Fairhaven to Skenes Creek Coastal Trail Feasibility Study

Final Report

Department of Environment, Land Water and Planning

14 November 2019

Building a better working world

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Executive summary

Visitation to the Great Ocean Road Region

Each year, more than five million visitors enjoy the Great Ocean Road region's (GORR's) unique combination of cultural, ecological and heritage-listed attractions. Visitation is crucial to the economic growth of the region and its local economies. Visitor numbers to the region has been steadily increasing, and projections estimate the region will attract 8.6 million visitors by 2026-27.[1]


Great Ocean Road at Mt Defiance

Despite this growth in total visitation, a large portion of visitors continue to be day-trippers or overnight visitors whose length of stay is less than the regional Victorian average. Many visitors experience the GORR from within a vehicle. There are large numbers of visitors to the region, who drive the Great Ocean Road, driving through many of the townships without getting out of their cars or buses and only stopping to view the 12 Apostles or for a quick snack along the way. This results in a lack of visitor spend for local towns. Towns between Melbourne and Apollo Bay are often bypassed due to their perceived proximity to Melbourne.

Part of this trend to view the region from inside a vehicle is driven by a lack of visitor offerings in the region. The region lacks a diverse range of complementary activities, commercial attractions and immersive experiences which encourage visitors to "stop, stay and spend" locally. This issue was also identified across Regional Victoria in the State Government's *Regional Tourism Review*.[2] Many visitors do not consider extending their trip in the region because they do not believe, or aren't aware of, other activities and experiences which would make extending their stay worthwhile.

The opportunity to create an iconic experience

The GORR possesses some of the most spectacular nature-based experiences in Australia. From rainforests and rivers to old volcanoes and rugged coastlines, the Great Ocean Road showcases nature at its most diverse.

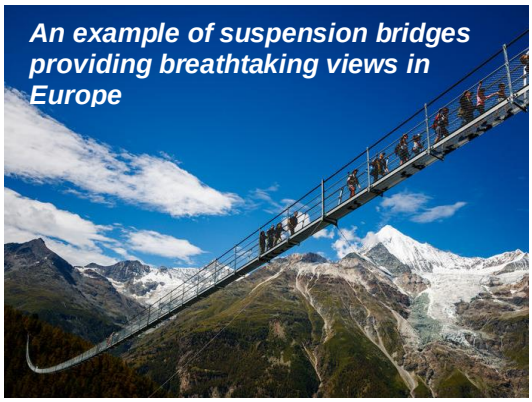
Leveraging and developing these natural assets has the potential to significantly improve the visitor experience through offering a broader array of activities and experiences in the region. Improving and extending the tourism offering can convert existing day trippers into overnight visitors and to attract a new wave of eco-based visitors to the region. Expanding the offering in the GORR requires both public and private investment. This includes, development of high-quality accommodation, food and wine, restaurants and more family and group activities options outside of peak summer visitation.

One such investment which would expand the offering to visitors and support growth in visitation is the construction of a walking/cycling trail with outstanding coastal and hinterland views that includes a 'wow

[1] Deloitte Access Economics (September 2016). *Visitor and accommodation forecast – Great Ocean Road.*

[2] Department of Jobs, Precincts and Regions. 2019. *Regional Tourism Review Discussion Paper: July 2019*

factor'. Such an investment would encourage people to get out of their cars and experience the GOR region from new and breathtaking advantage points.



An example of suspension bridges providing breathtaking views in Europe

A new trail with iconic views and suspension bridges would provide a range of walking options to cater for a broad range of visitors. From a couple of hours through to multi-day walks. The trails will provide options to appeal to both existing visitors to the region and new expanding markets such as the nature-based visitor market. It would be pitched at a level that appeals to a broad range of visitors.

An extended mountain bike trail in the Forrest area could reinvigorate Forrest and attract new visitors to the Region. New styles of trail, including a gravity flow trail travelling from Mt Cowley, could be a significant drawcard for experienced and budding mountain bikers.

The project would encourage greater overnight stays in the region. The trail would provide a link to the coastal towns of Fairhaven, Lorne, Wye River and Kennett River and encourage visitors to combine a long or short walk with the accommodation, food and entertainment offer in each town.

Aim of this feasibility study

This feasibility study (the Study) explores various trail designs and concepts, tests the viability of implementing each trail concept design and assesses the anticipated costs and benefits of each trail concept. Specifically, the Study:

- Considers the potential opportunities and challenges associated with trail development
- Identifies a feasible route and concept designs to connect new sections of trail between Fairhaven and Skenes Creek with existing and already planned trails
- Estimates construction and ongoing maintenance costs associated with different trail options
- Assesses economic benefits and feasibility of trails along the coast.

Trail design

The Study considers whether a trail can cater to pedestrians, cyclists or both at the same time (i.e. shared-use). Detailed stakeholder consultation, desktop review and fieldwork, determined that the walkers and cyclists would be best accommodated on separate trails, to optimise the experience of each user group:

- The walking route could therefore incorporate existing walking trails and sections of beach and coastal rock platforms
- The cycling route could be longer in distance and take a more winding inland route, avoiding beach sections and existing walking tracks.

With its multiple entry and exit points, its mix of attractions, features, landscapes, ecosystems and its interconnectedness with towns and visitor centres, the trail offers broad appeal to a range of visitor groups including families, adventure visitors, young and older people who visit the Great Ocean Road region already and nature-based visitors who may not have visited the region. It is envisaged that the trails will also encourage local residents to actively participate in outdoor walking activities, providing a trail parallel to the coastline. While the trail stretches over 40km between Fairhaven and Grey River, it provides a range of options, including end to end walks, multi-day hikes, single day hikes from one town to the next and shorter loop trails of 2-4 hours to take in the more spectacular views. In addition, the feasibility study also considers extended mountain biking trails.

Confirmed route option - Walking trail

The trail alignment for the preferred concept design has been broken down into four specific sections:

- Fairhaven to Lorne

- Lorne to Wye River
- Wye River to Grey River (with an alternative of Wye River to Kennett River)
- Grey River to Skenes Creek.

Visitors utilising the walking trail will witness breathtaking views of the coast and further inland, with the highlight being the views from five suspension bridges located along the trail. These bridges will reveal stunning surrounding scenery from the highest points in the GORR and the Otway's, offering visitors an experience of the Great Ocean Road like never before.

Who and how will the trail be used?

The trail is proposed to be designed to meet the Australian Walking Track Grading System between Level 2 and 3, meaning that no bushwalking experience is required. The trail may include some steps or a gentle gradient increasing to short steep sections. The users are expected to be predominately visitors to the GORR region (either existing visitors or new visitors) and can be grouped into three potential categories:

- Those wanting a short walk (1-2 hours, taking in the spectacular suspension bridges and coastal views)
- Those willing to walk longer distances (3-6 hours) either a loop or from one town to the next
- Those wanting longer walks of 3+ days, these visitors would be more self-sufficient bringing a pack and walk from Fairhaven to Wye River or Kennett River, utilising existing camping grounds, Airbnb or hotel accommodation on the way through.

Each section of the trail varies in distance and terrain and will be designed to allow visitors of all ages and abilities an opportunity to experience parts this unique offering.

There will also be several lookout points along the trail that will provide visitors with stunning views of the Great Ocean Road coastline. While the proposed lookout points have been selected for their natural openings and views of the coastline, they also act as a strategic point for visitors to be able to stop, rest and decide whether to continue along the trail or turn back and return to their point of origin. There are also shelters proposed to be constructed at key trail intersections to provide visitors with shade and protection from inclement weather.

The trail distances, estimated travel times and accommodation options for walkers to complete each section is set out in Table 1. There are also shorter loops available within most sections, and particularly around the proposed suspension bridges between Lorne and Wye River.

Table 1: Trail design

	Fairhaven to Lorne	Lorne to Wye River	Wye River to Grey River	Grey River to Skenes Creek
Distance (km)	28.4km	39.5km	12.3km	18.6km
Estimated travel time for walkers (End-to-end)	1 – 2 days	3 days	1 day	1-2 days
Accessible Townships & Accommodation Options	Moggs Creek, Eastern View, Big Hill, Big Hill Track Camp Ground, Lorne	Lorne, Allenvale, Cumberland River, Jamison Creek Camp Ground, Separation Creek, Wye River	Wye River, Kennett River, Grey River	Grey River, Skenes Creek

Supporting infrastructure

Supporting infrastructure needed to encourage visitation includes trail identification access and carparking upgrades at Big Hill, Lorne, Cumberland River, Wye River and Kennett River. These will provide easy access the trail and in particular the suspension bridges. Trail users can also utilise existing accommodation options in each of the towns and locations connected by the trail. The Geelong City Deal has committed $1.9 million to upgrade car parking and toilet facilities at Kennett River to improve visitor amenity. There are also opportunities at Big Hill and Cape Patton for a private operator to provide "glamping", lodge or other accommodation with the trail running adjacent to private property with beautiful views over the ocean. Similarly, there are opportunities at Kennett River to also enhance the accommodation offering through private investment.

Summary costs

The costs for the construction of each section of trail are dependent on:

- The amount of new trail constructed (compared with use of existing trails which only need to be upgraded)
- The number and span of the suspension bridges proposed
- How technical the solution needs to be in particular sections (such as the requirements for boardwalks and safety infrastructure).

Table 2 summarises the capital and operating cost estimates for each of the four sections for the walking trails. The operating costs were calculated over a 20-year period.

