2022) VicPlan. Victoria State Government Department of Environment, Land, Water and Planning, Melbourne. Available at: <a href="https://mapshare.vic.gov.au/vicplan/">https://mapshare.vic.gov.au/vicplan/</a>

Refer to Appendix C for the full Flora and Fauna Desktop Assessment.

#### 2.7.3 Flooding

A majority of the route is located on the Goulburn River floodplain, causing a long history of flooding in the Shepparton, Mooroopna and Murchison areas. Figure 2-6 visualises the impact of flooding, surface runoff and other significant water features to the proposed route. This was developed using flood depth data and observations of the surface levels using LiDAR and GIS software MapInfo for sections where this was unavailable. Figure 2-6 1% AEP Flood Depth vs Trail Route Existing Conditions



Source: GBCMA data, LiDar and GIS software Mapinfo prepared by Stantec



#### 2.7.4 Cultural Heritage

The study area holds significant Aboriginal cultural heritage. The Yorta Yorta peoples previously launched a Native Title claim which sought confirmation of the continuation of native title over forests and other public lands along the Murray and Goulburn Rivers. Figure 2-7 highlights the areas within the native title claim. The Traditional lands cover around 20,000 square kilometres. This land is a unique area of forest wetlands where traditional lifestyles are based on fishing and collecting a variety of food sources from the land on which they live. However, it was determined by the Federal Court of Australia that the Native Title does not exist.

Whilst there is no obligation to notify, it is recommended that consultation with the Yorta Yorta is undertaken to inform them of the proposed works within Crown land as the study area is associated with multiple areas of Cultural Heritage Sensitivity (see Figure 2-8), swamp/wetlands, prior waterways, and previously registered Aboriginal Places. Additionally, the Project design and associated impacts should align with the YYNAC aspirations in alignment with Schedule 2 of the YYNAC cooperative Management Agreement (DEECA, 2024). While the project's preferred alignment has been selected to utilise existing trails where possible, a significant portion of the proposed trails are within vegetated areas closer to Goulburn River and should ensure that cultural heritage is not harmed as both parks are Areas of High Cultural Heritage Sensitivity under the Aboriginal Heritage Act 2006.



Figure 2-7 Native Title Claim

Source: National Native Title Mapping, 2023







Source: Victoria Aboriginal Heritage Register reproduced in the Aboriginal Cultural Heritage Due Diligence Assessment undertaken by Red Gum Environmental Consulting

Refer to Appendix F for the Aboriginal Cultural Heritage Due Diligence Assessment undertaken by RedGum Environmental Consulting in December 2023.

#### 2.7.5 Heritage

The Heritage Rivers Act 1992 makes provisions for Victorian heritage rivers by providing for the protection of public land in particular parts of rivers and river catchment areas in Victoria which have significant nature conservation, recreation, scenic or cultural heritage attributes. The Goulburn River is a Heritage River under the Heritage Rivers Act 1992, as such



the Project, ongoing operation and maintenance need to be designed to enhance the Goulburn River environs in alignment with the Act.



# 3. Trail Design and Development Considerations

### 3.1 The Trail

The Goulburn River Trail has been designed to deliver the following:

- A network that works with the natural environments
- Connects locals and visitors with rural townships
- Provides a shared path to cater for diverse user groups and all ages and levels of riding ability.

The suggested alignment and design aim to keep costs low to accelerate its delivery.

### 3.2 Site Condition Considerations

During the recent site visit, the condition of the trail, particularly in the northern section, was found to be significantly different from what was reported in 2020. While some sections were in good condition and would require minimal maintenance, recent environmental events, including flooding, have noticeably impacted the trail (see Figure 3-1). Due to these events, certain areas were inaccessible during the site visit, leaving the full extent of the damage in the northern section unknown. This highlights the need for a more comprehensive assessment to reflect current site conditions accurately.

Figure 3-1 Trail Conditions at Mooroopna Station in 2023



Source: Site visit, Stantec

### 3.3 Trail Design Standards

The trail will be designed in accordance with the requirements of the Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling. In line with Austroads guidance (see Figure 3-2), it is recommended that the path meets the desirable width of a regional shared path<sup>1</sup>. The preferred design is a 3m wide compact gravel path to accommodate all relevant user groups, however, a dirt path may also be acceptable.

Figure 3-2 Shared Path Widths

		Suggested path width (m)	
	Local access path	Regional path <sup>(3)</sup>	Recreational path
Desirable minimum width	2.5	3.0	3.5
Minimum width – typical maximum	$2.0^{(1)} - 3.0^{(2)}$	$2.5^{(1)} - 4.0^{(2)}$	$3.0^{(1)} - 4.0^{(2)}$

1 A lesser width should only to be adopted where cyclist volumes and operational speeds will remain low.

2 A greater width may be required where the numbers of cyclists and pedestrians are very high or there is a high probability of conflict between users (e.g. people walking dogs, in-line skaters etc.).

3 May be part of a principal bicycle network in some jurisdictions.

Source: AGRD Part 6A Table 5.3

Figure 3-3 Gravel Path at the Southern Section of the Trail (Murchison)



Source: Site visit, Stantec

<sup>&</sup>lt;sup>1</sup> Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling does not define regional paths, however, it states regional paths should be 4.0 m wide to permit bike riders/couples to pass pedestrians couples, or to permit bike riders travelling in opposite directions to pass pedestrians with convenience and safety. 2.5 and 3.0 m are the absolute minimum widths for paths having a predominance purpose of commuting and recreation respectively, during periods of peak use.



### 3.4 Safety Considerations

The following safety issues have been considered during the design of the trail:

- A 3m wide shared path has been considered to accommodate diverse user groups such as people walking and riding.
- The trail has been designed to reduce interaction with vehicle traffic. An off-road shared path with the appropriate buffer has been suggested where the trail runs parallel to the road.
- Measures, such as the trail material and barriers, to deter unauthorised vehicle access such as 4WD and motorbikes.
- A significant amount of new signage has been proposed along the route to address safety concerns and provide navigation and orientation. Wayfinding signage is to be installed to increase comfort for trail users.

### 3.5 Concept Designs

Concept designs have been created to understand the infrastructure required to support the trail development. Maps have been developed using the suggested alignment to demonstrate how the trail fits within the context of the existing environment and publicly available information on zoning, land use, and risk areas. Refer to Appendix E for the full package of maps.

The full set of drawings displays the alignment, with chainage markers to indicate the approximate anticipated length and direction of the trail. Factors considered in developing the alignment were the use of existing trails where practicable and safe. Existing trails along the Goulburn River provide an invaluable starting point for trail development, reducing cost and extending the life of the existing infrastructure with maintenance and upgrades where needed. The maps are to be read in conjunction with the reporting which provides context on the specific areas of trails. The map package includes the following sheets: cover page (see Figure 3-4); horizontal alignment maps; vertical alignment grades and typical cross sections.



#### Figure 3-4 Concept Designs Cover Sheet



#### 3.5.1 Horizontal Alignment Maps

The horizontal alignment of the trail follows design principles for minimum radii and lengths and ties into existing trails. As the trail is intended for walking and cycling for a range of user types, there are multiple entry and exit points in each section, with wayfinding signage that allows users to find sections of the trail that are most suitable and attractive to them. Larger curves are preferred to provide greater sight distance, especially in areas where the trail is going through denser vegetation, with consideration to ease of riding to cater to all user skill levels.





#### 3.5.2 Vertical Alignment and Grades

The vertical alignment of each section of the trail is depicted in an elevation profile based on the publicly available GISlevel data. The sections follow the natural terrain, and the profiles show the approximate grades across the section. While the profiles show a high-level indication of the expected grades, this combined with the understanding gathered from site visit observations has been used to determine likely areas of required infrastructure works either new or improved existing infrastructure. Grades generally fall within the acceptable range as per Austroads AGRD Part 6A<sup>2</sup>.

<sup>&</sup>lt;sup>2</sup> Figure 5.6 in Austroads AGRD Part 6A shows the maximum length of uphill gradient acceptable to cyclists.



#### Figure 3-6 Example Elevation Profile



#### 3.5.3 Typical Cross Sections

Three typical cross-sections are introduced below.

1. Existing 3.0m shared path with gravel or sand dust surface.

This cross section uses an existing shared path with typical verge on either side of the useable clear width. In areas where gravel or sand dust is used, the material is proposed to be assessed for any maintenance needs, including levelling uneven surfaces and clearing vegetation within the 3.0m wide path. Where this cross section is adjacent to the river bank, at least 5 metres of flat land acts as a buffer to the top of bank.





#### 2. New roadside shared path

The typical cross section for the roadside section of the trail requires adequate width of buffer zone adjacent to the road to protect users from motorised traffic. A minimum 2m wide natural buffer such as trees would be sufficient in this setting. In high speed zones this buffer may also have fencing for extra protection, noting that there is a clear distance requirement to the fence line to protect walkers and riders from the fence as a hazard itself.





3. Existing 3.0m shared path riverside with mud surface



Similar to the existing shared path with gravel or sand dust surface, the mud surface riverside path uses established trails. There is again a need for maintenance and clearing to achieve a 3.0m wide trail where possible.

Figure 3-9 Existing Shared Path Riverside with Mud Surface



### 3.6 Signage

#### 3.6.1 Wayfinding and Interpretive signage

There needs to be significant wayfinding signage and good-sized signage throughout this trail. Trail identification signage will be erected on signage poles at key intersections and within associated carparks.

Trailhead maps and information signs should be placed at all major townships (Murchison, Tatura, Mooroopna, Toolamba, Old Toolamba, and Shepparton) to direct users to the trails and inform them of trail options and proximity to key features (such as trailheads, toilets, carparks).

Figure 3-10 Trailhead Sign



Source: Geelong City Council

In addition to advertising and trail information, trailhead and wayfinding signage and First Nations culture in the creation of installations can provide links to key cultural and community features, increasing the sense of place. These cultural and community aspects can be in the form of historic imagery within signs, facts about the region, flood impact area statistics, local art installations and/ or information on the native environment. These additions will add an educational element to the trail alignment and provide a sense of community contribution. It is recommended that local groups (such as bush care, libraries, art school etc) are included in the creation of these installations.



Figure 3-11 Example of Cultural Linkages - The Flats, Mooroopna



Source: Shepperton and Goulburn Valley

Smaller wayfinding signs are placed at intersections of routes and decision points to allow users to navigate the trail. These need to be easily visible and at a suitable height for both walkers and riders.

Figure 3-12 Example of Smaller Wayfinding Signs



Source: Narooma NSW

#### 3.6.2 Regulatory and Warning Signs

Regulatory and warning signs are required throughout the trail to both alert users and the public of hazards and conflict points. Shared path signs should only be required intermittently where it is reasonable that people are entering from one zone type to a shared use area, for example, adjacent to roads and footpath connections. Shared use signs should not be required along the trail within the vegetated areas where it is reasonable to assume that users have been travelling on the path for some time, this also helps to reduce clutter and maintenance of signage.

Some priority give way signage may need to be introduced in areas that gather a high volume of users, especially over narrow bridge structures, however, initially, these can be omitted due to the low volume of users.



Recommended warning signs are for cattle grates, intersections of trails where the conflict point is not visible to those approaching, and areas where horses are permitted. Flood risk areas that have a high chance of inundation can be signposted for users suggesting alternative routes or to turn around to avoid unsafe use of the trail.

### 3.7 Supporting Infrastructure

The supporting infrastructure may differ for each of these user types; however, car parking and seating are identified as beneficial to all trail users. Each township (Murchison, Tatura, Mooroopna and Toolamba) will have a main trailhead location that is proposed within existing community land.

It is recommended that rubbish bins, a toilet block and a water station be included at trailheads where trail usage is expected to be most prominent.

Other critical elements that need to be considered to support visitor experience include seating and water fountains along the route to support accessibility and comfort, viewing platforms at key attractions near the river, and shade.

For a 50km trail these are key features to support the usability of the trail.

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Figure 3-13 Example benches at trailhead

Source: Hammond Rd Camp site

# 4. Opinion of Probable Costs

The opinion of probable costs for the proposed infrastructure has been developed from the concept designs. These estimates **focus solely on the physical construction of the trail** and **exclude** costs associated with:

- Approvals and assessments
- Detailed design required for construction.
- Ongoing maintenance
- Detailed environemental and cultural heritage assessments

The opinion of probable costs has been considered in four ways:

- Estimated fee for 3m wide compact gravel path including provision items
- Estimated fee for 3m wide compact gravel path excluding provision items
- Estimated fee for 3m wide bitumen path including provision items
- Estimated fee for 3m wide bitumen path excluding provision items

Provisional items include features such as a new off-road 3m wide shared path when a local road (e.g. Tatura link) already exists and can be utilised. Provision items tend to include longer-term infrastructure outcomes. The total ranges from approximately \$5,000,000 to \$14,600,000 based on different material and approaches that could be taken.

Cost estimates for each section of the trail are provided below, followed by a total sum.