Table 2: Summary cost estimates (real) ($m)

Section reference	Capital cost estimate ($m) (includes a 30% contingency)	Operating and Maintenance cost estimate for 20 years ($m) (NPV)	Total cost estimate ($m)
Section 1: Fairhaven to Lorne	$5.6 - $8.1	$2.2	$7.9 - $10.4
Section 2: Lorne to Wye River	$8.5 – $12.8	$3.3	$11.8 – $16.1
Section 3: Wye River to Kennett River	$1.0 - $1.3	$0.4	$1.4 - $1.7
Section 3a: Wye River to Grey River	$2.0 - $2.7	$0.9	$2.9 - $3.6
Section 4: Kennett River to Skenes Creek	$29.1 - $51.7	$5.5	$34.7 - $57.3
Section 4a: Grey River to Skenes Creek	$28.2 - $50.4	$5.1	$33.2 - $55.5
Total (with Section 3a and section 4a)	**$44.3 - $74.1**	**$11.5**	**$55.8 - $85.6**

The indicative cost estimate for the section of trail between Grey River and Skenes Creek is expected to be significantly greater than for other sections of trail. Between Grey River and Skenes Creek there is limited opportunity to build a trail above the road due to private land holdings and very steep profiles in this part of the GOR. As a result, a boardwalk solution below the road level on the ocean side has been considered as a possible route. This design solution is highly technical in nature and will require structures to be built into the side of cliff faces and the construction of rock revetments along low lying beach sections with a trail built on top. There are also significant risks associated with the cost of ongoing maintenance and safety of these options. Without this section of trail, the estimated cost of the project is $22.6 million to $30.1 million.

Operating and maintenance costs have also been estimated for the trail. It is expected that all trails will require a level of ongoing maintenance to ensure that they are maintained to a safe standard that meets visitor expectations. In addition, structures such as suspension bridges will require ongoing review and asset maintenance over time.

Because of the large costs associated with the section between Grey River to Skenes Creek. Two options have been considered for the walking trail and one for the Mountain Bike trail in this feasibility Study:

- Concept Design Option 1: Full Trail between Fairhaven and Skenes Creek
- Concept Design Option 2: Partial Trail between Fairhaven and Grey River
- Concept Design Option 3: Mountain Bike trail.

Details on the scope and economic benefits of Option 3, the mountain bike trail can be found in Section 7 of this report.

Summary economic benefits

The major economic benefit generated by the trail is an increase in ‘specific and extended stay visitation’ to the region. Additional visitation results in additional tourism spend in the GORR, which provides an economic benefit to the region. The analysis captures new visitors to the GORR and

existing visitors staying longer because of the trail. We do not include existing visitors to the region who use the trail, as these visitors were already visiting the region, so their tourism spend is already assumed without the project.

The increase in visitation can be split into three groups:

- Visitors who already visit the GORR for the day, but now stay overnight because of the trail.
- Visitors who already stay overnight in the GORR but now stay for longer because of the trail.
- New visitors attracted to the GORR because of the trails.

The number of additional visitors under each of these categories has been estimated, with reference to existing visitation to trails in the region or similar trails in other regions. This includes these trails in the region, Surf Coast Walk, Great Ocean Walk, Grampians Peak Trail and the Three Capes Track and Overland Track in Tasmania.

Table 3: Average daily specific and extended stay Trail users (medium visitation scenario)

	Daily additional visitation			Annual additional visitation		
Visitor type	**Year 1**	**Year 5**	**Year 10**	**Year 1**	**Year 5**	**Year 10**
Domestic overnight visitors	11	42	46	4,184	15,466	16,704
International overnight visitors	3	11	17	1,039	4,098	6,319
Daytrip visitors	22	90	104	8,200	32,747	37,867
Total visitors	**37**	**143**	**167**	**13,423**	**52,311**	**60,890**

Total new visitation to the GOR region as a result of the Coastal Trail was estimated by EY to be 52,311 new or extended stay visitors per year once the trail is in full operation. In comparison:

- Great Ocean Walk attracts approximately 20,000 new visitors to the region per year (mix of day and overnight visitors), however this walk is aimed a smaller group of more “hard core” bushwalkers who walk for multiple days and camp
- Grampians Peak Trail attracts approximately 16,000 visitors per year (6,000 overnight), however most sections include rocky and steep terrain and are better suited to more experienced bushwalkers and the trail is approximately three hours from Melbourne
- Three Capes Track attracted 12,000 new visitors per year to the local region. Visitation to this trail is somewhat limited by the number of permits issued for the trail per day and the number of accommodation spots available along the trail
- Overland Track attracted 8,000 new visitors to the region per year.

The Surf Coast Walk estimated that a total of 82,000 people used the trail per year in 2008. We understand that this number includes both new visitors to the region as a result of the trail as well as existing visitors who also happen to use the trail.

Summary Cost Benefit Analysis (CBA)

To capture the broad range of benefits of the project a CBA was undertaken. A CBA attempts to monetise all benefits and costs to determine the net benefit to the community. The capital costs, ongoing maintenance and operating costs and economic benefits of the options (including new visitor spend, health impacts and economic value generated in the region) have been quantified and discounted to a common point in time to determine the net present value of each option.

Table 4 summarises the Net Present Value (NPV) results of the economic feasibility analysis by major cost and benefit categories for the medium visitation scenario. A real discount rate of seven per cent was applied to work out the NPV of all costs and benefits. EY also modelled a low and a high visitation scenario. A BCR of less than 1 means that the costs outweigh the benefits, a BCR of more than one means that the benefits outweigh the costs.

Table 4: Regional economic analysis (real) ($m)

	Concept Design Option 1: Full walking trail (Fairhaven to Skenes Creek)	Concept Design Option 2: Part walking trail (Fairhaven to Grey River)
Costs (NPV) ($m)		
Capital expenditure	$59.7	$20.3
Operating expenditure	$10.2	$5.4
Total	**$69.9**	**$25.7**
Benefits (NPV) ($m)		
Visitation	$45.9	$42.2
Health impact	$0.5	$0.5
Value generated in the region • Design costs • Construction costs • Maintenance costs	 $0.4 $42.3 $7.2	 $0.4 $14.4 $3.8
Total	**$96.3**	**$61.3**
Outputs		
Net Benefit (Cost)	$26.4	$35.6
Benefit-Cost Ratio (BCR)	**1.38**	**2.39**

Preferred concept design option

The economic feasibility analysis has identified **Concept Design Option 2: Part walking trail (excluding Grey River to Skenes Creek**) as the preferred concept design and most economically viable option. This option delivers the highest BCR of the options assessed (including the mountain bike trail). It also delivers the highest estimated net benefit of $35.3 million (compared to $26.1 million for the Concept Design Option 1). A map of the preferred option is included in Figure 1.

Next steps

The preferred concept design will be used to develop of project options to be assessed in a Full Business Case. Project options are likely to range from a do-minimum option representative of the construction of a shorter length of the trail through to the construction of the entire trail (excluding Grey River to Skenes Creek section which has proven to be not economically feasible). The viability of each project option will then be determined via a more detailed CBA.

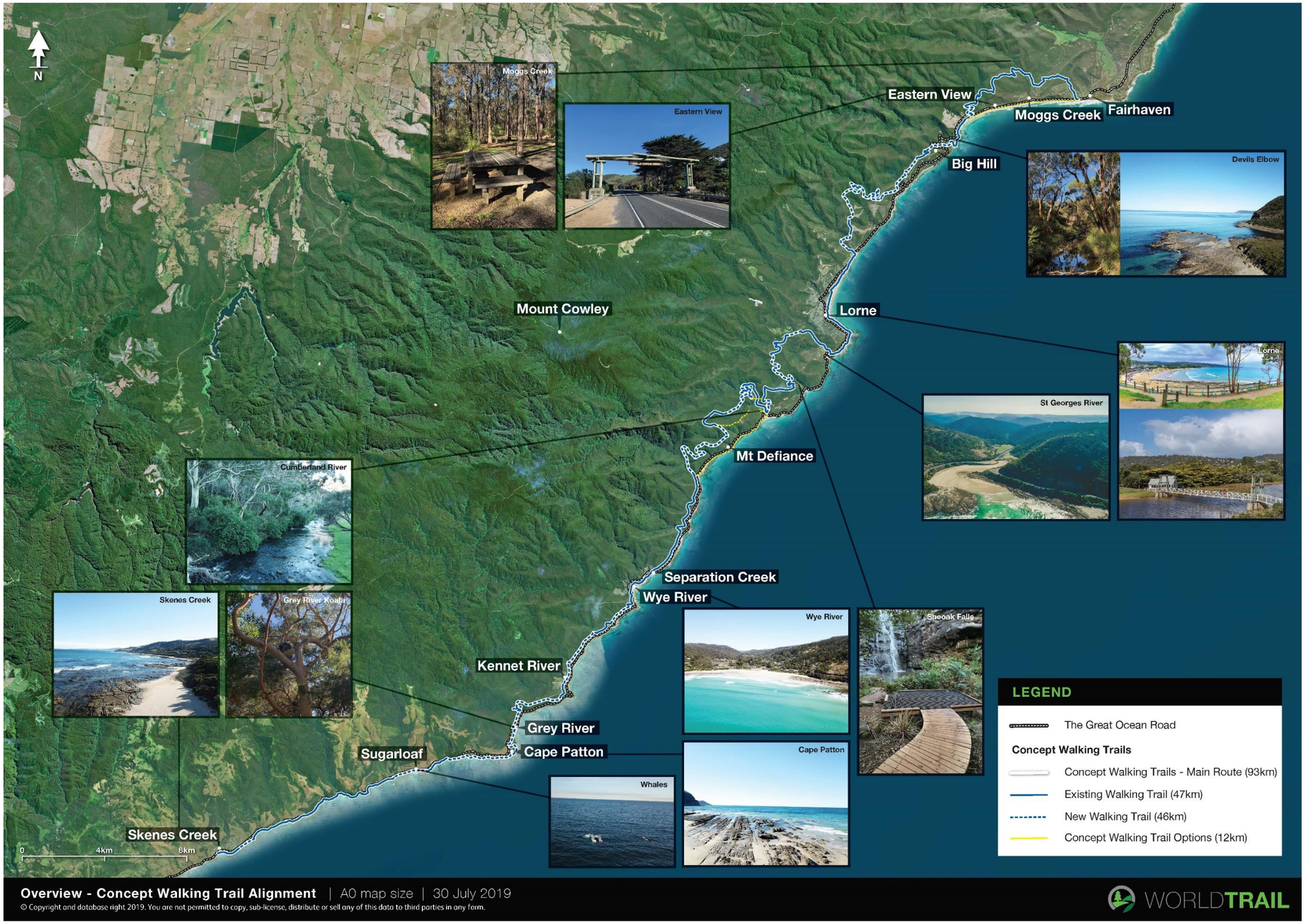
In moving forward with developing the preferred trail route, there a number of steps to be undertaken to progress towards construction. These next steps may include:

- Trails Master Plan (including ground-truthing of the proposed trail route)
- Permits and approvals
- Investigating private sector opportunities including new accommodation, shuttle services, food and beverage offerings and potential events that could be held along the trail
- Further stakeholder engagement on the confirmed design route, including with Traditional Owner groups
- Trail construction.

Traditional Owners – Eastern Maar Aboriginal Corporation

Eastern Maar Aboriginal Corporation (EMAC) is a professional organisation that represents the Eastern Maar People of South West Victoria and manages their Native Title rights and interests. EMAC have been involved extensively in the stakeholder consultation process and has expressed interest in participating in the design process and ongoing operation of the trails.

Figure 1: Preferred concept design option

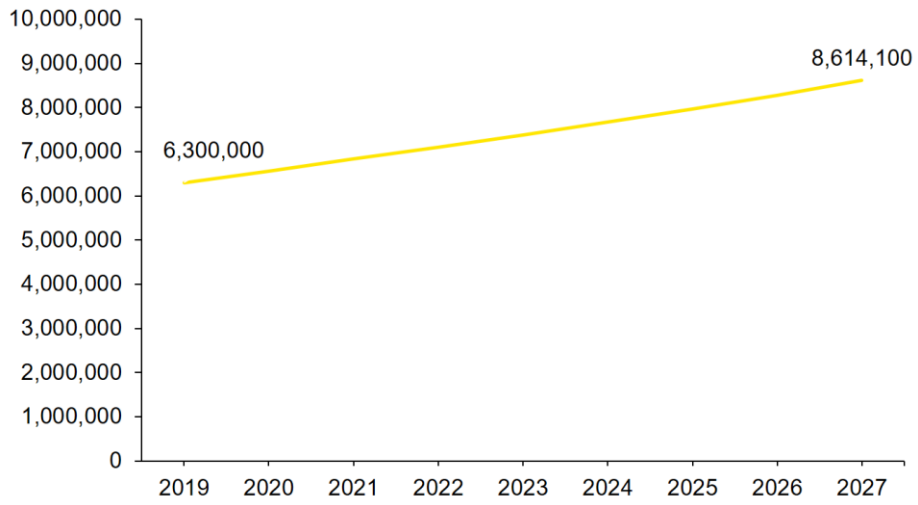


1. Introduction

1.1 Background and regional context

Each year, more than five million visitors enjoy the Great Ocean Road region's (GORR's) unique combination of cultural, ecological and heritage-listed attractions. Visitor numbers to the GORR far outweigh those to other premier Australian ecotourism attractions such as the Great Barrier Reef (approximately 2.3 million)[3] and central Australia (712,000).[4] Visitation to the GORR is crucial to the economic growth of the region and its local economies. The volume of visitors to the region has been steadily increasing, and projections estimate 8.6 million visitors per annum by 2026-27.[5]

Figure 2: Great Ocean Road visitor projections, 2019-2027[6]



Despite this growth in total visitation, a large portion of visitors are either daytrip visitors or overnight visitors whose length of stay is less than the regional Victorian average. Many visitors experience of the GORR is limited to within their vehicle. There are large numbers of visitors to the region, who drive the Great Ocean Road (driving through many of the townships without getting out of their cars or buses) and only stop to view the 12 Apostles or for a quick snack along the way. This results in a lack of visitor spend for local towns. Towns between Melbourne and Apollo Bay are often bypassed due to their perceived proximity to Melbourne.

Part of this trend to view the region from inside a vehicle is driven by a lack of visitor offering in the region. The region lacks a diverse range of complementary activities, commercial attractions and immersive experiences which encourage visitors to "stop, stay and spend" locally. This issue was also identified across Regional Victoria in the State Government's *Regional Tourism Review*.[7] Many visitors do not consider extending their trip in the region because they do not believe (or aren't aware of) other activities and experiences which would make extending their stay worthwhile.

In comparison, other Victorian tourism regions such as Mornington Peninsula, Daylesford and Macedon Ranges, provide a broader range of commercial experiences for visitors including world-class restaurants, galleries, wellness experiences, wineries and accommodation. It is these commercial attractions that encourage people to stay in the region longer, spend more and support local economies.

[3] Great Barrier Reef tourist numbers, Great Barrier Reef Marine Park Authority, 2019
[4] Department of Trade, Business and Innovation, Tourism, 2019
[5] Deloitte Access Economics (September 2016). *Visitor and accommodation forecast – Great Ocean Road.*
[6] Deloitte Access Economics (September 2016). *Visitor and accommodation forecast – Great Ocean Road.*
[7] Department of Jobs, Precincts and Regions. 2019. *Regional Tourism Review Discussion Paper: July 2019*

The GORR possesses some of the most spectacular nature-based experiences in Australia. From rainforests and rivers to old volcanoes and rugged coastlines, the Great Ocean Road showcases nature at its most diverse.

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One such investment which would expand the offering to visitors and support growth in visitation is the construction of a walking/cycling trail with outstanding views and a 'wow factor'. Such an investment would encourage people to get out of their cars and experience the GOR region from new and breathtaking advantage points.

An example of suspension bridges providing breathtaking views in Europe

A new walking trail with iconic views and suspension bridges would provide a range of walking options to cater for a broad range of visitors. From a couple of hours through to multi-day walks. The trails will provide options to appeal to both existing visitors to the region and new expanding markets (for example the nature-based visitor market). It would be pitched at a level that appeals to the broad range of visitors, walkers, hikers, trail runners, mountain bikers and cyclists (not only professional trail walkers).

Both options would encourage greater overnight stays in the region. The trail would link back into the coastal towns of Fairhaven, Lorne, Wye River and Kennett River and encourage visitors to combine a long or short walk with accommodation and entertainment in town.

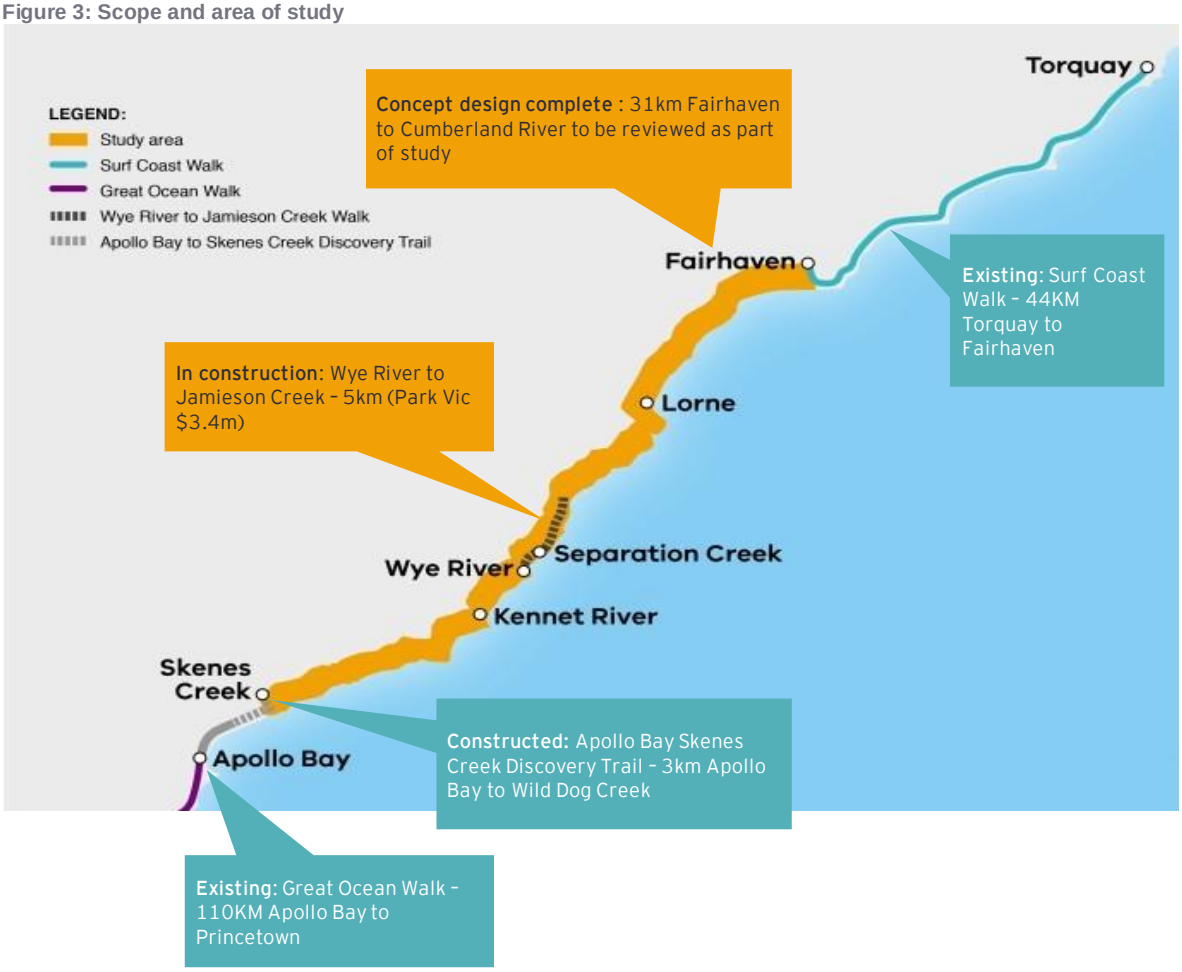
1.2 Background to the project

In September 2018, following recommendations from the Wye River, Separation Creek and Kennett River Renewal Association's (WSKRA's) Community Renewal Program, the Victorian Government announced funding of $300,000 to investigate the merit of designing a walking trail from Apollo Bay to Torquay as part of its strategic plan to increase visitation. In conjunction with this Victorian funding commitment, the Commonwealth Government has also committed $350,000 to undertake more detailed planning, engineering and geotechnical investigations necessary to develop the proposal further.