No	Element	Unit / Assumption	Estimate- Compacted Gravel	Estimate- Compacted Gravel	Estimate- Bitumen in flood zones	Estimate- Bitumen in flood zones
1A	Section 1A - Mooroopna to Pyke R	load via	Incl. Provisional	Excl.	Incl. Brovisional	Excl.
1A-1	Assessment of pedestrian and cyclist safety and accessibility at Camp Street intersection	Consultant estimate	\$5,000	\$5,000	\$5,000	\$5,000
1A-2	Trail head welcome sign and information board	Landmark access point	\$10,000	\$10,000	\$10,000	\$10,000
1A-3	Gate and signage to existing access	Gate, sign and 3 bollards	\$4,500	\$4,500	\$4,500	
1A-4	Cyclist warning sign on Archer Street	sign small	\$500	\$500	\$500	\$500
1A-5	Keep left signs either side of island	sign small x 2	\$1000	\$1000	\$1000	\$1000
1A-6	Warning sign for bridge crossing and tracks	sign small x 2	\$1000	\$1000	\$1000	\$1000
1A-7	75m span pedestrian bridge over rail tracks and Goulburn River		\$1,125,000		\$1,125,000	
1A-8	Track construction	50m	\$7,500	\$7,500	\$7,500	\$7,500
1A-9	Wayfinding signage	every 1km	\$2,000	\$2,000	\$2,000	\$2,000
1A-10	Wayfinding signage at 1A & Tatura junction	sign small x 3	\$1,500	\$1,500	\$1,500	\$1,500
1A-11	Warning signs at cattle grids	sign small x 4	\$2,000	\$2,000	\$2,000	\$2,000
1A-12	Track upgrade and widening from dirt to 3m wide compact gravel track.	4800m	\$480,000	\$480,000	\$480,000	\$480,000
1A-13	Gully treatment. Ramp into and out with compacted gravel.	Gully Option 1. Ramp into and out with compacted gravel. 30m x 4	\$30,000		\$30,000	
1A-14	Arts trail activation elements (sculptures, relevant art pieces etc)	Spread over the 9 sections, or can be combined for larger pieces.	\$27,778	\$27,778	\$27,778	\$27,778



No	Element	Unit / Assumption	Estimate- Compacted Gravel	Estimate- Compacted Gravel	Estimate- Bitumen in flood zones	Estimate- Bitumen in flood zones
1A-15	Goulburn River viewing	Spread over the	\$28,751	\$28,751	\$28,751	\$28,751
	experience elements (i.e. seating	7 sections				
	platforms, seating, park benches,	touching the				
	trip facilities etc.)	river.	<b>A</b> E EE0	<b>A</b> E EE0	<b>A</b> E EE0	<b>A5 5 5 6</b>
1A-16	Interpretive signage, in addition to	Spread over the	\$5,556	\$5,556	\$5,556	\$5,556
	townshing, Coulburn Biver	9 sections, or				
	indigenous and cultural storytelling	combined for				
	etc.	larger pieces				
1A-17	Bitumen seal on prime seal	In flood zones			\$960.000	\$960.000
		4800m			+++++++++++++++++++++++++++++++++++++++	+++++++++++++++++++++++++++++++++++++++
1A-18	Access control (bollards)	1 set	\$1,500	\$1,500	\$1,500	\$1,500
	<u> </u>					
			\$1,814,405	\$578,405	\$2,693,405	\$1,533,905
	1A Options					
Note	Not included in totals. Deduct Item					
	1A-7 Bridge. Add in these options.					
1AO-1	Continue down Archer Street	New track 200m		\$30,000		\$22,000
	footpath, over existing vehicle rail					
	crossing in Archer Street and onto					
	new track to join into existing					
	common track.					
1AO-2	Replace bridge with boardwalk	New boardwalk		\$550,000		\$550,000
440.2	Under rail track.	100m		¢226 500		¢220.400
1AU-3	Archer Street reilwov crossing and	New track 410m,		\$336,500		\$320,100
	back minimal boardwalk say 50m	50m				
	Back, minimal boardwark say 30m	3011				
			\$1,814,405	\$1,494,905	\$2,693,405	\$2,426,005

No	Element	Unit / Assumption	Estimate- Compacted Gravel	Estimate- Compacted Gravel	Estimate- Bitumen in flood zones	Estimate- Bitumen in flood zones
Т	Section Tatura - Dhurringile Road	to Mahoney	Incl.	Excl.	Incl.	Excl.
T 4	I rack via Pyke Road CHUU to CH1	0056 (10.05KM)	Provisional ©7.000	Provisional ©7.000	Provisional ©7.200	Provisional ©7.000
1-1	wayinding signage	7 intersections	\$7,200	\$7,200	\$7,200	\$7,200
T2	Provisional Item - New offroad 3m wide path.	10056m	\$804,480		\$402,240	
Т3	Vegetation removal	Trim branches	\$40,000	\$40,000	\$40,000	\$40,000
T4	Arts trail activation elements	Spread over the	\$27,778	\$27,778	\$27,778	\$27,778
	(sculptures, relevant art pieces	9 sections, or				
	etc)	can be				
		combined for				
		larger pieces.				
Т5	Interpretive signage, in addition to	Spread over the	\$5,556	\$5,556	\$5,556	\$5,556
	wayfinding signage, focus on	9 sections, or				
	townships, Goulburn River,	can be				
	indigenous and cultural storytelling	combined for				
	etc.	larger pieces.				
		Total	\$856,480	\$52,000	\$454,240	\$52,000
1B	Section 1B - Pyke Road junction t	o Pogue Road	Incl.	Excl.	Incl.	Excl.
	CH4800 to CH11250 (6.4km)		Provisional	Provisional	Provisional	Provisional
1B-1	Wayfinding signage	every 1km	\$3,000	\$3,000	\$3,000	\$3,000
1B-2	Upgrade path	Existing 5m dirt path, upgrade	\$516,000		\$516,000	\$516,000



No	Element	Unit / Assumption	Estimate- Compacted Gravel	Estimate- Compacted Gravel	Estimate- Bitumen in flood zones	Estimate- Bitumen in flood zones
		central 3m to compact gravel. 6,450m				
1B-3	New trail head	New information sign, picnic tables x 2, seating x 2, water fountain.	\$40,000	\$40,000	\$40,000	\$40,000
1B-4	Arts trail activation elements (sculptures, relevant art pieces etc)	Spread over the 9 sections, or can be combined for larger pieces.	\$27,778	\$27,778	\$27,778	\$27,778
1B-5	Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.)	Spread over the 7 sections touching the river.	\$28,751	\$28,751	\$28,751	\$28,751
1B-6	Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc.	Spread over the 9 sections, or can be combined for larger pieces.	\$5,556	\$5,556	\$5,556	\$5,556
1B-7	Bitumen seal on prime seal.	In flood zones,. 5950m			\$1,190,000	\$1,190,000
1B-8	Access control (bollards)	2 sets	\$3,000	\$3,000	\$3,000	\$3,000
		Total	\$623 905	\$107 905	\$1 813 905	\$1 813 905
			<i><b>+u</b>_<b>u</b>,<b>u u</b></i>	<i><b>•</b>·•·;•••</i>	<i><b>↓</b>.,<b>¢¢</b>,<b>¢</b>.<b>¢</b></i>	<i><b>↓</b>.,<b><i>u</i></b>.,<b><i>u</i></b>.,<b><i>u</i></b>.,<b><i>u</i></b>.,<i>u</i>.,<i>u</i>.,<i>u</i>.,<i>u</i>.,<i>u</i>.,<i>u</i>.,<i>u</i>.,<i>u</i></i>
1C	Section 1C - Pogue Road to Wren	Street CH11250	Incl.	Excl.	Incl.	Excl.
1C	Section 1C - Pogue Road to Wren to CH16200 (5.0km)	Street CH11250	Incl. Provisional	Excl. Provisional	Incl. Provisional	Excl. Provisional
1C 1C-1	Section 1C - Pogue Road to Wren to CH16200 (5.0km) Wayfinding signage	Street CH11250 every 1km	Incl. Provisional \$2,500	Excl. Provisional \$2,500	Incl. Provisional \$2,500	Excl. Provisional \$2,500
1C 1C-1 1C-2	Section 1C - Pogue Road to Wren to CH16200 (5.0km) Wayfinding signage Upgrade existing dirt tracks to 3m wide compacted gravel.	Street CH11250 every 1km 3500m	Incl. Provisional \$2,500 \$350,000	Excl. Provisional \$2,500	Incl. Provisional \$2,500 \$350,000	Excl. Provisional \$2,500 \$350,000
1C 1C-1 1C-2 1C-3	Section 1C - Pogue Road to Wren to CH16200 (5.0km) Wayfinding signage Upgrade existing dirt tracks to 3m wide compacted gravel. Pram crossing at CH16250 McNamara	Street CH11250 every 1km 3500m Pram crossing	Incl. Provisional \$2,500 \$350,000 \$5,000	Excl. Provisional \$2,500 \$5,000	Incl. Provisional \$2,500 \$350,000 \$5,000	Excl. Provisional \$2,500 \$350,000 \$5,000
1C 1C-1 1C-2 1C-3 1C-4	Section 1C - Pogue Road to Wren to CH16200 (5.0km)         Wayfinding signage         Upgrade existing dirt tracks to 3m wide compacted gravel.         Pram crossing at CH16250         McNamara         New trail to South side Wren Street & West side train line.	Street CH11250 every 1km 3500m Pram crossing 625m	Incl. Provisional \$2,500 \$350,000 \$5,000 \$93,750	Excl. Provisional \$2,500 \$5,000 \$93,750	Incl.           Provisional           \$2,500           \$350,000           \$5,000           \$93,750	Excl. Provisional \$2,500 \$350,000 \$5,000 \$93,750
1C-1         1C-2         1C-3         1C-4         1C-5	Section 1C - Pogue Road to Wren to CH16200 (5.0km) Wayfinding signage Upgrade existing dirt tracks to 3m wide compacted gravel. Pram crossing at CH16250 McNamara New trail to South side Wren Street & West side train line. Provisional Item - Prime seal existing path	Street CH11250 every 1km 3500m Pram crossing 625m Southern side Wren Street, 375m	Incl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$30,000	Excl. Provisional \$2,500 \$5,000 \$93,750	Incl. Provisional \$2,500 \$350,000 \$5,000 \$93,750	Excl. Provisional \$2,500 \$350,000 \$5,000 \$93,750
1C         1C-1         1C-2         1C-3         1C-4         1C-5         1C-6	Section 1C - Pogue Road to Wren to CH16200 (5.0km)         Wayfinding signage         Upgrade existing dirt tracks to 3m wide compacted gravel.         Pram crossing at CH16250 McNamara         New trail to South side Wren Street & West side train line.         Provisional Item - Prime seal existing path         Arts trail activation elements (sculptures, relevant art pieces etc)	Street CH11250 every 1km 3500m Pram crossing 625m Southern side Wren Street, 375m Spread over the 9 sections, or can be combined for larger pieces.	Incl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$30,000 \$27,778	Excl. Provisional \$2,500 \$5,000 \$93,750 \$27,778	Incl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$27,778	Excl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$27,778
1C         1C-1         1C-2         1C-3         1C-4         1C-5         1C-6         1C-7	Section 1C - Pogue Road to Wren to CH16200 (5.0km)         Wayfinding signage         Upgrade existing dirt tracks to 3m wide compacted gravel.         Pram crossing at CH16250 McNamara         New trail to South side Wren Street & West side train line.         Provisional Item - Prime seal existing path         Arts trail activation elements (sculptures, relevant art pieces etc)         Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.)	Street CH11250 every 1km 3500m Pram crossing 625m Southern side Wren Street, 375m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river.	Incl.         Provisional         \$2,500         \$350,000         \$5,000         \$5,000         \$93,750         \$30,000         \$27,778         \$28,751	Excl. Provisional \$2,500 \$5,000 \$93,750 \$27,778 \$28,751	Incl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$93,750 \$27,778 \$27,778	Excl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$93,750 \$27,778 \$27,778
1C         1C-1         1C-2         1C-3         1C-4         1C-5         1C-6         1C-7         1C-8	Section 1C - Pogue Road to Wren to CH16200 (5.0km)         Wayfinding signage         Upgrade existing dirt tracks to 3m wide compacted gravel.         Pram crossing at CH16250 McNamara         New trail to South side Wren Street & West side train line.         Provisional Item - Prime seal existing path         Arts trail activation elements (sculptures, relevant art pieces etc)         Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.)         Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc.	Street CH11250 every 1km 3500m Pram crossing 625m Southern side Wren Street, 375m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces.	Incl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$30,000 \$27,778 \$28,751 \$28,751 \$5,556	Excl. Provisional \$2,500 \$5,000 \$93,750 \$93,750 \$227,778 \$228,751 \$28,751 \$5,556	Incl.         Provisional         \$2,500         \$350,000         \$5,000         \$93,750         \$93,750         \$27,778         \$28,751         \$5,556	Excl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$93,750 \$227,778 \$228,751 \$28,751 \$5,556
1C         1C-1         1C-2         1C-3         1C-4         1C-5         1C-6         1C-7         1C-8         1C-9	Section 1C - Pogue Road to Wren to CH16200 (5.0km)         Wayfinding signage         Upgrade existing dirt tracks to 3m wide compacted gravel.         Pram crossing at CH16250 McNamara         New trail to South side Wren Street & West side train line.         Provisional Item - Prime seal existing path         Arts trail activation elements (sculptures, relevant art pieces etc)         Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.)         Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc.         Bitumen seal on prime seal.	Street CH11250 every 1km 3500m Pram crossing 625m Southern side Wren Street, 375m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces. In flood zones,. 3200m	Incl.         Provisional         \$2,500         \$350,000         \$5,000         \$93,750         \$30,000         \$27,778         \$28,751         \$5,556         \$5,556	Excl. Provisional \$2,500 \$5,000 \$93,750 \$27,778 \$27,778 \$28,751 \$28,751 \$5,556	Incl.         Provisional         \$2,500         \$350,000         \$5,000         \$93,750         \$93,750         \$27,778         \$28,751         \$5,556         \$640,000	Excl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$93,750 \$227,778 \$228,751 \$28,751 \$5,556 \$5,556 \$640,000
1C         1C-1         1C-2         1C-3         1C-4         1C-5         1C-6         1C-7         1C-8         1C-9	Section 1C - Pogue Road to Wren to CH16200 (5.0km)         Wayfinding signage         Upgrade existing dirt tracks to 3m wide compacted gravel.         Pram crossing at CH16250 McNamara         New trail to South side Wren Street & West side train line.         Provisional Item - Prime seal existing path         Arts trail activation elements (sculptures, relevant art pieces etc)         Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.)         Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc.         Bitumen seal on prime seal.	Street CH11250 every 1km 3500m Pram crossing 625m Southern side Wren Street, 375m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces. In flood zones,. 3200m	Incl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$30,000 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556	Excl. Provisional \$2,500 \$5,000 \$93,750 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556	Incl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$93,750 \$27,778 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$640,000	Excl. Provisional \$2,500 \$350,000 \$5,000 \$93,750 \$93,750 \$227,778 \$228,751 \$28,751 \$5,556 \$640,000 \$644,000