The study area for the project has been refined from Apollo Bay to Torquay to a smaller section of Fairhaven to Skenes Creek. This is due to there already being a coastal trail between Torquay and Fairhaven (part of the Surf Coast Walk) and The Apollo Bay to Skenes Creek Discovery Trail being funded through the Geelong City Deal.

For these reasons the study area has been redefined as Fairhaven to Skenes Creek, as highlighted (in orange) in Figure 3 below. The new trail will potentially link to both the Surf Coast Walk in the north and the Great Ocean Walk in the south.

Figure 3: Scope and area of study



1.3 Aims of the Feasibility Study

This feasibility study (the Study) will explore various trail designs and concepts developed and determine the viability of implementing each trail concept design by assessing the anticipated costs and benefits of each trail.

The Study will:

- Consider potential opportunities and challenges associated with trail development
- Identify a feasible route and concept designs to connect new sections of trail between Fairhaven and Skenes Creek with existing and already planned trails
- Estimate construction and ongoing maintenance costs
- Assess economic benefits and feasibility of linked trails along the coast.

Concept design options for the trail route will be developed and these will be tested with particular focus on the financial, technical and economic feasibility of each concept design as presented in Table 5 below.

Table 5: Feasibility study assessment criteria

Phase	Description
Financial feasibility	The financial feasibility considered: ► Capital cost estimates for different components of the trail ► Potential maintenance and operational costs (labour and materials).
Technical feasibility	The technical feasibility considered: ► Length, width and gradient of trails

Phase	Description
	► Characteristics of the land in its current form (e.g. coastline/forest, privately/Government owned, linked to existing trails, crossing of drainage lines etc.) ► Safety and visual amenity for trail users.
Economic feasibility	The economic feasibility considered: ► Forecast visitation to the GORR ► Economic impact of trail users visiting the GORR (considering visitor length of stay and expenditure).

1.4 Key study phases

The planning process employed for this project included four key phases as outlined in Table 6.

Table 6: Study phases

Phase	Description
Phase 1: Initial data collection, identification of key issues and opportunities	► A review of background information provided by DEWLP and of other trails and visitors to the region ► Collection of key issues and opportunities from the community and key stakeholders through Phase 1 consultation. Consultation included stakeholder sessions, survey and one-on-one meetings with key groups ► GIS mapping ► Initial ground-truthing ► Development of an Issues and Opportunities Paper which also benchmarked other high-quality existing trails.
Phase 2: Initial concept design	► Consideration of feedback from Phase 1 of the community and stakeholder consultation ► Development of concept trail options ► Presentation of the concept to the Technical Working Group (TWG) ► Presentation of the concept to the Community Reference Group (CRG) and also at community stakeholder sessions to see feedback on the trail routes and type of trail preferred by the community.
Phase 3: Refinement of design and cost	► Initial ground truthing of key sections of the proposed trail ► Consideration of feedback in Phase 2 ► Refinement to the concept design ► Development of preliminary route options ► Development of costings for the preferred route broken into sections.
Phase 4: Economic feasibility	► Assessment of the economic feasibility of each trail concept design option.

1.5 Report structure

The report is structured as follows:

- Section 2 summarises regional trail demand
- Section 3 provides a summary of community and stakeholder consultation undertaken as part of the study
- Section 4 outlines the trail design process
- Section 5 identifies route development options
- Section 6 presents the confirmed route option
- Section 7 assesses the economic feasibility of concept design options.

2. Regional trail users

2.1 Demand for nature-based visitor experiences and trail walking

This section provides a summary of the existing demand for nature-based visitor experiences and demand for existing trails in the region and Victoria.

2.1.1 Nature-based tourism

The GORR possesses a great breadth and depth of nature-based tourism offerings that have the potential to appeal to a new wave of visitors who look for outdoor recreation and eco-based tourism opportunities and experiences.

Nature based visitors make up 19% of Victoria's total visitors or a total of 8.3 million visitor nights. As shown in Table 7, domestic nature-based tourism is growing. In the past year there were an additional 600,000 visitor nights, with the domestic nature-based tourism visitor nights increasing by 11% and international nature-based visitor nights increasing by 5% in Victoria alone. This demonstrates the immense opportunity of this growing market for the GORR.

Table 7: Nature-based tourism visitation in Victoria (2018/19)

Visitor type	Number of visitors	% change from 2017-18
Nature-based domestic overnight visitors	6.1 million	+11%
Nature-based international overnight visitors	2.2 million	+5%

There is an opportunity to design a trail route that attracts this broad and growing market for travellers and grow the proportion of those coming to GORR. This will enhance the region's reputation as a nature-based visitor destination and provide an attractive destination for walkers, hikers, trail runners, mountain bikers and cyclists.

2.1.2 Demand for domestic walking trails

Users of walking trails vary from families to adventure visitors each seeking different experiences. And as a result, there is significant variation in the number of trail users across different types of trails. Table 8 provides a summary of visitation, track characteristics and targeted users of selected Victorian and domestic trails. The level of visitation is driven by a range of factors including track difficulty, number of available permits (Overland Track) and proximity to major town/city. There is also in important distinction in these numbers, the numbers for Surf Coast Walk include both existing visitors to the region as well as new visitors to the region who use the trail. The visitor numbers for the other trails represent only where there are new visitors to the region due to the trail. In determining the economic impact of the trail, we are primarily concerned with how many new visitors either visit the region or stay an additional night due to the trail.

Table 8: Summary of regional trails

Trail	Number of users	Characteristics of track	Targeted users
Surf Coast Walk (Victoria)	80,000 total users per year[8] - including both new and existing visitors to the region. ► 42,000 daytrip visitors, ► 29,000 domestic overnight visitors ► 11,000 international visitors	Mostly Grade 2 and Grade 3 (well-formed track or beach walking)	'Soft adventure'
Great Ocean Walk (Victoria)	New visitors to the region to use the trail: 19,350 in 2014[9]	Mostly Grade 3 and Grade 4 (steep tracks and rugged terrain)	'Hard adventure'

[8] Insight Leisure Planning. 2008. *Surf Coast Walk Feasibility Study*

[9] Parks Victoria. 2014. Grampians Peaks Trail 2014 Master Plan

Trail	Number of users	Characteristics of track	Targeted users
Grampians Peaks Trail (Victoria)	New visitors to the region to use the trail: 13,800 in 2015; estimated to increase to 23,000 by 2020 and 34,000 by 2025[10]	Grade 4 (very steep, formed track with many obstacles)	'Hard adventure'
Three Capes Track (Tasmania)	New visitors to the region to use the trail: 12,000* in 2017[11]	Grade 3 (timber boardwalk, gravel and stone steps)	'Soft adventure'
Overland Track (Tasmania)	New visitors to the region to use the trail: 8,000 per year[12]	Grade 4 (including through rainforest)	'Hard adventure'

* Bookings limited to 48 walkers per day

Visitation forecasts from regional trails were used to estimate the potential visitation uplift that may be achieved because of a new coastal trail in the region. Visitation forecasts are explored in further detail in Section 8.

[10] Parks Victoria. 2014. Grampians Peaks Trail 2014 Master Plan

[11] https://www.themercury.com.au/lifestyle/travel/surge-in-number-of-visitors-to-states-national-parks-spurs-spending-call/news-story/6601a7af2f1db7ebba4c71e8aa4962cb

[12] https://www.parks.tas.gov.au/index.aspx?base=7827

3. Stakeholder and community consultation undertaken

3.1 Introduction

A two-phase engagement program was implemented between May and August 2019 to obtain inputs to the study and trail design development, respond to targeted questions and identify issues and challenges for trail design. Face-to-face and online engagement options were provided in each phase to maximise participation and provide flexible and accessible ways for people to get involved.

Information about the study and proposed trail was shared and participation actively encouraged using a range of tools designed to build awareness and understanding of the study, including:

- Study webpage engage.vic.gov.au/trail-study
- Community open house sessions
- Information materials - fact sheets, maps, presentations, images
- Media releases and responses to media enquiries
- Direct emails or telephone calls to identified community, business, user and environmental groups
- Email updates to subscribers
- Social media
- Sharing information via stakeholders and project Reference Groups
- Posting information in shop windows and community noticeboards in Apollo Bay, Wye River and Lorne

3.2 Key stakeholders consulted

The study team spoke with over 100 people at community open house sessions, received almost 300 survey submissions and met with individual stakeholders and Reference Groups convened to provide advice to the study team. Key stakeholders consulted as part of this engagement program include:

- State government departments and agencies
- Local government
- Traditional Owners
- Local residents and property owners
- Regular visitors to the area
- Business owners and their employees
- Tourism and business groups
- Tour and event operators
- Environmental groups
- Community/resident groups
- User groups.

Traditional Owners – Eastern Maar Aboriginal Corporation

Eastern Maar Aboriginal Corporation (EMAC) is a professional organisation that represents the Eastern Maar People of South West Victoria and manages their Native Title rights and interests. EMAC have been involved extensively in the stakeholder consultation process and has expressed interest in participating in the design process and ongoing operation of the trails.

Snapshot of engagement

- Seven community open house sessions across Phase 1 and 2
- 100+ face-to-face conversations with community members
- Five stakeholder meetings and two Community and Stakeholder Reference Group meetings
- 292 surveys, five submissions, 45 sticky notes and 27 map comments received
- 1,600 visitors viewed the project webpage over 2,900 times
- Around 3,500 individual comments made, reviewed and analysed.

3.3 Phase 1 Stakeholder consultation

Through the first phase of engagement, we heard the community's vision for the trail. Important attributes identified through this feedback included that the trail:

- Caters for different users and abilities
- Sensitive to the natural environment
- Supports sustainable tourism
- User-friendly with the right supporting facilities
- Iconic with spectacular views
- Connects coastal towns and links up other trails in the area.