No	Element	Unit / Assumption	Estimate- Compacted	Estimate- Compacted	Estimate- Bitumen in	Estimate- Bitumen in
2A	Section 2A - Wren Street to Toolar	nba Road	Incl.	Excl.	Incl.	Excl.
24-1	Wayfinding signage	every 1km	\$2 500	\$2 500	\$2,500	\$2 500
2A-1 2A-2	Upgrade existing trail to 3m wide compact gravel.	2,000 x 70% = 1,400m	\$140,000	\$2,300	\$140,000	\$140,000
2A-3	New trail	600m	\$90,000	\$90,000	\$90,000	\$90,000
2A-4	Vegetation clearance	600m	\$50,000	\$50,000	\$50,000	\$50,000
2A-5	New trail	2950m	\$442,500	\$442,500	\$324,500	\$324,500
2A-6	Vegetation clearance	1/2m either side	\$100,000	\$100,000	\$100,000	\$100,000
2A-7	Arts trail activation elements	Spread over the	\$27,778	\$27,778	\$27,778	\$27,778
	(sculptures, relevant art pieces	9 sections, or				
	etc)	can be				
		combined for				
		larger pieces.				
2A-8	Goulburn River viewing	Spread over the	\$28,751	\$28,751	\$28,751	\$28,751
	experience elements (i.e. seating	7 sections				
	platforms, seating, park benches,	touching the				
	trip facilities etc.)	river.				
2A-9	Interpretive signage, in addition to	Spread over the	\$5,556	\$5,556	\$5,556	\$5,556
	wayfinding signage, focus on	9 sections, or				
	townships, Goulburn River,	can be				
	indigenous and cultural storytelling	combined for				
	etc.	larger pieces.		• • • • •		
2A-10	Access control (bollards)	3 sets	\$4,500	\$4,500	\$4,500	\$4,500
2A-11	Roadside Barrier	Bitcon Road	\$155,000	\$155,000	\$155,000	\$155,000
		1,550m				
		Total	\$1.046.045	\$006.405	¢1 046 045	¢1 046 045
2R	Section 2B - Toolamba Boad to Bi	ver Road	Incl	500,405	Incl	51,040,045
20				EAUI		LAUI
	CH21300 to CH25300 (4.0km)		Provisional	Provisional	Provisional	Provisional
2B-1	CH21300 to CH25300 (4.0km) Wayfinding signage	every 1km	Provisional \$2,000	Provisional \$2,000	Provisional \$2,000	Provisional \$2,000
2B-1 2B-2	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East	every 1km 650m	Provisional \$2,000 \$52,000	Provisional \$2,000 \$52,000	Provisional \$2,000 \$52,000	Provisional \$2,000 \$52,000
2B-1 2B-2	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road.	every 1km 650m	Provisional           \$2,000           \$52,000	Provisional           \$2,000           \$52,000	Provisional           \$2,000           \$52,000	Provisional           \$2,000           \$52,000
2B-1 2B-2 2B-3	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer	every 1km 650m Tube stock	Provisional           \$2,000           \$52,000           \$13,000           \$1470,000	Provisional           \$2,000           \$52,000           \$13,000	Provisional           \$2,000           \$52,000           \$13,000           \$20,000	Provisional           \$2,000           \$52,000           \$13,000
2B-1 2B-2 2B-3 2B-4	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path	every 1km 650m Tube stock 2150m	Provisional           \$2,000           \$52,000           \$13,000           \$172,000	Provisional           \$2,000           \$52,000           \$13,000	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,770	Provisional           \$2,000           \$52,000           \$13,000
2B-1 2B-2 2B-3 2B-4 2B-5	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements	every 1km 650m Tube stock 2150m Spread over the	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$27,778
2B-1 2B-2 2B-3 2B-4 2B-5	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc)	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$27,778
2B-1 2B-2 2B-3 2B-4 2B-5	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc)	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$27,778
2B-1 2B-2 2B-3 2B-4 2B-5	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc)	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces,	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778	Provisional           \$2,000           \$52,000           \$13,000           \$27,778
2B-1 2B-2 2B-3 2B-4 2B-5 2B-5	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the	Provisional \$2,000 \$52,000 \$13,000 \$172,000 \$27,778 \$28,751	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$28,751	Provisional \$2,000 \$52,000 \$13,000 \$86,000 \$27,778 \$28,751	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$28,751
2B-1 2B-2 2B-3 2B-4 2B-5 2B-5	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778           \$28,751	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778           \$28,751	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751
2B-1 2B-2 2B-3 2B-4 2B-5 2B-5	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches,	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778           \$28,751	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778           \$28,751	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.)	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river.	Provisional \$2,000 \$52,000 \$13,000 \$172,000 \$27,778 \$28,751	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778           \$28,751	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6 2B-6	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778           \$28,751           \$55,556	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751           \$55,556	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778           \$28,751           \$55,556	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751           \$55,556
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6 2B-6	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778           \$28,751           \$5,556	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751           \$55,556	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778           \$28,751           \$5,556	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751           \$55,556
2B-1 2B-2 2B-3 2B-4 2B-5 2B-5 2B-6 2B-7	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River,	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778           \$28,751           \$5,556	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751           \$5,556	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778           \$28,751           \$5,556	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751           \$5,556
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6 2B-7	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for	Provisional \$2,000 \$52,000 \$13,000 \$172,000 \$27,778 \$28,751 \$5,556	Provisional         \$2,000         \$52,000         \$13,000         \$27,778         \$28,751         \$5,556	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778           \$28,751           \$5,556	Provisional           \$2,000           \$52,000           \$13,000           \$27,778           \$28,751           \$55,556
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6 2B-6	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc.	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces.	Provisional           \$2,000           \$52,000           \$13,000           \$172,000           \$27,778           \$28,751           \$5,556	Provisional         \$2,000         \$52,000         \$13,000         \$27,778         \$28,751         \$5,556	Provisional         \$2,000         \$52,000         \$13,000         \$86,000         \$27,778         \$28,751         \$5,556	Provisional         \$2,000         \$52,000         \$13,000         \$27,778         \$28,751         \$5,556
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6 2B-6 2B-7 2B-7	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc. Bitumen seal on prime seal.	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces. In flood zones,. 4000m	Provisional         \$2,000         \$52,000         \$13,000         \$172,000         \$27,778         \$28,751         \$5,556	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$28,751 \$28,751 \$5,556	Provisional         \$2,000         \$52,000         \$13,000         \$86,000         \$27,778         \$28,751         \$5,556         \$640,000	Provisional           \$2,000           \$52,000           \$13,000           \$13,000           \$27,778           \$28,751           \$55,556           \$640,000
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6 2B-6 2B-7 2B-7 2B-8 2B-8 2B-9	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc. Bitumen seal on prime seal. Roadside Barrier	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces. In flood zones,. 4000m Toolamba Road 4,000m	Provisional         \$2,000         \$52,000         \$13,000         \$172,000         \$27,778         \$28,751         \$5,556         \$400,000	Provisional         \$2,000         \$52,000         \$13,000         \$27,778         \$28,751         \$5,556         \$400,000	Provisional           \$2,000           \$52,000           \$13,000           \$86,000           \$27,778           \$28,751           \$55,556           \$640,000           \$400,000	Provisional         \$2,000         \$52,000         \$13,000         \$13,000         \$27,778         \$28,751         \$28,751         \$5,556         \$640,000         \$400,000
2B-1 2B-2 2B-3 2B-4 2B-5 2B-5 2B-6 2B-7 2B-7 2B-8 2B-8 2B-9	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc. Bitumen seal on prime seal.	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces. In flood zones,. 4000m Toolamba Road 4,000m	Provisional \$2,000 \$52,000 \$13,000 \$172,000 \$27,778 \$28,751 \$5,556 \$5,556 \$400,000	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$28,751 \$28,751 \$5,556 \$400,000	Provisional \$2,000 \$52,000 \$13,000 \$86,000 \$27,778 \$28,751 \$28,751 \$5,556 \$640,000 \$400,000	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$28,751 \$28,751 \$5,556 \$640,000 \$400,000
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6 2B-6 2B-7 2B-7 2B-8 2B-9	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc. Bitumen seal on prime seal.	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces. In flood zones,. 4000m Toolamba Road 4,000m	Provisional \$2,000 \$52,000 \$13,000 \$172,000 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$400,000 \$400,000	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$400,000 \$400,000	Provisional \$2,000 \$52,000 \$13,000 \$86,000 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$640,000 \$400,000 \$400,000	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$640,000 \$400,000 \$400,000
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6 2B-6 2B-7 2B-7 2B-8 2B-9	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc. Bitumen seal on prime seal. Roadside Barrier Section 2C - River Road CH25300	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces. In flood zones,. 4000m Toolamba Road 4,000m Total to CH31200	Provisional \$2,000 \$52,000 \$13,000 \$172,000 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$400,000 \$400,000 \$700,905 Incl.	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$400,000 \$400,000 \$28,905 Excl.	Provisional \$2,000 \$52,000 \$13,000 \$86,000 \$27,778 \$28,751 \$28,751 \$5,556 \$640,000 \$400,000 \$400,000 \$1,254,905 Incl.	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$640,000 \$400,000 \$400,000 \$400,000
2B-1 2B-2 2B-3 2B-4 2B-5 2B-6 2B-6 2B-7 2B-7 2B-8 2B-9	CH21300 to CH25300 (4.0km) Wayfinding signage New 3m wide compact trail to East side road. Planting buffer New off road path Arts trail activation elements (sculptures, relevant art pieces etc) Goulburn River viewing experience elements (i.e. seating platforms, seating, park benches, trip facilities etc.) Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc. Bitumen seal on prime seal. Roadside Barrier Section 2C - River Road CH25300 (5.9km)	every 1km 650m Tube stock 2150m Spread over the 9 sections, or can be combined for larger pieces. Spread over the 7 sections touching the river. Spread over the 9 sections, or can be combined for larger pieces. In flood zones,. 4000m Toolamba Road 4,000m Total to CH31200	Provisional \$2,000 \$52,000 \$13,000 \$172,000 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$400,000 \$400,000 \$700,905 Incl. Provisional	Provisional \$2,000 \$52,000 \$13,000 \$27,778 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$400,000 \$400,000 \$28,905 Excl. Provisional	Provisional \$2,000 \$52,000 \$13,000 \$86,000 \$27,778 \$28,751 \$28,751 \$5,556 \$5,556 \$640,000 \$400,000 \$400,000 \$1,254,905 Incl. Provisional	Provisional         \$2,000         \$52,000         \$13,000         \$13,000         \$27,778         \$28,751         \$28,751         \$55,556         \$640,000         \$400,000         \$1,168,905         Excl.         Provisional



No	Element	Unit / Assumption	Estimate- Compacted Gravel	Estimate- Compacted Gravel	Estimate- Bitumen in flood zones	Estimate- Bitumen in flood zones
2C-2	Extra wayfinding signage at River Road and Thompson Road intersection	2x	\$1,000	\$1,000	\$1,000	\$1,000
2C-3	Warning signage at Thompson Road crossing point.	2x	\$1,000	\$1,000	\$1,000	\$1,000
2C-4	Establish new roadside trail on River Road.	5950m	\$476,000		\$238,000	
2C-5	Planting buffer	2430m	\$48,600		\$48,600	
2C-6	New shared path bridge / boardwalk over channel	20m	\$110,000	\$110,000	\$110,000	\$110,000
2C-7	Rest Area (water tables, information sign)	Tables x 2, information sign	\$31,000	\$31,000	\$31,000	\$31,000
2C-8	Arts trail activation elements (sculptures, relevant art pieces etc)	Spread over the 9 sections, or can be combined for larger pieces.	\$27,778	\$27,778	\$27,778	\$27,778
2C-9	Interpretive signage, in addition to wayfinding signage, focus on townships, Goulburn River, indigenous and cultural storytelling etc.	Spread over the 9 sections, or can be combined for larger pieces.	\$5,556	\$5,556	\$5,556	\$5,556
2C-10	Roadside Barrier	Rive Road 5,900m	\$590,000	\$590,000	\$590,000	\$590,000
Total			\$1,293,933	\$769,333	\$1,055,933	\$769,333

NI-		Unit /	Estimate-	Estimate-	Estimate-	Estimate-
NO	Element	Assumption	Gravel	Gravel	flood zones	flood zones
2D	Section 2D - River Road CH31200	to CH35500	Incl.	Excl.	Incl.	Excl.
2D-1	Wayfinding signage	every 1km	\$2,000	\$2,000	\$2,000	\$2,000
2D-2	Extra wayfinding signage at Toolomba Road and River Road intersection	2x	\$1,000	\$1,000	\$1,000	\$1,000
2D-3	New off road shared path 3m wide compacted gravel	2050m	\$164,000		\$82,000	
2D-4	Vegetation clearing		\$50,000		\$50,000	
2D-5	Planting buffer	2050m	\$41,000		\$41,000	
2D-6	Widen existing weir access to	Use existing	\$110,000	\$110,000	\$110,000	\$110,000
	accommodate shared use for	concrete weir for				
	pedestrians and bikes (no vehicle).	support.				
2D-7	Upgrade existing dirt trail to 3m wide compact gravel.	2400m	\$240,000		\$240,000	\$240,000
2D-8	Arts trail activation elements	Spread over the	\$27,778	\$27,778	\$27,778	\$27,778
	(sculptures, relevant art pieces	9 sections, or				
	etc)	can be				
		combined for				
		larger pieces.				
2D-9	Goulburn River viewing	Spread over the	\$28,751	\$28,751	\$28,751	\$28,751
	experience elements (i.e. seating	7 sections				
	platforms, seating, park benches,	touching the				
	trip facilities etc.)	river.	<b>A- - - - -</b>	<b>A- - - - -</b>	<b>A-</b>	<b>A- - - - - - - - - -</b>
2D-10	Interpretive signage, in addition to	Spread over the	\$5,556	\$5,556	\$5,556	\$5,556
	wayfinding signage, focus on	9 sections, or				
	townships, Goulburn River,	can be				
	ote					
20-11	Bitumen seal on prime seal	In flood zones			\$400.000	\$400.000
		2000m			<b>\$</b>	<b>\$</b>
2D-12	Roadside Barrier	River Road 4,300m	\$430,000	\$430,000	\$430,000	\$430,000
		Total	\$1,099,905	\$604,905	\$1,417,905	\$1,244,905
2E	Section 2E - River Road to Murchi	son CH35500 to	Incl.	Excl.	Incl.	Excl.
	CH39917 (4.4km)		Provisional	Provisional	Provisional	Provisional
2E-1	Wayfinding signage	every 1km	\$2,000	\$2,000	\$2,000	\$2,000
2E-2	Trail head welcome sign and information board		\$10,000	\$10,000	\$10,000	\$10,000
2E-3	Wayfinding sign directing to local points of interest and trail features		\$10,000	\$10,000	\$10,000	\$10,000
2E-4	Arts trail activation elements (sculptures, relevant art pieces etc)	Spread over the 9 sections, or can be combined for larger pieces.	\$27,778	\$27,778	\$27,778	\$27,778
2E-5	Goulburn River viewing	Spread over the	\$28,751	\$28,751	\$28,751	\$28,751
	experience elements (i.e. seating	7 sections				
	platforms, seating, park benches,	touching the				
	trip facilities etc.)	river.				
2E-6	Interpretive signage, in addition to	Spread over the	\$5,556	\$5,556	\$5,556	\$5,556
	wayfinding signage, focus on	9 sections, or				
	townships, Goulburn River,	can be				
	indigenous and cultural storytelling	combined for				
	etc.	larger pieces.				



No	Element	Unit / Assumption	Estimate- Compacted Gravel	Estimate- Compacted Gravel	Estimate- Bitumen in flood zones	Estimate- Bitumen in flood zones
2E-7	Bitumen seal on prime seal.	In flood zones,. 4400m			\$880,000	\$880,000
2E-8	Roadside Barrier	River Road 3,500m	\$350,000	\$350,000	\$350,000	\$350,000
2E-9						
Total			\$433,905	\$433,905	\$1,313,905	\$1,313,905
SUB-TOTAL BASE WORKS (exc GST)			\$8,412,997	\$4,144,917	\$12,203,757	\$10,096,417
А	Additional Costs					
A-1	Mobilisation / travel / accommodation		\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00
A-2	Project Management	10% of budget	\$841,299	\$414,491	\$1,220,375	\$1,009,641
A-3	Contingency - alignment issues, wet weather, approval delays, etc.	10% of budget	\$841,299	\$414,491	\$1,220,375	\$1,009,641
A-4	Maintenance and renewal allowance.	3% of budget	\$253,389	\$124,347	\$366,112	\$302,892
		Total	\$1,702,599	\$848,983	\$2,460,751	\$2,039,283
SUB-TOTAL BASE WORKS AND ADDITIONAL COSTS (exc GST)			\$10,115,596	\$4,993,900	\$14,664,508	\$12,135,700

The costs have been based on 2024 figures and future anticipated estimated costs should consider a suggested 3% annual rise.

# 5. Further Requirements and Approvals

This section includes an overview of the governance arrangements, planning permits and other approvals for the project, recommedations for additional background studies and potential funding sources.

### 5.1 Governance Arrangements

Effective governance will be critical for the successful planning, delivery and ongoing maintenance of the Goulburn River Trail.

#### 5.1.1 Land Ownership and Management

The project will take place on land owned and managed by a range of agencies, bodies, and landowners. This includes the Greater Shepparton City Council, DEECA, Parks Victoria, DTP and private landowners. Therefore, it will be imperative to seek the relevant permits and approvals to support the smooth planning and delivery of the Goulburn River Trail.

As highlighted in feedback provided by DEECA, there may be additional land manager consent considerations (e.g. VicTrack) and license amendments (e.g. grazing licenses across licensed Water Frontages) as the Project progresses which will be considered further depending on the trail alignment. Additionally, the Land (Regulated Water Course) Regulations 2021 would be applicable to where the trail alignment crosses into Arcadia Streamside Reserve.

#### Parks Victoria

As the trails will be constructed on predominately Parks Victoria land it will require a Memorandum of Understanding or lease agreement between Council and Parks Victoria, as per the Crown Land Act. A two-stage process applies to the granting of leases. First, lease proposal required the Approval in Principle (AIP) of the Minister before a landlord commits to leasing Crown Land. Second, all leases require the Minister's approval of the terms and conditions.

#### Asset Ownership

As highlighted by DEECA, prior to the project proceeding, the Goulburn Valley Trails asset ownership should be resolved. DEECA have indicated that the trail would either need to be approved and authorised by either a 17B Crown Land Reserves Act (CLRA) 1978 license and/or be excised from the Parks Victoria Land Registry via the creation of a Committee of Management and assigned to the City of Greater Shepparton. The license requires Ministerial Consent, and the creation of a Committee of Management requires Parks Victoria Board approval prior to excision from the PV Land Registry (DEECA, 2024).

# It is recommended that lease agreement arrangements are a priority action as the project progresses to the next stage.

#### Land Use Activity Agreement

The Land Use Activity Regime is a simplified alternative to the future acts regime of the Native Title Act 1993. The objective of the LUAR is to establish a process whereby land use activities on public land may process whilst accommodating third party interests (such as trails) and respecting the Traditional Owner rights attached to the Public Land. While the Yorta Yorta Nation Aboriginal Corporation does not currently hold a Land Use Activity Agreement, they may soon. Under the LUAR, land use activities will be divided into four categories, Routine, Advisory, Negotiation and Agreement. Appropriate approval will be required by the Traditional Owners depending on the classification of the land and compensation to support the agreed land use outcomes.

#### 5.1.2 Planning and Delivery Governance

Effective project planning and delivery governance is essential for securing funding for the project. For the Goulburn River Trail, the governance will be led by an overall project delivery committee (e.g. the current Project Board) which is responsible for managing the project delivery, including budgeting, programme, and internal and external engagements. The project delivery committee should include representatives from Council, DEECA, Parks Victoria, GBCMA, Yorta Yorta Nation Aboriginal Corporation, local community groups and businesses.

Trail ownership and management typically fall to a community organisation, such as the GV Trail Group and/or Council. These entities should liaise with government departments and stakeholders throughout the project lifecycle. Postdelivery, they remain responsible for ongoing operations, monitoring, and maintenance. While community organisations benefit from lower maintenance costs due to volunteers, this can lead to trail deterioration if enthusiasm wanes. A detailed financial model, such as an Ambassador Program for fundraising, and regular meetings can mitigate this risk.


A Project Manager is responsible for the day-to-day activities of the project, including the tender for design and detailed planning, the letting of tender contracts for the construction, engaging with contractors, managing project finances, and reporting to the project delivery committee. In addition, the project management should seek resources and apply for funding, advocate and lobby, for example, advocate for more bikes on V/Line trains. The project management should collect trail usage data and communicate with key stakeholders, organise, facilitate or encourage events. The project management also includes key roles such as arranging for trail maintenance and identifying and mitigating risks. The GV Trail Group could be assigned to the role of the Project Manager.

Finally, it is recommended a project advisory group is made up of members with specialised industry-based experience to provide overall guidance and oversight for the project.

Figure 5-1 Goulburn River Trail proposed Governance Structure and Responsibilities

### Roles





Source: prepared by Stantec

# 5.2 Planning Permits and Other Approvals

# 5.2.1 Environmental Approvals and Next Steps

The desktop Flora and Fauna Desktop Assessment has determined that the proposed trails are likely to trigger several environmental approval requirements, including a planning permit (likely for Use of Land, Buildings and Works, and Vegetation Removal).

The assessment pathway for a planning permit application is to be determined, however, given the proposed length of the trails, impact and location, the project will likely trigger a 'detailed' assessment pathway requiring detailed ecological field assessments by DEECA VQA accredited assessors to quantify final impacts on native vegetation and determine offset requirements. Native Vegetation offsets will be required for impacts to native vegetation triggering planning approval. Additional approvals that may be required include FFG Act (1988) protected flora permits, EPBC referral and Works on Waterways approval.

A site assessment is required to confirm specific triggers and locations of impacted vegetation and waterways. Crown land owner/manager consent will be required for affected Crown land parcels and it is noted that license agreements may be required. Upon completion of site investigations, it is recommended that opportunities to avoid and minimise impacts to biodiversity values are incorporated into the design. This may include opportunities to realign trail alignments and avoid impacts to areas identified on site to be of high biodiversity value. It may also include an arborist assessment of trees likely to be impacted by the proposed works to determine retention potential and reduce offset requirements.

Following the desktop review, the following is recommended for the Goulburn River Trail project:



- **Preliminary site investigations** should be undertaken to determine the presence of native vegetation and fauna habitat and the potential for threatened species and ecological communities and determine the need for threatened species surveys.
- **Design Amendments** following the preliminary site investigations, measures to avoid and minimise impacts to stands of vegetation and fauna habitat should be discussed and incorporated into the alignment design.
- **Detailed site investigations** once the trail alignment and associated construction footprint has been finalised to quantify the overall loss of native vegetation.
- **Consultation with authorities** as design progresses consultation should be undertaken with the relevant authorities including Greater Shepparton Council to confirm our interpretation of the planning scheme, Goulburn Broken Catchment Management Authority to confirm the works over waterways requirements, DEECA as required with regards to requirements under the FFG Act and offsetting requirements, and DCCEEW if it is deemed that an EPBC referral is required.
- **Approvals** prepare and submit the necessary environmental approvals e.g. planning permit application. Landowner/manager approval is to be gained prior to works.
- **Native Vegetation Offsets** determine whether native vegetation offsets will be secured via a first (client owned land) or third-party process. Secure offsets prior to commencement of work.
- **Construction management** an environmental management plan should be prepared for the proposed works outlining mitigation measures relating to biodiversity and the broader environment.

# 5.2.2 Cultural Heritage Management Plan

The Cultural Heritage Desktop Diligence Assessment has determined the activity area is likely to be highly culturally sensitive due to the location of Aboriginal places within the activity area and there is potential that additional Aboriginal cultural heritage will still be located in the activity area.

The DDA concluded:

- The activity is a high impact activity.
- The activity area is affected by the Aboriginal heritage cultural heritage sensitivity overlay.
- The site's floodplain landform was deemed to have sections that are at a minimum HIGH probability of archaeological potential due to the presence of previously recorded sites.
- There is one (1) known Aboriginal site within the activity area.
- There are three (3) known historic Aboriginal Places within 1.3 kilometres of the activity area.
- A cultural heritage permit is required by the Aboriginal Heritage Act 2006.
- A mandatory CHMP IS required by the Aboriginal Heritage Act 2006.

Following the desktop review, the following is recommended for the Goulburn River Trail project:

- Due to the presence of previously recorded Aboriginal Places within and adjacent to the Activity area, if a CHMP is not prepared for these works, multiple Cultural Heritage Impact Permits must be prepared.
- Due to the known presence of previously recorded sites within the activity area and immediate surrounds, the need for a CHMP has been triggered in accordance with R. 25. Further, the proposed works are high impact as per R. 47.
- The information regarding the location and distribution of cultural heritage in this report should not be distributed to third parties.
- The sponsor may seek verification of this opinion through legal advice.

# 5.2.3 Consultation with VicTrack

Consultation with VicTrack is required to understand the land management arrangements for the section of the trail along the train line between Toolamba and Old Toolamba.

# 5.2.4 Consultation with DTP

Consultation with DTP is required for the sections of the trail that run parallel to Toolamba Rd (a DTP-managed road).