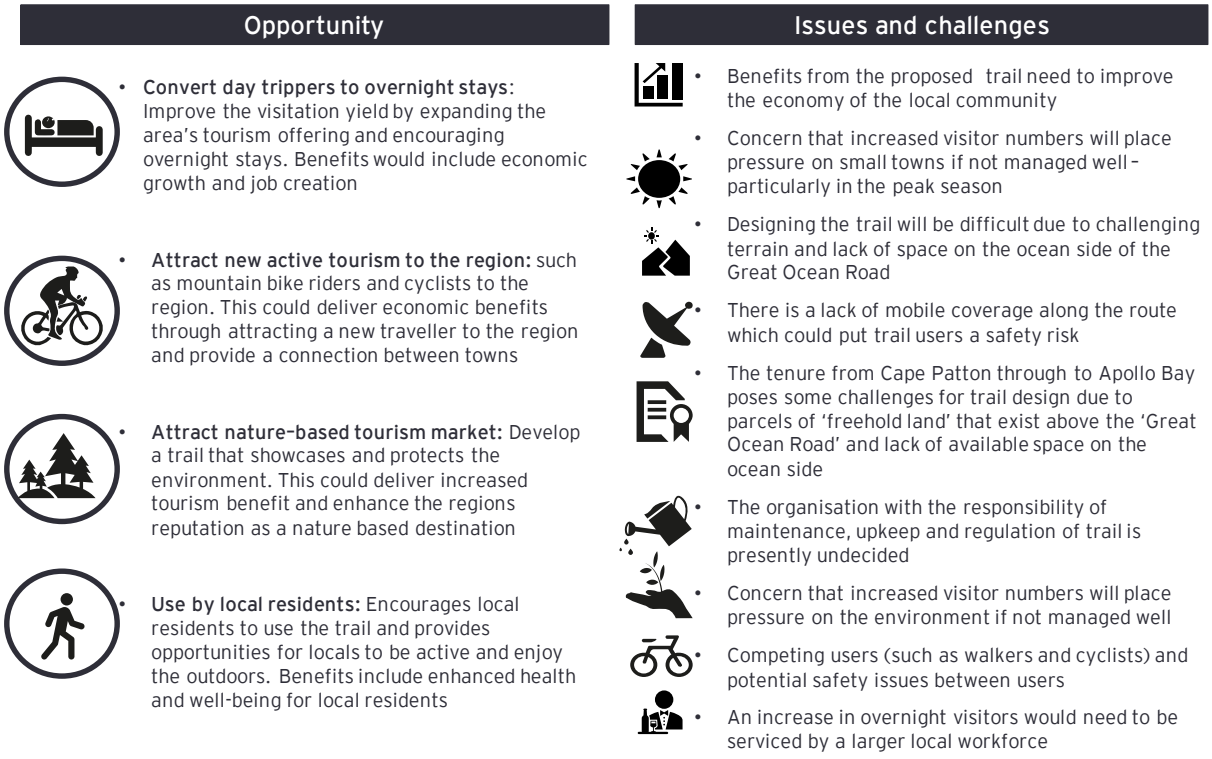

3.4 Issues and opportunities

The issues and opportunities identified from the first round of stakeholder consultation were considered in the development of the concept design for the trail. Participants identified tourism and the flow on benefits of visitation as being the largest opportunity presented by the trail, followed by social benefits resulting from improved connectivity, safety and health and wellbeing. Key challenges

raised for consideration by the project team were environmental protection, striking a balance between conservation and tourism, terrain, weather and coastal conditions.

Figure 4 summarises some of the key issues and opportunities associated with developing a trail.

Figure 4: Identified issues and opportunities



3.5 Phase 2 Stakeholder consultation

The draft trail concept design presented in the second phase of engagement elicited diverse and divergent views from participants. The two themes that emerged most strongly are the importance of environmental protection and creating a great user experience (creating a real wow factor to attract people to the trail and the region). There was also recognition of the tension that can exist between these two values.

Throughout both phases of engagement, many topics of interest were raised which were not directly relevant at this very early stage in the project's development. These related to more detailed elements of the trail such as the need for detailed environmental studies, cultural heritage studies, geotechnical studies, signage and marketing of the trail.

It will be important to consider and reconsider these topics at each future stage to ensure that all potential issues and opportunities are appropriately addressed, and risks managed. This may involve further consultation on specific topics at the right time.

4. Trail design process

4.1 Guiding principles

Prior to route investigations commencing, a suite of guiding principles was developed to help guide the conceptual design for the trail. These are shown in Table 9 below.

Table 9. Guiding principles and rationale

Principles	Rationale
1. Trail to provide an iconic and world-class user experience.	One of the primary drivers for this project is the need to create an economic stimulus by: ► Encouraging existing visitors to stay longer ► Attracting new visitors to the region. To achieve this, the experience provided by the trail must be as compelling as possible, and comparable to other world-class trail experiences.
2. Trail to use existing infrastructure (trails, bridges, management vehicle tracks etc.) where practical to minimise impacts and costs.	The use of existing infrastructure (trails, bridges, management vehicle tracks) offers the following benefits: ► Reduces the implementation cost of the trail ► Reduces the environmental impacts of the trail ► Provides an opportunity for re-investment/renewal of existing infrastructure. However, the use of existing infrastructure should not be prioritised over the need to provide an iconic and world-class experience.
3. Trail to facilitate use of existing accommodation and facilities in townships to drive economic benefit.	Designing the trail to connect into the townships along the coast, ensures that trail users can spend at local businesses – accommodation, food and beverage, retail and service providers. Some of the longer sections of the trail may require additional camping or accommodation facilities to be created, but primarily the objective is to design the trail to encourage users to use existing accommodation services in the coastal townships.
4. Trail to provide mix of hinterland and coastal environments to showcase diverse landscapes and increase appeal, but to focus on the coast where practical.	The trail should provide access to as many different aspects / views / landscape elements / vegetation communities as possible within the study area. These different landscape elements all add to the richness of the user experience and create opportunities for environmental education and interpretation.
5. Trail to be located within 1km of the coast where practical.	With the impending move to a single land manager along the Great Ocean Rd (the Great Ocean Road Coast and Parks Authority), much of the study area will come under one land manager. While the exact details are yet to be resolved, it is likely that much of the land within 1km of the coast may fall into land managed by the Authority. Locating the trail within this footprint will facilitate numerous management efficiencies for the future.

4.2 Desktop review

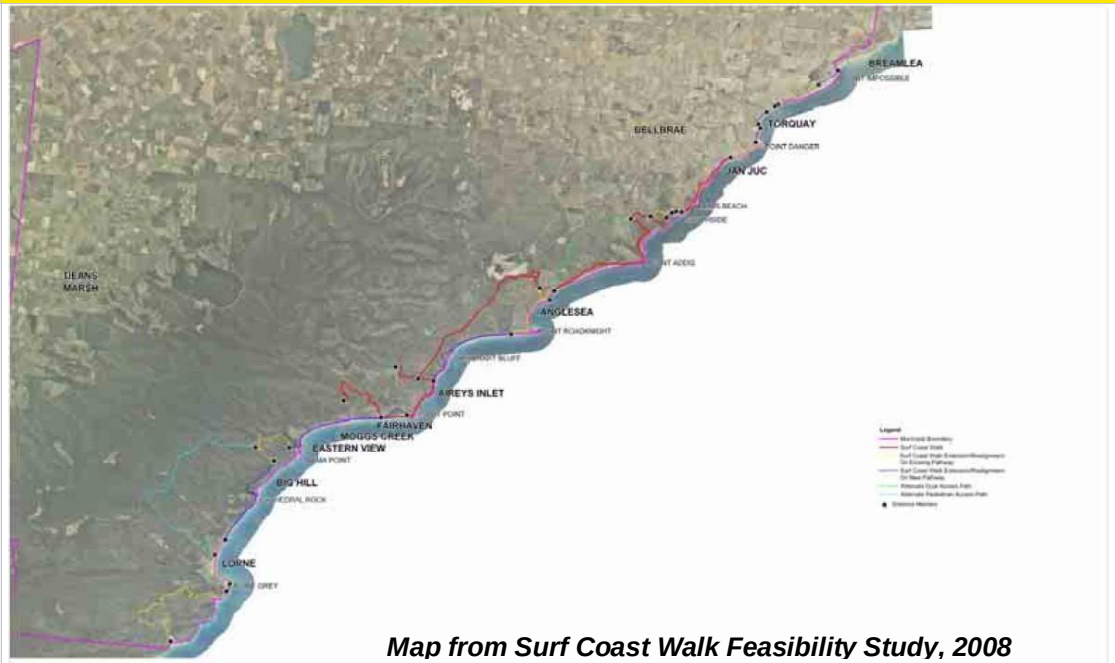
Following the development of the guiding principles, the next step was to undertake a desktop review of the proposed trail. In this desktop review, the objective is to determine what constraints and opportunities are known and to help narrow down the potential alignment available for the trail. Table 10 below lists the areas of inquiry considered during the desktop review and provides some brief discussion around each.