# 5.3 Recommendations for Additional Background Reports

Additional background assessments found to be outside the scope of this exploratory report should be undertaken to progress the project to the implementation stage. The particular knowledge gaps that have been identified include:

Table 5-1 Knowledge Gaps



Knowledge gap		Relevance	Assessment type
	Stabilisation and earthworks	<ul> <li>Understanding soil composition ensures infrastructure along the trail is stable</li> <li>Identifying potential risks of erosion or landslides for improved safety and longevity</li> <li>Selecting the appropriate materials to suit soil types and load-bearing capacities</li> <li>Understanding soil's permeability and water retention to plan proper drainage systems</li> <li>Minimising the impact of the development to the ecosystem</li> </ul>	Geotechnical
Î	Accessibility and inclusion	<ul> <li>Ensure the design complies with accessibility standards to provide equal opportunities to individuals with disabilities</li> <li>Incorporating inclusive design principles to create an accessible and user-friendly environment</li> <li>Meeting legal obligations</li> <li>Promoting a sense of community and allowing diverse groups of people to enjoy and benefit from the project</li> <li>Ensuring longevity of the project by reducing the need for retrofitting and remaining functional as demographics and needs evolve</li> </ul>	Disability Discrimination Act (DDA) requirements
	Arts and culture	<ul> <li>The arts and creative storytelling aspect of the project is important given the trail follows one of Victoria's most significant rivers. Incorporating the local art and traditions into trail design would help to reflect the identity of the community, fostering a sense of pride and connection among residents</li> <li>Integrating artistic elements into trail design enhances its visual appeal</li> <li>Involving local artists and cultural organisations in the trail design process promotes community engagement.</li> <li>A culturally rich trail can attract tourists interested in exploring the local arts scene</li> </ul>	Expressions of Interest for local residents to contribute
	Trail network name	<ul> <li>By determining a memorable and recognisable name among locals and visitors this would contribute to the identity and branding of the trail. Consider a broader network name and specific names for each trail link</li> <li>Adding cultural and historical significance and fostering a sense of pride and community among those using the trail</li> <li>Enhancing the trail's appeal for tourists by using it as a marketing tool</li> <li>Clarity and distinctive naming will aid wayfinding and navigation by helping users communicate about the trail and facilitating emergency services in locating specific areas</li> <li>Raising awareness about the ecological features of the trail if naming it in a way that resonates with the environment</li> <li>Enhancing community engagement in the project by involving members in the trail naming process</li> </ul>	Community workshop

# 5.4 Funding Sources

# 5.4.1 Capital Funding

Council will pursue a multi-faceted approach to securing capital funding for the Goulburn River Trail project. This will involve identifying and applying for relevant grants offered by both State and National government bodies and regional development funds. Due to the non-excludable and non-rivalrous nature of the project and its publicly motivated objectives, it is recommended that government are the majority investor in the project.



In addition to public sources, Council will engage with private sector entities through sponsorship opportunities, promoting corporate social responsibility initiatives. Project sponsors may play a pivotal role in providing the necessary funding, resources, and support that enables the project's smooth execution and aligns with the overarching objectives of creating a sustainable and eco-friendly tourism destination. Feedback from local businesses on the project proposal has shown widespread support. These include Tatura Milk Industries Pty Ltd and Bega Cheese Limited.

Community support has also been received from Tatura Rotary Club, Toolamba Lions Club, Goulburn Valley Mountain Bike Club, and the Tatura 200. These groups could be engaged through crowdfunding campaigns. With their commitment to the project, it is possible to combine resources, align objectives, and drive the initiative towards a successful completion.

# 5.4.2 Operational Funding

The pursuit of capital funding will be underpinned by robust financial planning and forecasting to ensure the sustainability and long-term success of the trail.

All too often the maintenance of a trail is left in the hands of willing, enthusiastic (and capable) volunteer groups, but over time personnel in the group change, enthusiasm wanes or focus changes. When that happens, the trail surface deteriorates badly through erosion, vegetation becomes overgrown, trail signage disappears, and brochures/leaflets become non-existent. The original expense and effort in developing the trail have been wasted.

In recognition of this, when managing the ongoing costs of a trail, Council will implement a systematic maintenance and operational plan in line with its Level of Service (LoS) commitments. This plan would typically involve routine inspections to ensure safety and functionality, addressing wear and tear through regular upkeep, and providing necessary amenities for users. Council will allocate funds from its annual budget to cover these expenses, possibly supplemented by grants or partnerships with local businesses and community groups.

Revenue-generating activities, such as leasing spaces for vendors or hosting events, could also contribute to offsetting some costs. Furthermore, Council may explore volunteer programmes to aid in the trail's maintenance, thus fostering community engagement and reducing expenses. The overall objective is to maintain the trail in a condition that meets the council's service standards cost-effectively and sustainably.

# 5.5 General Phasing Strategy

It would be beneficial to deliver the trail in stages due to the length of the alignment. Staging can occur based on available funding, cost of material, current use of trail sections, and site conditions e.g. flood risks, etc. Table 5-2 provides a high-level phasing strategy which includes fundamental overarching activities that need to be resolved at the outset.

Staging	Key activities
Immediate activities	<ul> <li>Resolve the Goulburn Valley Trails asset ownership</li> <li>Establish project delivery committee</li> <li>Prioritise the staging of the trail and develop a phasing strategy</li> <li>Establish the identity of the trail</li> <li>Identify and secure funding</li> <li>Secure leasing agreement from Parks Vic</li> </ul>
Planning works	<ul> <li>Master Planning including:         <ul> <li>Detailed Ecological and Environmental Assessment</li> <li>Cultural Heritage Management Plan</li> <li>Detailed site investigations and ground truthing of the alignment</li> <li>Planning approvals pathway</li> <li>Refine project estimates</li> <li>Refine construction methodologies and timeframes</li> <li>Detailed design, where appropriate</li> </ul> </li> <li>Prioritisation and implementation sequencing of the trail sections</li> <li>Obtain permits</li> </ul>
Stage 1 (low cost)	<ul> <li>Clean up existing tracks</li> <li>Install wayfinding and signage</li> <li>Regulatory signage for shared local roads (e.g. Tatura link)</li> <li>Incorporate safety measures e.g. barriers to stop illegal activity (4WDs)</li> </ul>
Stage 2	<ul> <li>Repair existing trails that are already in use (such as those in Sections 1a, 1b and 1c)</li> </ul>

### Table 5-2 General Phasing Strategy



Staging	Key activities
	<ul> <li>Vegetation clearing</li> <li>Interpretative signage with support from YYNAC and other cultural and community groups</li> <li>Improve trailhead facilities e.g. seating, water fountains, picnic tables</li> </ul>
Stage 3	<ul> <li>Upgrade existing trails or sections of the trails with gaps (such as Sections 1c and 2e)</li> </ul>
Stage 4 (higher value capital works)	<ul> <li>Establishing new off-road trails (such as Sections 2a, 2b and 2c, 2d)</li> <li>Vegetation clearing</li> <li>Upgrading channel crossing bridge</li> <li>Implement new channel crossing</li> <li>Seating and picnic tables throughout the trail</li> </ul>
Stage 5 (long term vision)	Establish new off-road shared path for the Tatura link

# 5.6 Potential Risks

The management of potential risks is a process for identifying adequate assessment and response to risks. Regularly, active review allows for early decision making to mitigate risks. The Goulburn River Trails project management team will be responsible for risk management and will review the effectiveness of the risk management strategy during the project delivery and maintenance. The risks are summarised below.

### Asset ownership

Prior to the project proceeding, the Goulburn Valley Trails asset ownership should be resolved. DEECA have indicated that the trail would either need to be approved and authorised by either a 17B Crown Land Reserves Act (CLRA) 1978 license and/or be excised from the Parks Victoria Land Registry via the creation of a Committee of Management and assigned to the City of Greater Shepparton.

#### Agreements

Given that the Goulburn River Trail will cross land owned or managed by Greater Shepparton City Council, DEECA, Parks Victoria, DTP, and private landowners, it will be imperative to ensure that appropriate agreements are in place regarding contracts, access, responsibilities and insurances.

#### Safety

Given the proposed alignment of the trail next to the river in specific locations, consideration needs to be given to erosion, boundary fencing and liability.

#### Stewardship of the trail

There is also a risk that if a community group takes on responsibility for the trail and then folds, Greater Shepparton City Council and / or Parks Victoria may be left with an additional and unexpected / unbudgeted asset to manage and maintain.

#### **Emergency vehicle access**

Other risk management issues that need to be addressed include emergency vehicle access – which may be challenging in some sections where the trail follows the Goulburn River. Appropriate regulatory, warning and behavioural signage is a key component of any risk management strategy developed for the trail.

#### **Ongoing maintenance**

Procedures need to be established in regard to regular inspection of the trail and its signage and a system in place to ensure that customer requests or complaints are logged and dealt with in a timely manner. Fire and flooding procedures also need to be identified.



# 6. Socio-Economic Analysis

# 6.1 Quantitative Analysis

To assess the socio-economic impacts of the proposed Goulburn River Trail, a cost-benefit analysis (CBA) has been undertaken following the below steps per the Victorian Government guidelines.

Figure 6-1 Victorian Government CBA Guidelines

01	Identify the base case and option
02	Identify the significant impacts and select units of measurement
03	Predict the impacts over the life of the proposed investment option
04	Measure impacts in dollar terms (monetise impacts)
05	Discount future costs and benefits to obtain present values
06	Calculate overall value
07	Outline assumptions, limitations, and key variables
08	Perform sensitivity analysis
09	Reach a conclusion
10	Communicate the results

This section is structured according to the above steps.

### 6.1.1 Identify the base case and option

The first option is the base or 'do minimum' case where the existing trails in the Greater Shepparton LGA remain in their current state. The second option is the proposal to extend the existing trails in the Greater Shepparton LGA to offer a full distance of 58km.

### 6.1.2 Identify the significant impacts and select units of measurement

Table 6-1 provides an overview of the benefits considered in assessing the value of the proposal relative to the base case over the appraisal period. This was informed by the ILM (refer to Appendix A: Investment Logic Mapping Outputs) and includes the user benefits accrued to individuals who participate in trail activities as well as the external benefits of introducing a local recreational activity and tourist attraction to the wider community.

Value stream	Description	
User benefits		
Active communities (private)	Health benefits gained by an individual associated with increased physical activity, such as better immunity from sickness and higher life expectancy.	
Improved public safety	A designated active travel shared pathway trail would prevent conflicts occurring between pedestrians and cyclists and road users.	
Reduced vehicle cost	Lower operating cost and environmental degradation associated with replacing vehicle use with active transport.	
External benefits		
Active communities (system)	Increased activity improves a person's health and leads to lower healthcare costs.	
Added productivity to the accommodation and foodIncrease in year-round visitation as the shared pathway will be a users through all seasons. Tourism will boost complementary bus activity, for example food and beverage, accommodation, and eq		
Added productivity to the retail sector	related purchases (e.g. rental, service, equipment, touring, transport).	

#### Table 6-1 Economic Benefits



Added productivity to the	By contracting local labourers and suppliers to deliver the shared pathway
construction sector	this injects funding into the township, supporting local employment
	opportunities and boosts productivity in the construction sector.

### Demand estimates

A key input into the quantification of the benefits in Table 6-1 is the estimated demand for the trail network among residents and visitors. This is calculated by drawing on counter data where segments of the track are existing shown in Table 6-2. This presents the number of pedestrians and cyclists on the 13km of track between Shepparton and Mooroopna, which represents 1.5% of the Greater Shepparton population.

### Table 6-2 Mooroopna - Shepparton Trail Counter Data

Time period	Counter data	Note
Average weekend usage, Jul to Sept 2019	650	Given weekend usage, this is assumed to be the number of regular recreational users.
Average daily usage, 2020	152	Finding the difference in these figures reveals a growth of 2.6%, that accounts for changes in population and demand. Knowing the population of the region has been growing at 1.5%, we can deduce a growth in demand for trail of 1.1%, among recreational users and commuters.
Average daily usage, 2021	156	

To approximate the increase in trail usage once the extension is delivered, various studies are referenced exploring the uptake prior and post trail developments among tourists, recreational and commuter users at different locations. This includes:

- A study undertaken on a trail in Sydney that looked at the counter data of pedestrians and cyclists before and after turning a straight track into a closed loop. This found participation increased by between 200% and 340%.<sup>3</sup>
- Survey data revealing the uptake of active transport among commuters is 13% when shared pathways are accessible. This suggests the current active transport portion of 5% has potential to increase once connections between residents' home and place of work are enhanced by the trail network.<sup>4</sup>
- Given the linkage between nature-based tourism and shared pathways and the improved accessibility to national
  parks provided by the Goulburn River Trail, this assessment refers to trends in nature-based tourism to estimate the
  uptick in tourist visitation. Both the Tourism and Transport Forum and Destination NSW suggest a year-on-year
  increase of 9% in 2014 and 2018, respectively.<sup>5</sup>

The resultant demand figures, combining cyclists and pedestrians, are shown in the table below.

Use type	Base case # of users	Project case # of users
Recreational (regular)	1,103	1,242
Commuter (regular)	1,199	1,351
Tourist (one-off)	12,473	13,596

Table 6-3 Base and Project Annual Usage of the Trail Network in Year 6

6.1.3 Predict the impacts over the life of the proposed investment option.

The key parameters and assumptions used in the CBA are set out in the below table.

<sup>&</sup>lt;sup>5</sup> Destination NSW. Available at: TTF-Nature-based-Tourism-2014.pdf; <u>nature-based-tourism-to-nsw-snapshot-ye-dec-2018.pdf</u> (destinationnsw.com.au)



<sup>&</sup>lt;sup>3</sup> Closing the loop. Available at: <u>Closing the loop: short term impacts on physical activity of the completion of a loop trail in Sydney.</u> <u>Australia | International Journal of Behavioral Nutrition and Physical Activity | Full Text (biomedcentral.com)</u>

<sup>&</sup>lt;sup>4</sup> Kittelson. Available at: The Benefits of Shared Use Paths, By the Numbers (kittelson.com)

### Figure 6-2 Key Parameters and Assumptions

Item	Assumption	Comment
Real discount rate	Core: 7% Sensitivity: 4 and 10%	Discount rate was sourced from Victorian Government and Infrastructure Australia Guidelines
Base price year	2024	The cost and benefit estimates were developed using 2024 prices
Proposal delivery start year	2026	To align with the timing of obtaining approval and developing a shovel- ready project

The timeline below depicts when the costs and benefits are likely to occur.

A 12-year appraisal period has been selected, which is composed of a delivery period of 4 years for the construction of the shared pathway extension, and a useful life of 10 years once the trail network is operational. Costs continue to accumulate after delivery to account for maintenance fees. The realisation of benefits starts at the same time as construction due to the economic benefits of FTEs involved in construction.

### Figure 6-3 Timing Assumptions



The benefits accrued by the trail network is consistent with the usage patterns. This is expected to incrementally increase as segments of the trail network are made open to the public and publicity increases, reaching maximum usage in year 2031. The adoption curve is illustrated in the figure below.



Figure 6-4 Uptake of Trail Network among Recreational, Tourist and Commuter Users over 12-year Appraisal Period

# 6.1.4 Measure impacts in dollar terms

The quantitative economic cost and benefit methodologies will be described below.

# Benefit to community

# Private health benefit from increased activity

This benefit captures the positive health outcomes that arise from an increase in physical activity resulting from the added opportunities for cycling and walking in the community. The private benefit is also referred to as reduced morbidity



or mortality costs. This is assumed to be a perceived benefit, or a reinforcing consequence of engaging in a more active lifestyle, including both intrinsic (greater alertness or reduced fatigue) and extrinsic (social acceptance) returns.<sup>6</sup>

The methodology used to estimate this benefit is outlined in Table 6-4.

Table 6-4 Private Health Benefit

Item	Notes	
Methodology	<b>Calculation 1:</b> Improved health of cyclists = (Incremental uptake in mountain biking among the community * Average distance travelled on a MTB + Incremental uptake of cycling for active transport * Average distance travelled to work) * Health benefit per km travelled	
	<b>Calculation 2:</b> Improved health of walkers = (Incremental uptake in bush walking among the community * Average distance travelled when bush walking + Incremental uptake of walking for active transport * Average distance travelled to work) * Health benefit per km travelled	
Data and	Base case usage of trails:	
assumptions	<ul> <li>650 people used the Shepparton – Mooroopna trails on Saturdays and Sundays in 2019. This amounts to 1.5% of the population within the Shepparton and Mooroopna localities. (1) (2)</li> <li>Applying 1.5% to the population of Greater Shepparton gets 993 people who are assumed to walk (78%) or cycle (22%) on the existing trails. (3)</li> </ul>	
	Project usage of trails:	
	• Trail usage among cyclists and pedestrians over the base case assumed to increase by between 200 to 340% based on found changes to participation before and after trail developments on Sydney-based trail. (4)	
	• Low (200% increase) is 1,987 cycling and walking participants, medium (270% increase) is 2,682 cycling and walking participants and high (340% increase) is 3,378 cycling and walking participants.	
	• The trail developments are also claimed to be suitable to equestrian users. On average, 1.3% of Australians participate in equestrian, which amounts to 810 users at its peak. (3)	
	Incremental leisure usage of trails:	
	334 mountain bikers, 1,181 bush walkers, 810 horse riders.	
	Distance travelled by leisure users:	
	<ul> <li>Average frequency of mountain biking is, 40% of population ride weekly, 20% ride fortnightly, 19% monthly, 21% yearly. (5)</li> <li>Distance travelled is calculated based on the average duration of 1.82 hours per session</li> </ul>	
	and speed of 15km/hr. (5) (8)	
	• Average frequency of bush walking is, 18% of population walk weekly, 14% walk fortnightly, 23% monthly, 45% yearly. (5)	
	<ul> <li>Distance travelled is calculated based on the average duration of 2.19 hours per session and speed of 6km/hr. (5) (8)</li> </ul>	
	Base case usage of active transport for commuting:	
	• 1000 people or 5% of those who travel to work use active transport methods. (5)	
	Project case usage active transport for commuting:	
	• 13% of people assumed to use the trail to travel to work if it connected them between residents and place of work. (6)	
	Distance travelled by active transport users:	
	<ul> <li>23% of active transport users cycle, for an average of 7km.</li> <li>77% of active transport users walk, for an average of 5km.</li> <li>166 days per year that people commute to work, which is 250 workdays reduced by the 30% that people work from home in Victoria (2) (7)</li> </ul>	
	Private health benefit: (uprated to 2024 prices)	
	<ul> <li>\$0.79 per km of cycling. (8)</li> <li>\$1.57 per km of walking. (8)</li> </ul>	

**Source:** (1) Client supplied counter data, (2) ABS Census 2021 Victoria Population, (3) 2023 AusPlay data, (4) <u>Closing the loop: short term impacts on</u> physical activity of the completion of a loop trail in Sydney, Australia | International Journal of Behavioral Nutrition and Physical Activity | Full Text (biomedcentral.com), (5) ABS Census 2021 Journey to Work, (6) <u>The Benefits of Shared Use Paths, By the Numbers (kittelson.com)</u>, (7) <u>https://www.statista.com/statistics/1341056/australia-average-working-days-and-wfh-days-by-state/</u>, (8) m4\_active\_travel.pdf (atap.gov.au)

<sup>&</sup>lt;sup>6</sup> National Library of Medicine (2020), Perceived benefits and barriers towards exercise among healthcare providers, Link



# Improved Public Safety of Using Segregated Trails

This benefit captures the improved safety of trail users resulting from the segregation of trails away from the road. Feedback from stakeholders, site visits and online trail information reveal the current roads in Greater Shepparton are not suited to active transport with high-speed limits and no shoulders. Despite this, a portion of the workforce use this mode to get to work. This raises the risk of crashing among drivers, walkers, and cyclists.

The methodology used to estimate this benefit is outlined in Table 6-5.

#### Table 6-5 Improved Public Safety

Item	Notes	
Methodology	<b>Calculation 1:</b> Improved safety of existing commuting trips = Crash cost per trip * Crash cost reduction per trip * Distance travelled per year * Proportion of trail expected to be exposed to the traffic	
	<b>Calculation 2:</b> Improved safety of new commuting trips = Crash cost per trip * Crash cost reduction per trip * rule of a half * Distance travelled per year * Proportion of trail expected to be exposed to the traffic	
Data and	Base case usage of active transport for commuting:	
assumptions	• 1,000 people or 5% of those who travel to work use active transport methods. (1)	
-	Incremental usage active transport for commuting:	
	<ul> <li>1,485 active transport users when the trail is full constructed, not accounting for population and demand growth.</li> </ul>	
	Crash cost: (uprated to 2024 prices)	
	<ul> <li>\$1.39 per km by cycling. (2)</li> <li>\$2.12 per km by walking. (2)</li> </ul>	
	Crash cost reduction:	
	Risk is reduced by 70% when introducing separate pathways. (2)	
	Current proportion of trail exposed to the road:	
	• Based on the proportion of trail that is new (58km) compared to the part that is the existing network (33km).	

Source: (1) ABS Census 2021 Journey to Work, (2) m4\_active\_travel.pdf (atap.gov.au)

#### Reduced vehicle cost from substituting driving for active transport

This benefit captures the reduced perceived and unperceived costs when car drivers shift to active travel in the project case. The perceived costs refer to the cost to the environment of operating a vehicle, including air pollution, greenhouse gas emissions and noise, while the unperceived cost covers expenses like vehicle servicing and maintenance and vehicle depreciation.

The methodology used to estimate this benefit is outlined in Table 6-6.

#### Table 6-6 Reduced Vehicle Operating Cost

Item	Notes
Methodology	Reduced vehicle cost = (Unperceived vehicle operating cost + Environmental cost) * Distance travelled per year by new active transport users
Data and	Incremental usage active transport for commuting:
assumptions	<ul> <li>1,485 active transport users when the trail is fully constructed, not accounting for population and demand growth.</li> </ul>
	Unperceived vehicle operating cost reduction: (uprated to 2024 prices)
	• \$0.19 per km travelled in a car. (1)
	Environmental cost reduction:
	• \$0.04 per km travelled in a car. (1)
	Expansion factor:
	166 days per year people commute to work. (1) (2)

Source: (1) m4\_active\_travel.pdf (atap.gov.au), (2) https://www.statista.com/statistics/1341056/australia-average-working-days-and-wfh-days-by-state/



### Benefit to Businesses

#### Productivity to complementary tourism businesses

This benefit captures the additional business activity generated by increased tourist visitation in Greater Shepparton resulting from the trail network. The uptick in tourism is estimated based on the growth rate in tourist demand for trail activities (7%) and the participation rates. It also takes into consideration the competitiveness of the trail among existing networks in Victoria, understanding that the state is a popular destination for trails. The incremental increase to visitation is multiplied by the current average trip expenditure, covering typical goods and services like hospitality and retail. It is also assumed that tourists will change their visitation patterns and extend their trip length to explore the trail network.

This benefit also captures the increased expenditure resulting from participation in events. It is understood that the introduction of more formal tracks will enable more cycling events to be hosted in Shepparton, for example, the mountain biking component of the Tatura 200.

The methodology used to estimate this benefit is outlined in Table 6-7.

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Item	Notes			
Methodology	<b>Calculation 1:</b> Increased tourism expenditure = Incremental uptick in tourism resulting from trail network * Average spending of tourists per trip + Proportion of tourists expected to extend their trip * Average spending of tourists per night			
	<b>Calculation 2:</b> FTE = increased expenditure / (Sales and Services Income in the retail and food and beverage sectors / Number of employees in the retail and food and beverage sectors)			
	<b>Calculation 3:</b> Value added = FTE * (Industry value added in the retail and food and beverage sectors / Number of employees in the retail and food and beverage sectors			
Data and	Incremental increase in trail-related tourism:			
assumptions	<ul> <li>526,287 international tourists and 2,130,064 domestic tourists in 2019. (1)</li> <li>Of the domestic tourists, 33% are interstate and 67% are intrastate. (2)</li> <li>Tourism is decreasing by -1% per year.</li> <li>Participation rate for trail activities among tourists is 1.2% for interstate, 1.5% for intrastate and 1.5% for international.</li> </ul>			
	• Induced demand among tourists is growing by 9% in the project case. This is based on the growth rate in nature-based tourism given the increased accessibility the trail network would provide for national park visitation. (3)			
	• This results in an increase of 634 intrastate visitors, 254 interstate and 235 internationals when the trail is fully operational and not accounting for growth.			
	Average expenditure per trip:			
	<ul> <li>\$129 for intrastate visitors. (4)</li> <li>\$260 for interstate visitors. (4)</li> <li>\$1,541 for international visitors. (4)</li> </ul>			
	Visitors who extend their trip:			
	<ul> <li>20% of intrastate visitors are likely to extend their trip by 1.4 nights. (5)</li> <li>80% of interstate and international visitors are likely to extend their trip by 2.4 nights. (5)</li> </ul>			
	Average expenditure per night:			
	<ul> <li>\$102 for domestic visitors. (5)</li> <li>\$44 for international visitors. (5)</li> </ul>			
	Participation in events:			
	<ul> <li>Assumed additional 100 event participant places available per year, 70% of which are entered by non-residents. (6)</li> <li>Cost per ticket is \$85. (6)</li> </ul>			
	National Sector Sales and Services Income			
	<ul> <li>\$556,766,000,000 in retail (7)</li> <li>\$115,207,000,000 in food and beverages (7)</li> </ul>			
	National Sector Employment			
	<ul> <li>\$1,419,000 in retail (7)</li> <li>\$1,061,000 in food and beverages (7)</li> </ul>			
	National Industry Value Added			
	<ul> <li>\$102,771,000,000 in retail (7)</li> <li>\$45,665,000,000 in food and beverages (7)</li> </ul>			



Source: (1) idcommunity. Available at: <u>https://economy.id.com.au/shepparton/tourism-visitor-summary</u>, (2) Tourism Research Australia. Available at: <u>https://www.tra.gov.au/en/domestic/domestic-monthly-snapshot.html#ref4</u>, (3) nature-based-tourism-to-nsw-snapshot-ye-dec-2018.pdf (destinationnsw.com.au), (4) <u>https://www.tra.gov.au/en/regional/local-government-area-profiles.html</u>, (5) <u>https://ntdc.org.au/wp-content/uploads/2018/10/NE-Rail-Trail-TRC-assessment-Final.pdf</u>, (6) <u>https://tatura200.com.au/fags-wp/</u>, (7) ABS

#### Productivity to the construction sector

This benefit captures the direct and indirect supply chain effects associated with constructing the trail network. This assumes that local suppliers and labourers will be employed to undertake the works required, supporting short-term construction jobs in Shepparton. This is calculated in two parts. First, the number of full-time equivalent (FTE) staff is estimated based on the capital expenditure. Second, the value of additional productivity generated by the FTE is calculated.

The methodology used to estimate this benefit is outlined in Table 6-8.