Table 10. Areas of inquiry for desktop review

Area of inquiry	Discussion
1. Land tenure analysis	An underlying assumption in most government funded trail projects is that the trail would be located on public land as a starting proposition. While there are mechanisms that can be used to facilitate trails through private land tenures, public land generally provides a better and more suitable setting for public trails. Excluding private land and focusing only on public land narrowed the available study area significantly. Most of the private land is concentrated around townships and isolated strips/concentrations along the coast or Great Ocean Road. Of note is the section between Grey River and Skenes Creek, in the southwest of the study area. This location has a large swathe of private land bordering on the northern side of the Great Ocean Road, substantially reducing the available corridor for the proposed trail to areas between the Great Ocean Road and the sea.
2. Slope analysis	Using GIS data, it is possible to undertake a slope analysis. The output from this analysis is a map showing the study area broken into differently coloured slope classes. This creates a visual assessment tool that can be used to locate the trail in areas that are more amenable to trail construction – that is, avoiding very steep and very flat locations where constructing a sustainable trail is harder or more costly to achieve. The slope analysis showed that large proportions of the study site include steep slopes. Indeed, a defining characteristic of the Otway Ranges is of deeply incised gullies running down into the coast line, with flat-topped ridges between. Many of the flat-topped ridges have existing tracks on them. Slope analysis maps are provided in Section 5. Notes that these maps show the preliminary trail alignment, not a final confirmed route.
3. Identifying existing trails to be used	There are numerous existing trails within the study area. These can broadly be classified as: ► Walking trails ► Shared-use trails (i.e. cyclists and walkers) ► Mountain bike (MTB) trails ► Management Vehicle Only (MVO) tracks. In looking at the landscape, most of the trails generally follow the ridges/valleys in the landscape, travelling perpendicular to the coast, which gives them limited usefulness for this project. Furthermore, not all the existing trails provide the right type of experience. This is especially true of the MVO tracks, which are maintained primarily for management and fire purposes, rather than a visitor walking experience. However, for short distances, it may be acceptable to use some of these MVO tracks as part of a broader trail experience. Existing walking trails, especially those that are being promoted and maintained for visitor use, are assumed to be suitable for incorporation into the proposed trail alignment, subject to review and possible modification in future design stages. Use of these existing trails is deemed to be valuable, as it provides efficient use of funds and also creates connectivity between the various different trail products available.

Area of inquiry	Discussion
4. Identifying key control points – positive and negative	In trail development, a control point is a location to be included or avoided. Positive control points are those locations that the trail should include. E.g. lookout, car park, waterfall, etc. Negative control points are those locations that the trail should avoid. E.g. dangerous cliff, areas of cultural sensitivity, habitat for threatened fauna etc. There are many existing visitor nodes along the Great Ocean Rd, including waterfalls, roadside lookouts, beaches and historical markers/ monuments. Many of these have small carparks and limited visitor facilities. Most of these existing visitor nodes can be considered as positive control points to be visited by the trail.
5. Review of initial feedback	Initial feedback was largely positive and supportive of the project and generally focused on what benefits/impacts the trail would have, rather than specific feedback that might influence the design or location of the trail. Themes and comments that were received relating to trail design/location are listed in the constraints analysis later in this table.

6. Review of trail feasibility assessments	Of the various reports and documents identified, two have implications for the potential route of the proposed trail:
	1. Apollo Bay to Skenes Creek Coastal Discovery Trail – Stage 2 – Skenes Creek to Wild Dog Creek – Report of Findings and Analysis by Michael Smith and Associates, 2018
	2. Surf Coast Walk Feasibility Study Final Report by Insight Leisure Planning, 2008.
	
	The Apollo Bay to Skenes Creek report outlines the findings of an investigation into the development of a trail between Apollo Bay and Skenes Creek. It only has a small focus area, so doesn't provide much guidance on route options for this project. However, the issues and challenges identified in this report and the solutions proposed are very relevant to this project. This trail has already been funded.
	
	The Surf Coast Walk Feasibility Study was prepared in 2008 and outlines the route for the Surf Coast Walk all the way from Torquay to Cumberland River. This trail has now been constructed from Torquay to Fairhaven.
	
	The route identified in the 2008 Feasibility Study from Fairhaven to Cumberland River is very relevant to this project and was carefully reviewed prior to fieldwork. The proposed route in the Feasibility Study was:
	
	► From Fairhaven it headed west (along the beach) to the end of the beach for approx. 4.3km
	► From the end of the beach it followed the Great Ocean Rd for approx. 1.2km – the report didn't elaborate on how this would be achieved in what is a very narrow corridor constrained by topography (i.e. steep slopes and cliffs) and private property.
	► Where the road heads inland between Cinema Point and Big Hill, the proposed route headed further inland, following Grassy Creek upstream until intersecting with an existing MVO track called Big Hill Track
	► At this point, it was split into two possible options:
	  ► The first option headed southeast along Big Hill Track to the Big Hill locality. It then followed an existing power-line easement southwest until intersecting with Reedy Track/Broadbent Rd, which was followed down to the coast. The remaining 3km to Lorne followed the coast along the beach/rock platforms
	  ► The second option took a long inland detour using existing MVO tracks, entering Lorne adjacent to the golf course, where the two routes re-joined
	► The final section from Lorne to Cumberland River utilises mostly existing walking tracks.
	
	The route options presented in the 2008 Feasibility Study uses existing trails only. By constraining itself to existing trails only, the route misses a number of exciting opportunities and features, especially in and around Cumberland River – for example, it doesn't visit either Castle Rock lookout or Sheoak Falls. Overall, the route presented in the 2008 Feasibility Study represents the best route possible if using existing trails only. However, the use of existing trails only is not deemed to provide a world-class experience, and therefore the 2008 route has not been adopted in this project.

Area of inquiry	Discussion
	 ***Map from Surf Coast Walk Feasibility Study, 2008***
7. Consideration of trail users, types and standards	There are three possible user categories for the proposed trail: ► Pedestrians (i.e. walkers/hikers/runners) ► Cyclists (i.e. primarily mountain bike riders) ► Shared-use (i.e. cyclists and walkers). There is an Australian Standard for the classification and signage of walking tracks – *AS 2156.1-2001 Walking tracks - Classification and Signage*. This standard provides for five different classes of trails, based on parameters such as width, gradient, surface, presence of steps etc. There are numerous guidelines for the design, classification and signage of mountain bike trails, published by organisations such as the International Mountain Bicycling Association (IMBA) or Mountain Bike Australia (MTBA).
8. Constraints analysis	Themes and comments that were received relating to trail design/location included: ► Trail provides an opportunity to better connect communities and the network of existing trails ► Acknowledgement that a solely coastal route would be very challenging and costly to build ► Broad support for cyclists and walkers to be accommodated, but less support for a shared-use trail ► Desire for the trail to showcase the natural environment, not dominate it

Area of inquiry	Discussion
	► Strong interest in a route that travels along the coast and through the forest, highlighting the variety of interesting landscapes – coastal cliffs, beaches, forest, bush, waterfalls, hills, rivers, coastal towns, shipwrecks etc. ► Special lookouts and vantage points should be included where possible ► Support for a 'wow factor' to differentiate this trail from others, attract visitors and support its promotion ► Interest in providing both shorter and longer walk options Suggestions that the trail type and difficulty could change in line with the landscape to provide different user experiences along its route (i.e. a more challenging section for trail runners and hikers, a less challenging family-friendly section closer to town).

4.3 Fieldwork

With the desktop review complete, a picture began to emerge of what the trail would look like and where it would be located, the next step was to test some of these ideas in the field.

Fieldwork was conducted over a five-day period in May/June 2019. Given the project in this current stage is a feasibility study, there was no scope to undertake detailed on-ground investigations of the alignment. Rather the goal of fieldwork was to identify a conceptual alignment for the proposed trail that is feasible to construct, subject to further detailed on-ground investigations in subsequent stages.

Key objectives for the fieldwork were:

- Identify positive control points
- Identify negative control points
- Identify key entry/exit points into towns
- Identify any existing trails for incorporation into the trail
- Undertake visual assessment of landscape elements
- Assess key design issues/challenges identified through the desktop review
- Document (photos and video) key features, attractions.

5. Route development options

5.1 User groups

5.1.1 Shared vs single use trails

The project team approached the project with an open mind regarding the preferred user group/s for the proposed trail – that is, should the trail cater to pedestrians, cyclists or both at the same time (i.e. shared-use)?

While the feedback gathered during the initial consultation was supportive of catering to both groups, it was not as supportive of catering to both groups on the same trail (i.e. shared-use).

Shared-use trails can provide great experiences for all users, but there are numerous design considerations that need to be met:

- Shared-use trails need to be wide enough for easy passing in both directions – ideally 2-3m width;
- Shared-use trails need to have long forward/rearward sight-lines so users can see other users approaching. This means minimal twists and turns and blind corners;
- Shared-use trails need to minimise rider speeds – ideally, they are predominantly flat.

Another consideration was how any existing trails incorporated into the route, especially existing walking trails, would accommodate shared-use. Existing walking tracks often feature steps and other features that preclude safe use by cyclists and have not been designed and constructed to maximise enjoyment by cyclists.

Furthermore, the inclusion of any sections of beach or coastal rock platforms in the proposed trail would also preclude cyclists.

Taking these constraints into account, it was determined that the preferred model for the trail is to separate walkers and cyclists, allowing the possibility of having separate trails/routes for both user groups, that were designed to optimise the experience for that user group. The proposed route includes:

- A walking route that could incorporate existing walking trails and sections of beach/coastal rock platforms.
- A cycling route that could be longer and take a more winding inland route, avoiding beach sections and existing walking tracks.
- In some areas, where both routes utilise existing MVO tracks, it might be possible to combine both users.

It should also be noted that although the term cyclist is used frequently in this report, this should generally be interpreted to mean mountain bikers. While a ‘cycling trail’ would be available for any cyclists to use, the types of trails being considered are generally narrow, unsurfaced single-track type trails, which are generally not suitable for use on bicycles other than mountain bikes.