#### Table 6-8 Employment and Revenue from Increased Construction and Maintenance Efforts Benefit

Item	Notes			
Methodology	<b>Calculation 1:</b> FTE = construction capital expenditure / (Sales and Services Income in the construction sector / Number of employees in the construction sector)			
	<b>Calculation 2:</b> Value added = FTE * (Industry value added in the construction sector / Number of employees in the construction sector)			
Data and	Construction capital expenditure			
assumptions	\$14,298,395 for project delivery			
-	National Sector Sales and Services Income			
	• \$491,042,000,000			
	National Sector Employment			
	• 1,229,000 people			
	National Industry Value Added			
	• \$141,772,000,000			

Source: ABS

### Benefit to Government Agency

#### System health benefit from increased activity

This benefit captures the positive health outcomes that arise from an increase in physical activity resulting from the added opportunities for cycling and walking in the community. The system benefit arises from the reduced reliance on the medical and health care system.

The methodology used to estimate this benefit is outlined in Table 6-9.

Item	Notes			
Methodology	<b>Calculation 1:</b> Improved health of cyclists = (Incremental uptake in mountain biking among the community * Average distance travelled on a MTB + Incremental uptake of cycling for active transport * Average distance travelled to work)* Health benefit per km travelled <b>Calculation 2:</b> Improved health of walkers = (Incremental uptake in bush walking among the community * Average distance travelled when bush walking + Incremental uptake of walking for active transport * Average distance travelled to work)* Health benefit per km travelled			
Data and assumptions	<ul> <li>Incremental leisure usage of trails:</li> <li>218 mountain bikers, 774 bush walkers.</li> <li>Distance travelled by leisure users:</li> <li>Average frequency of mountain biking is, 40% of population ride weekly, 20% ride fortnightly, 19% monthly, 21% yearly. (1)</li> <li>Distance travelled is calculated based on the average duration of 1.82 hours per session and speed of 15km/hr. (1) (2)</li> <li>Average frequency of bush walking is, 18% of population walk weekly, 14% walk fortnightly, 23% monthly, 45% yearly. (1)</li> <li>Distance travelled is calculated based on the average duration of 2.19 hours per session and speed of 6km/hr. (1) (2)</li> <li>Base case usage of active transport for commuting:</li> <li>1,000 people or 5% of those who travel to work use active transport methods. (3)</li> </ul>			



Project case usage active transport for commuting:
<ul> <li>13% of people assumed to use the trail to travel to work if it connected them between residents and place of work. (4)</li> </ul>
Distance travelled by active transport users:
<ul> <li>23% of active transport users cycle, for an average of 7km.</li> <li>77% of active transport users walk, for an average of 5km.</li> </ul>
System health benefit: (uprated to 2024 prices)
<ul> <li>\$0.77 per km of cycling. (2)</li> <li>\$1.53 per km of walking. (2)</li> </ul>

Source: (1) 2023 AusPlay data, (2) m4\_active\_travel.pdf (atap.gov.au), (3) ABS Census 2021 Journey to Work, (4) <u>The Benefits of Shared Use Paths. By</u> the Numbers (kittelson.com) \* The health benefits of equestrian are not accounted for quantitatively due to lack of evidence in the literature and guidance notes.

Cost to government agency

### Delivery of trail network

This cost captures the capital and operating estimates to deliver the infrastructure for the trail network based on the estimates in the Feasibility Study. This includes a contingency of 10% to account for potential alignment issues, wet weather, and approval delays.

The methodology used to estimate this benefit is outlined in Table 6-10.

#### Table 6-10 Delivery of Trail Network

Item	Notes
Methodology	Delivery cost = Estimate to deliver trail * Contingency
Data and assumptions	<ul> <li>Indicative project cost:</li> <li>Total estimate of \$14.3 million. (1)</li> <li>Excludes estimates for culverts, signage, access controls, profile amendment and drainage.</li> <li>Contingency:</li> </ul>
	Additional 10% has been applied to total estimated cost. (2)

Source: (1) Goulburn River Trail Feasibility Study, (2) https://www.atap.gov.au/sites/default/files/ATAP-01 cost Estimation.pdf

#### Maintenance of trail network

This cost captures the ongoing maintenance of the trail once it has been delivered.

The methodology used to estimate this benefit is outlined in Table 6-11.

Table	6-11	Maintenance	of	Trail	Network
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Item	Notes
Methodology	Maintenance fee of the track = % of total capital cost to maintain track
Data and	Maintenance fee:
assumptions	3% of the total capital cost per year.

Source: Mountain Bike Trail Factsheet FINAL.pdf (mackay.qld.gov.au)

### 6.1.5 Discount Future Costs and Benefits to Obtain Present Values

A 7 per cent discount rate has been used to estimate the results in the core scenario according to Victorian Government guidance for when benefits are more easily monetised. As per Infrastructure Australia guidelines, the results have also been tested at a 4 and 10 per cent discount rates.

### Calculate the overall value

The CBA results are presented in the below table, showing the incremental change from the current trail offerings, discounted at 7 per cent over a 12-year appraisal period.



Real, discounted at 7% over a 12-year appraisal period (millions)	
Delivering and maintaining the trail network	13.0
Total economic cost	13.0*
More affordable transport by replacing vehicle use with active transport	0.8
Improved health outcomes from increased physical activity contributes to better self-confidence	2.4
Improved health outcomes reduces health system costs	2.3
Improved public safety of people by introducing more active transport-friendly infrastructure	3.6
Employment and revenue from increased tourism in Greater Shepparton	1.1
Employment and revenue from increased construction and maintenance efforts	10.5
Total economic benefit	20.7
NPV	7.7
BCR	1.6

\*The total construction cost is the nominal capital cost of the project (\$14.3m) and the economic cost refers to the present value cost over a 12-year appraisal period (\$13.0m). Given the discounting process (which accounts for the time value of money) the economic cost is lower than the initial construction cost.

# 6.1.6 Limitations

Without conducting comprehensive stakeholder engagement for this project, this analysis draws on data sourced through desktop research. In the first instance, and where relevant, parameters for active travel within government frameworks have been used. However, where the data was not available, online publications have been referred to and contextualised to the Greater Shepparton region.

There were some remaining benefits that could not be monetised due to a lack of developed literature. These further impacts should be considered in conjunction with the CBA results and will be explored at the end of this section.

# 6.1.7 Perform Sensitivity Analysis

Sensitivity tests provide an understanding of the variation in the results according to changes in the estimates. The sensitivity tests applied in this CBA are summarised in the table below.

### Table 6-13 Sensitivity Tests

Sensitivity test	Details
Discount rate	Discount rates of 4 and 10% are applied
Scaling of costs and benefits	Scaling benefits by +/- 20% and scaling costs by +/- 20%
Best and worst cases	Best case: Scaling of benefits by +20% and scaling of benefits by -20%
	Worst case: Scaling of benefits by -20% and scaling of benefits by +20%



### Table 6-14 sets out the results of the sensitivity tests.

Table 6-14 Results of the Sensitivity Tests

		NPV	BCR
Core scenario results		7.7	1.6
Discount rate	4% SDR	10.0	1.7
	10% SDR	5.9	1.5
Scaling of costs	20% increase	5.1	1.3
	20% decrease	10.3	2.0
Scaling of benefits	20% increase	11.8	1.9
	20% decrease	3.6	1.3
Best case	20% increase in benefits, 20% decrease in costs	14.4	2.4
Worst case	20% decrease in benefits, 20% increase in costs	1.0	1.1

# 6.1.8 Communicate the Results

A CBA estimates the incremental costs and benefits of extending the Goulburn River Trail relative to the 'do minimum' case. A discounted cash flow technique is applied to estimate the difference between the present value (PV) of total incremental benefits and the PV of the total incremental costs. The output is known as the net present value (NPV).

The NPV was calculated by deducting the total cash released (\$20.7 million) from the total cost (\$13.0 million), to get a difference of \$7.7 million. This means the benefits derived from improved community health, public safety, reduced vehicle operating costs, and increased tourism are greater than the cost of delivering and maintaining the trail network. In other words, according to the benefit-cost ratio (BCR), for every \$1 spent on the Goulburn River Trail, \$1.6 is generated for the Greater Shepparton region.

# 6.2 Qualitative analysis

There are additional benefits of extending the Goulburn River Trail that could not be monetised, meaning the proposal is likely to result in greater social welfare than is suggested by the BCR and NPV estimates. These benefits are explored below.

# 6.2.1 Benefit to community

### Improved liveability

Liveability considers the economic, social, and environmental qualities of a place, including factors such as affordability, employment opportunities, safety, opportunities for sport and recreation, community cohesion, air quality and scenery.<sup>7</sup>

By expanding the trail and thereby increasing the attractiveness of outdoor sport and recreation in Greater Shepparton, this allows people to feel a sense of satisfaction and connectivity among the community. Consequently, the region could become a more attractive and desirable place to live, particularly among younger cohorts.

### Property value uplift

It is found there is a positive correlation between trails, quality of life and property value.<sup>8</sup> As such, by introducing a better-connected trail network, there is a likelihood that the properties surrounding the trail would improve in value.

<sup>&</sup>lt;sup>8</sup> The Business of Trails: A Compilation of Economic Benefits - American Trails



<sup>&</sup>lt;sup>7</sup> Australian Transport Assessment and Planning Guidelines (2023), M4 Active Travel, Link

# 6.2.2 Benefits to businesses

### Higher productivity and human capital as a result of a more active community

Sport and recreation, such as mountain biking, walking and equestrian, are recognised as contributing positively to physical and mental health outcomes.<sup>9</sup> This indirectly improves productivity and leads to human capital uplift by reducing office absentee days and improving an individual's ability to learn and develop skills.<sup>10</sup>

### 6.2.3 Benefits to government agencies

### Less time-consuming permit processing

Parks Victoria are often sent requests to approve the use of state park land for various outdoor events occurring in Shepparton. However, a lack of formal trails makes this a complicated process, involving several meetings, paperwork, and phone calls. Introducing formal trails would streamline this process and allow approvals to be more straightforward due to a lower risk of damage to the park land.

# 6.3 Summary and Recommendations

This analysis explored the high-level socio-economic impacts of extending the Goulburn River Trail to the Greater Shepparton region relative to the 'do minimum' case. By looking at the benefits and costs to the community, businesses, and government agencies, as informed by desktop research, this analysis found that the proposal would result in positive economic and social welfare outcomes.

The trail will attract more tourists by increasing access to natural areas and offering outdoor recreation opportunities, boosting local economies and supporting businesses. This increased visitation is projected to generate substantial revenue from tourism expenditure, primarily in accommodation, food and beverage, and retail sectors. Additionally, the trail will encourage active transport, improving public health and reducing healthcare costs. By promoting physical activity and reducing car reliance, the trail will contribute to a healthier and more sustainable community. As such, it is recommended that an investment-ready project plan is further progressed.

 <sup>&</sup>lt;sup>9</sup> Australian Transport Assessment and Planning Guidelines (2023), *M4 Active Travel, <u>Link</u>* <sup>10</sup> AusCycling (2021), *Mountain Biking in Australia: An Economic and Participation Analysis, <u>Link</u>* 



# 7. Conclusion

The Goulburn River Trail Exploratory Study has identified a strong case for the development of a connected trail network along the Goulburn River. The proposed extension offers significant social, economic, and environmental benefits, including improved health outcomes, increased tourism, and stronger community connections.

A positive Net Present Value (NPV) of \$7.7 million and a Benefit-Cost Ratio (BCR) of 1.6 further strengthen the project's viability. However, to ensure successful implementation, it is recommended the actions outlined in Table 7-1 are delivered.

#### Table 7-1 Recommended next steps

Actions	Timeframes
Goulburn River Trails asset ownership is to be resolved before the project development proceeding	Short-term (1-2 years)
Establish a strong project delivery committee with representation from key stakeholders	Short-term (1-2 years)
Prioritise the staging of the trail and develop a phasing strategy	Short-term (1-2 years)
Identify and secure funding for the next stages of the project (detailed site assessments, full business case)	Short-term (1-2 years)
Establish the identity of the trail	Short-term (1-2 years)
Determine the lease agreement arrangement with Parks Victoria	Short-term (1-2 years)
Conduct detailed site investigations and assessments to reflect current site conditions accurately and identify potential environmental and cultural heritage impact	Medium-long term (2-5+ years)
Develop an investment-ready project plan and supporting business case to be used to seek further funding.	Medium-term (2-5 years)
Engage with relevant authorities, landowners, and stakeholders throughout the advocacy, design and development process	Medium-term (2-5 years)
Obtain necessary approvals, including planning permits, cultural heritage permits, and native vegetation offsets.	Long term (5+ years)

By addressing these recommendations, the Goulburn River Trail can progress to the next stage and continue working towards realising its benefits for the Greater Shepparton region.



# Appendices

We design with community in mind



# Appendix A. Investment Logic Mapping





# Appendix B. Trail Alignment Assessment

The details and assessment of each trail section (Section 1a to Section 2e and Tatura) are described in the following sections, where the preferred option is shown with the green line in the maps.

# B.1.1 Section 1a – Mooroopna to Pyke Road via Common Track

This section connects the Mooroopna township to Pyke Road where the preferred option is the inland detour, through the forest, as shown in Figure 7-1.

Figure 7-1 Section 1a - Mooroopna to Pyke Road via Common Track



Source: Stantec

Table 7-2 provides an overview of the trail assessment including site context and trail conditions, land management, environment, flood and cultural heritage assessments.



### Table 7-2 Section 1a assessment

Assessment	Response	
Site context	This section follows the Common Track through parkland.	
Trail condition	An existing dirt path exists. The Destination Trails report (2020) rated the trail condition as good. This was before heavy flooding in 2022. The path was inaccessible in 2023 and the conditions were substandard (see Figure 3-1).	
Land management	The parkland is managed and maintained by Parks Victoria.	
Environmental assessment	<ul> <li>The section is located within the Victoria Riverina Bioregion (DEECA 2023).</li> <li>Native Vegetation Information Mapping (NVIM) indicates that Ecological Vegetation Class (EVC)-quality vegetation exists, consisting of:</li> <li>EVC 814 Riverine Samp Forest (depleted)</li> <li>EVC 295 Riverine Grassy Woodland (vulnerable)</li> <li>EVC 815 Riverine Swampy Woodland (vulnerable)</li> <li>EVC 818 Sedgy Riverine Forest (vulnerable)</li> <li>EVC 172 Floodplain Wetland Aggregate (vulnerable)</li> <li>EVC 56 Floodplain Riparian Woodland (vulnerable)</li> </ul>	
Flood analysis	<ul> <li>During the 1% AEP flood event most of the section is subject to inundation to a depth in excess of 1m. It is expected that this section is also subject to inundation during more frequent flood events.</li> <li>There is a deep (&gt;2m) open drain at the northern end of this section near the Shepparton-Mooroopna railway line that will require construction of a pedestrian bridge.</li> <li>Two deep gullies at approximate chainage 3600m. Two pedestrian bridges will be required or consideration should be given to re-alignment of path northwards to provide one bridge in lieu of two smaller ones.</li> <li>Consideration should be given to re-alignment of the trail to higher ground in low lying areas subject to frequent inundation.</li> <li>Ephemeral anabranch subject to seasonal inundation approximate chainage 4000m. A pedestrian bridge may be required.</li> </ul>	
Cultural Heritage	The section traverses an area with cultural heritage sensitivity. The Aboriginal Cultural Heritage Register and Information System (ACHRIS) identifies several records including Shell Midden and Artefact Scatter.	



# B.1.2 Section 1b – Pyke Road to Pogue Vineyard

This section connects Pyke Road to Pogue Road where the preferred option is the inland forest track. This route follows the bushland floodplain edge.





Source: Stantec

Table 7-3 provides an overview of the trail assessment including site context and trail conditions, land management, environment, flood and cultural heritage assessments.

	7	able	7-3	Section	1b	assessmen
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Assessment	Response
Site context	This section follows the alignment supplied by the GV Trail Group. It is located within the Shepparton Regional Park.
Trail condition	An existing dirt path exists. The Destination Trails report (2020) classified the trail as a poorer condition. The site visit showed dryer conditions than Section 1a but improvements could be made to cater for diverse trail users. This section is therefore classified as substandard.
Land management	The parkland is managed and maintained by Parks Victoria.
Environmental assessment	<ul> <li>The section is located within the Victoria Riverina Bioregion (DEECA 2023).</li> <li>NVIM indicates that EVC-quality vegetation exists, consisting of:</li> <li>EVC 56 Floodplain Riparian Woodland (vulnerable)</li> <li>EVC 295 Rivering Grassy Woodland (vulnerable)</li> </ul>



Assessment	Response
	<ul> <li>EVC 814 Riverine Samp Forest (depleted)</li> <li>EVC 803 Plains Woodland (endangered)</li> <li>EVC 264 Sand Ridge Woodland (endangered)</li> <li>EVC 815 Riverine Swampy Woodland (vulnerable)</li> <li>EVC 818 Sedgy Riverine Forest (vulnerable)</li> <li>EVC 172 Floodplain Wetland Aggregate (vulnerable)</li> </ul>
Flood analysis	<ul> <li>There is a low-level flood levee behind the proposed trail (i.e. opposite side to the river) at chainage 30m. It does not appear to have any impact on the 1% AEP flood event however it is likely to increase flood levels during more frequent flood events.</li> <li>At chainage 600m there is a minor flood levee behind (i.e. opposite side to the river) the Goulburn River. Results indicate negligible effect on the 1% AEP flood event, however it is likely to increase the depth for more frequent flood events.</li> <li>At chainage 850m a bridge over minor intermittent river channel may be required.</li> <li>At chainage 1800m a bridge over minor intermittent river channel may be required.</li> </ul>
Cultural Heritage	The section traverses an area with cultural heritage sensitivity. The Aboriginal ACHRIS identifies several records including Artefact Scatter.

# B.1.3 Section 1c – Pogue Vineyard to Toolamba Township

This section connects Pogue Road to Toolamba Township where existing recreational trails are well-established.



### Figure 7-3 Section 1c – Pogue Road to Toolamba Township



Source: Stantec

Table 7-4 provides an overview of the trail assessment including site context and trail conditions, land management, environment, flood and cultural heritage assessments.

#### Table 7-4 Section 1c assessment

Assessment	Response	
Site context	The route is mostly within parkland and keeps to the edge of the floodplain. It enters Toolamba via Wren Street.	
Trail condition	An existing dirt path exists through the parkland is the condition is good. There are limited safe crossing facilities at the edge of the parkland, connecting with Wren St. The condition path along Wren St is substandard.	
Land management	The parkland is managed and maintained by Parks Victoria. Wren St is a Council road.	
Environmental assessment	<ul> <li>The section is located within the Victoria Riverina Bioregion (DEECA 2023).</li> <li>NVIM indicates that EVC-quality vegetation exists, consisting of:</li> <li>EVC 803 Plains Woodland (endangered)</li> <li>EVC 818 Sedgy Riverine Forest (vulnerable)</li> <li>EVC 264 Sand Ridge Woodland (endangered)</li> <li>EVC 66 Low Rises Woodland (endangered)</li> <li>EVC 804 Rushy Riverine Swap (depleted)</li> </ul>	
Flood analysis	Based on aerial photography there is possibly an existing bridge at chainage 750m. It was not possible to inspect this location during the site	



Assessment	Response
	<ul> <li>visit due to flooding, so this needs to be confirmed. If there is a bridge in this location, its suitability for use should be investigated.</li> <li>The trail passes through an ox-bow lake at chainage 2400m. Based on aerial photography it appears that the trail is raised above the surrounding lake invert. However, this should be confirmed as this will influence if any further infrastructure, such as raised walkway, is required.</li> </ul>
Cultural Heritage	The section traverses an area with cultural heritage sensitivity. The Aboriginal ACHRIS identifies several records including Artefact Scatter and a Scarred Tree.

# B.1.4 Section 2a – Toolamba to Old Toolamba

This section connects Toolamba to Old Toolamba, aiming to provide improved connectivity between the two townships.

Figure 7-4 Section 2a – Toolamba to Old Toolamba



Source: Stantec

Table 7-5 provides an overview of the trail assessment including site context and trail conditions, land management, environment, flood and cultural heritage assessments.



### Table 7-5 Section 2a assessment

Assessment	Response
Site context	The trail initially uses Wren St and follows the west side of the railway line to the river. After this, the preferred option, the Commuter Route, provides a direct off-road path parallel with Bitcon Rd and Toolamba Rd, before rejoining an existing track.
Trail condition	An existing path exists along the train for approx. 70% of the route and its condition is substandard. A path does not exist for the remaining 30% along the train line and the section.
Land management	The land surrounding the train line is likely to be owned and managed by VicTrack. Bitcon Rd is a Council road.
Environmental assessment	<ul> <li>The section is located within the Victoria Riverina Bioregion (DEECA 2023).</li> <li>NVIM indicates that EVC-quality vegetation exists, consisting of:</li> <li>EVC 803 Plains Woodland (endangered)</li> <li>EVC 295 Riverine Grassy Woodland (vulnerable)</li> <li>EVC Shallows Sands Woodland (endangered)</li> </ul>
Flood analysis	• The proposed route crosses low points located at chainage 2100m and 2300m, where it's likely to be subject to inundation in infrequent and rare flood events, but no flood risk data is available for this location from the GBCMA.
Cultural Heritage	The section traverses an area with cultural heritage sensitivity. The Aboriginal ACHRIS identifies several records including Artefact Scatter and Scarred Trees.

# B.1.5 Section 2b – Cemetery Roadside Path

This section of the route links Old Toolamba to the cemetery along Toolamba Road.



Figure 7-5 Section 2b – Cemetery Roadside Path



Source: Stantec

Table 7-6 Section 2b Cemetery roadside path

Assessment	Response	
Site context	This is a short 800m section of the route linking Old Toolamba to the cemetery along Toolamba Road. The trail will follow the road until it meets the cemetery. This is an 80 kph road with a grass verge on both sides of the road	
Trail condition	There is no existing path.	
Land management	Toolamba Rd is a DTP-managed road.	
Environmental assessment	The section is located within the Victoria Riverina Bioregion (DEECA 2023). NVIM indicates that EVC-quality vegetation exists, consisting of:	
	<ul> <li>EVC 803 Plains Woodland (endangered)</li> <li>EVC 295 Riverine Grassy Woodland (vulnerable)</li> <li>EVC Shallows Sands Woodland (endangered)</li> </ul>	
Flood analysis	No flood risk data is available for this location from the GBCMA.	
Cultural Heritage	The section intersects an area with cultural heritage sensitivity. The Aboriginal ACHRIS identifies one record including a Scarred Tree.	

# B.1.6 Section 2c – Toolamba Cemetery to River Road

This section connects Toolamba Cemetery to River Road.



Figure 7-6 Section 2c – Toolamba Cemetery to Roadside Memorial



Source: Stantec

Table 7-7 Section 2c assessment

Assessment	Response
Site context	This follows the existing unsealed River Road until it reaches the roadside memorial. It is less scenic than the other options and has exposure to agricultural vehicles. However, the wide roads, low speed, and infrequency of vehicles suggests that this would be a safe route.
Trail condition	There is no existing path. Initially the local road could be shared with trail users, however, it would be beneficial to have an off-road path with a natural buffer from trees.
Land management	River Road is a Council-managed road.
Environmental assessment	<ul> <li>The section is located within the Victoria Riverina Bioregion (DEECA 2023).</li> <li>NVIM indicates that EVC-quality vegetation exists, consisting of:</li> <li>EVC 803 Plains Woodland (endangered)</li> </ul>
Flood analysis	The proposed route crosses low points located at chainage 2100m and 2300m, where it's likely to be subject to inundation in infrequent and rare flood events, but no flood risk data is available for this location from the GBCMA.
Cultural Heritage	The section is not in an area with cultural heritage sensitivity.



# B.1.7 Section 2d – River Road to Channel Crossing

This section of the route will link River Road to the channel crossing.

Figure 7-7 Section 2d – Riverside Memorial to Channel Crossing



Source: Stantec

#### Table 7-8 Section 2d assessment

Assessment	Response
Site context	This is a 2.6 km section that follows River Road, the first section is a continuation of section 2c. The second section of River Road can be busy with traffic and has narrow verges on either side. The preferred option is the off-road roadside trail. This provides separation from traffic, however, one section of the road has a signed speed of 100 kph which reduces the level of safety and comfort of users.
Trail condition	There is no existing path.
Land management	A section of River Road is a Council-managed road and the other section is a DTP-managed road. Approval of this option is required from the DTP as well as consultation with the local community.
Environmental assessment	The section is located within the Victoria Riverina Bioregion (DEECA 2023). NVIM indicates that EVC-quality vegetation exists, consisting of: • EVC 803 Plains Woodland (endangered)
Flood analysis	The proposed route crosses an irrigation channel at chainage 970m and
	1300m which will require pedestrian bridges.



Assessment	Response
	• The proposed route is likely to be subject to inundation during infrequent (<5%) and rare (1%) flood events between chainage 3300m and 4000m.
Cultural Heritage	The section is in an area with cultural heritage sensitivity but no ACHRIS records are found.

# B.1.8 Section 2e – Channel Crossing on River Road to Murchison

This is the final section of the proposed trail finishing in Murchison. It is 5.8km in length and follows River Road. For a portion of the track, the preferred alignment detours away from the road to follow the river to provide improved safety for trail users. This is due to the presence of illegal four-wheel driving, where creating a more formalised track will allow better monitoring and control.

Figure 7-8 Section 2e – Channel Crossing on River Road to Murchison



Source: Stantec



#### Table 7-9 Section 2e assessment

Assessment	Response
Site context	The trail mostly follows River Road and for a section accessing the river to remove users from River Road.
Trail condition	There is no existing path in the northern section. The section of the trail along the river needs to be upgraded and the southern section is in good condition.
Land management	This section of River Road is a DTP-managed road. The section close to the river is Crown Land.
Environmental assessment	The section is located within the Victoria Riverina Bioregion (DEECA 2023). NVIM indicates that EVC-quality vegetation exists, consisting of:
	EVC 295 Riverine Grassy Woodland
Flood analysis	N/A
Cultural Heritage	The section is in an area with cultural heritage sensitivity but no ACHRIS records are found.

# B.1.9 Tatura Connection

This section links Tatura to the Mooroopna/ Murchison corridor using Pykes Road. This section is 12km long and is in addition to the ~46km of trail running parallel to the Goulburn River.

A sealed road with wide grass verge exists from Tatura to Craven Road with a speed limit of 100 kph. Between Craven Road and the river trail the road is mostly unsealed and used by local traffic only.

There are several crossroads with varied traffic volumes and speeds. Tatura has several existing links to other well-used trails including the Jodie Ridges Trail which links Tatura to Shepparton.

Figure 7-9 Tatura Connection



Source: Stantec

# Appendix C. Flora and Fauna Desktop Assessment



# Appendix D. Aboriginal Cultural Heritage Due Diligence Assessment



# Appendix E. Concept Designs



# Appendix F. Cost Estimates