5.1.2 Length of trails

While the overall length of the trail from end to end is around one hundred kilometres, this does not necessarily mean that the trail will appeal only to those wishing to walk from end to end. With its multiple entry and exit points, its mix of attractions, features, landscapes and ecosystems and its interconnectedness with towns and visitor centres along the way, the trail offers broad appeal to a range of visitor groups including:

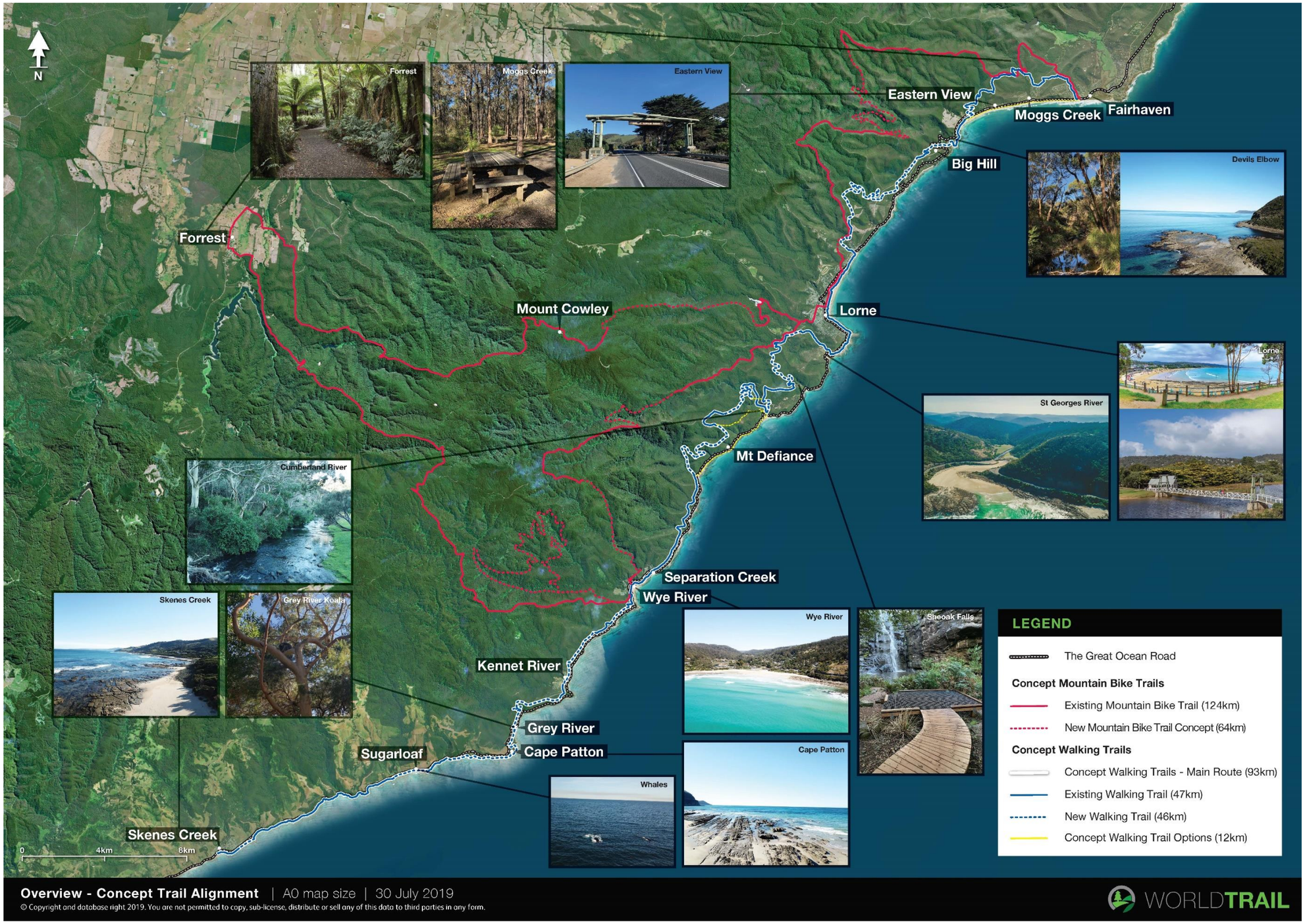
- Those that want to do a few hours walking – short linked trails and loops. In particular, these short walks would likely have broad appeal for the car-based visitors taking a driving trip along the GOR. In order to encourage these users to break their drive and stay longer, the short walk options must offer a compelling experience that they can't get on the GOR.
- Those that want a whole day experience – medium length trails. The trail presents a great opportunity for visitors staying in the towns along the route to undertake longer day length walks. In some instances these may be loop walks, starting and finishing at their accommodation, while in others they may be linear walks from one town to the next, requiring some vehicle transportation to return.
- Those who may want to walk from end to end – long distance hikers. While this is a small segment, it can be high yielding, often facilitated by tour operators, and packaged with accommodation, transport, food etc. Furthermore, when combined with the Surf Coast Walk and the Great Ocean Walk, there is an option to undertake what is likely to be one of the longest continuous walks in Australia.

5.2 Preliminary route options

Map 1 on the next page shows a preliminary concept design from early July 2019. This map includes conceptual alignments for both walking and mountain biking trails on the same map.

This map was one of a series of maps produced for phase two community and stakeholder engagement. Feedback provided in this phase of engagement helped to refine the route, leading to the final alignment presented in the next chapter.

Map 1. Preliminary Conceptual Alignments – Walking and Mountain Biking



Overview - Concept Trail Alignment | A0 map size | 30 July 2019

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6. Confirmed route option

6.1 Walking trail

6.1.1 Overview

The conceptual alignment for the entire proposed walking trail from Fairhaven to Skenes Creek is shown in Map 2 on the following page.

Concept design maps on the following pages, provide a closer view of the proposed route, breaking it down into four smaller areas.

The main changes from the preliminary route included:

- Less usage of existing management vehicle tracks
- More sections of new trail
- More suspension bridges
- Less beach/intertidal rock platforms.

The trail passes through a number of coastal towns and villages, including:

- Fairhaven
- Moggs Creek
- Big Hill
- Lorne
- Cumberland River
- Wye River
- Kennett River
- Grey River
- Skenes Creek.

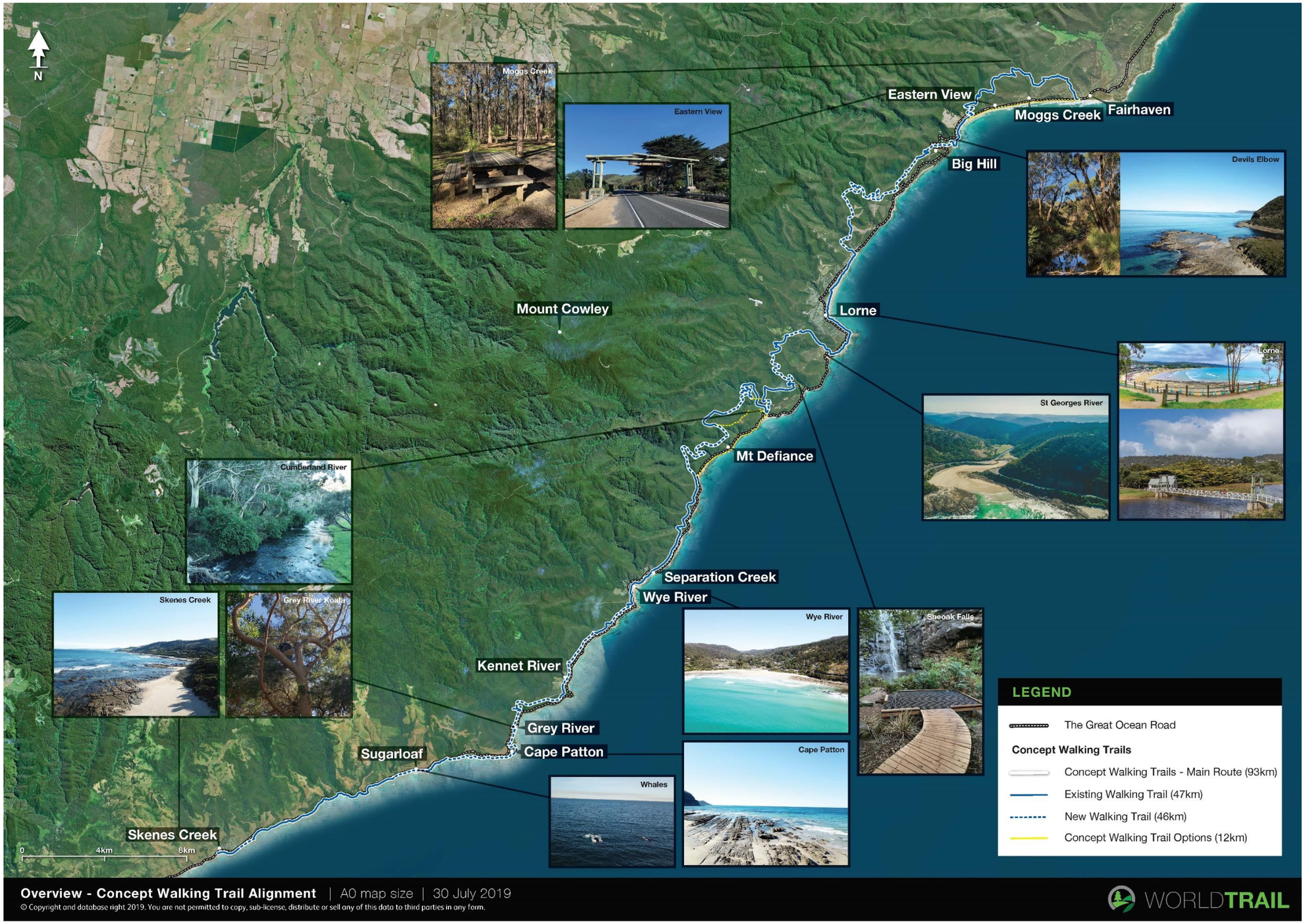
Accommodation and other services are available in most of these towns with a more detailed analysis of private sector opportunities provided in Section 6.3.

Key landscape features included along the walking trail include:

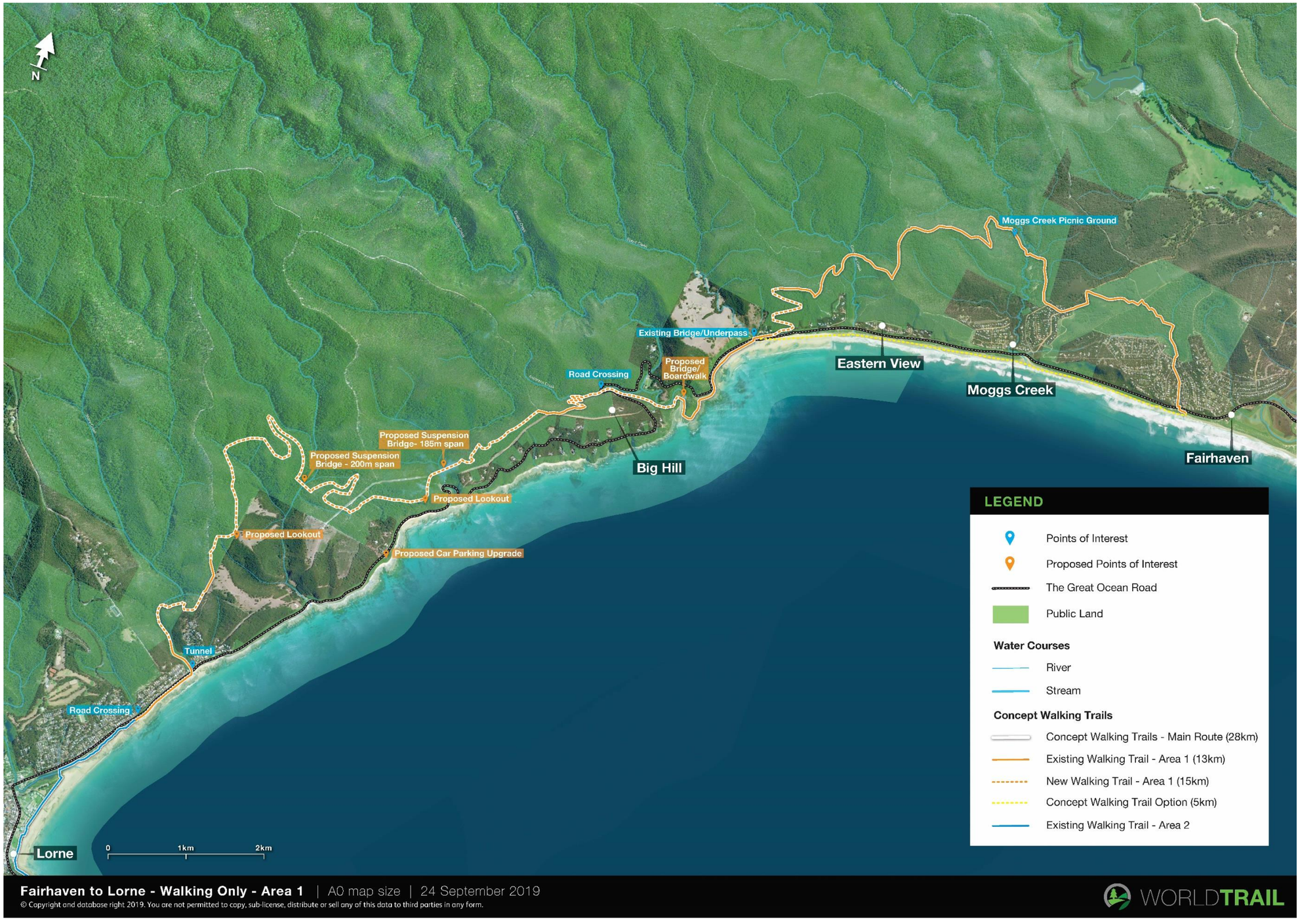
- Beaches and intertidal rock platforms
- Estuaries and waterways
- Forests
- Hills and mountains
- Gorges
- Waterfalls
- Lookouts.

Together with the Surf Coast Walk (Torquay to Fairhaven), the Skenes Creek to Apollo Bay Trail (Skenes Creek to Apollo Bay – currently in development) and the Great Ocean Walk (Apollo Bay to Twelve Apostles), these trails would create a continuous walkable trail from Torquay to the Twelve Apostles.

Map 2. Overview – Conceptual walking trail alignment



Map 3. Area 1 – Fairhaven to Lorne



Fairhaven to Lorne - Walking Only - Area 1 | A0 map size | 24 September 2019

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Map 4. Area 2 – Lorne to Wye River

Lorne to Wye River - Walking Only - Area 2 | A0 map size | 23 September 2019

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Map 5. Area 3 – Wye River to Grey River

Map 6. Area 4 – Grey River to Skenes Creek

6.1.2 Distance breakdown

For the purposes of this report the concept trail alignment has been broken down into four (4) specific areas, as shown in Maps 3 – 6 on the previous pages, being:

- Fairhaven to Lorne
- Lorne to Wye River
- Wye River to Grey River
- Grey River to Skenes Creek.

The trail distance breakdowns and estimated travel times for walkers to complete each of these sections is presented in Table 11. While many walking track users seek self-sufficient trail experiences in terms of carrying of their own food and camping equipment, the intent in this project was to design a trail experience where users could utilize existing accommodation options in townships located along the coastline.

Table 11. Distance overview

	Fairhaven to Lorne	Lorne to Wye River	Wye River to Grey River	Grey River to Skenes Creek
Distance (km)	28.4km	39.5km	12.3km	18.6km
Estimated travel time for walkers (End-to-end)	1 – 2 days	3 days	1 day	1-2 days
Accessible Townships & Accommodation Options	Moggs Creek, Eastern View, Big Hill, Big Hill Track Camp Ground, Lorne	Lorne, Allenvale, Cumberland River, Jamison Creek Camp Ground, Separation Creek, Wye River	Wye River, Kennett River, Grey River	Grey River, Skenes Creek

Multi-day and day walks

While it would be physically possible for some users to complete the sections in the table above in a day for each section, the reality for most users is that it would need to be broken down into additional sections that are manageable for the average walker in one day.

A suggested itinerary for those users that would seek to undertake the entire trail from start to finish is shown below. In total, it would be estimated that the entire 98.8km trail would take approximately seven (7) days to navigate – see Table 12 below.

Table 12. Day Walk Distances

Day	Start Location	Finish Location	Length (km)	Accessible Townships & Accommodation Options
1	Fairhaven	Big Hill (corner Big Hill Track and Mair Rd)	15.5[13]	Moggs Creek, Eastern View,
2	Big Hill	Lorne	12.8	Big Hill, Big Hill Track Camp Ground, Lorne
3	Lorne	Cumberland River	17.5	Lorne, Allenvale, Cumberland River, Separation Creek, Wye River
4	Cumberland River	Jamieson Creek	14.4	Cumberland River, Jamieson Creek Camp Ground
5	Jamieson Creek	Wye River	7.8	Jamieson Creek Camp Ground, Separation Creek, Wye River
6	Wye River	Grey River	12.2	Wye River, Kennett River, Grey River
7	Grey River	Skenes Creek	18.6	Grey River, Skenes Creek, Apollo Bay
Total			98.8	

[13] This section can be shortened by approx. 5.6km by using the beach from Fairhaven to Moggs Creek.

Loop trails

The suspension bridges are likely to be a significant drawcard for visitors. They will be popular with all visitors, not just those walking the entire trail from end to end or town to town, but also for existing day visitors looking for short walks.

In particular, the sections around Cumberland River provide some of the most spectacular short walk options as follows:

- Short loop, 5.4km - This loop starts at the Cumberland River car park and climbs up directly to Castle Rock via a proposed new trail. Just past Castle Rock, it crosses over the Cumberland River, soaring far above on a suspension bridge that spans across onto Langdale Pike. At the western end of the bridge, walkers would turn descend northward via a new traversing section of trail, back down to the river. The final section is a short walk along the existing river track, heading south back to the Cumberland River car park;
- Medium loop, 6.9km - This loop starts as above, but turns left after coming across the first suspension bridge to Langdale Pike, rather than right. It then crosses a second suspension bridge before joining onto the existing Cumberland Track and wrapping around towards the summit of Mt Defiance and heading towards the ocean. A short detour off the Cumberland Track would take walkers down to the third suspension bridge, perched up above Mt Defiance and with views down over the Great Ocean Rd and out to the ocean. Heading back up to the Cumberland Track, walkers would head east along this track, following it all the way back down to the Cumberland River car park.
- Long loop, 16km - This loop starts as above, but from the third suspension bridge above Mt Defiance, walkers would continue west, descending all the way down to Jamieson Creek. From here, walkers would cross the Great Ocean Rd to the beach then walk northeast along the beach and rock platform around the base of Mt Defiance, all the way back to Cumberland River. This walk would require low tide and low swell conditions, so would not be walkable all the time.

6.1.3 Lookout points

The trails will include several lookout points that will provide visitors with breathtaking views of the Great Ocean Road coastline. While the proposed lookout points have been selected for their natural openings and views of the coastline, they also act as a strategic point for visitors to be able to stop, rest and make a decision as to whether they continue along the trail or turn back to return to their point of departure. There will be shelters that are constructed at, or very close to, the lookout points to provide visitors with protection from the sun and inclement weather.

The proposed lookout points are:

- Western end of Big Hill
- Sheoak Falls
- Cumberland River (to complement the Castle Rock Lookout)
- Mount Defiance
- Area between Mount Defiance and Separation Creek.

6.1.4 Look and feel

For this trail to be a world-class trail, the construction must be undertaken to high standards for quality and longevity but should ideally look like it has been in place for thousands of years, blending harmoniously into the landscape.

Surface

The surface of the trail will be predominantly natural soil – that is, the tread of the trail will be constructed from the natural soil and rock found along the trail. Imported surfacing materials such as fine crushed rock may be used in some sections, but only in high traffic areas or where other requirements dictate its use, as imported materials can be visually unappealing and can introduce weeds and pathogens. Any surfacing materials that are used should be of local provenance and suitable for the intended purpose. Larger 'ballast' rock may also be imported for usage in wet soakage areas.

Built Structures

As a general rule, the trail will be designed to minimise the need for built structures.

However, where built structures are required to enhance the visitor experience or safety of the users, the design and finish will prioritise the use of local timbers and other materials that will age gracefully with time – for example, rusted steel and silvery-grey hardwood timbers. Above all, the materials must be durable enough to withstand the harsh southern climate and natural environment. Any built structures must be designed and engineered to be fit-for-purpose, to have minimal impact on the surrounding environment. They should have minimal maintenance requirements and will need to take a minimalistic approach to materials given the remote nature of the trail and difficulties transporting materials into the locations where they are required.

Rock

The trail will utilise natural rock to maximum advantage, including rock slabs, rock outcrops and loose surface rock. Rock is the ultimate trail building material, especially when it is locally sourced.

Rock slabs can provide an opportunity to allow the trail to pitch up/down at steep gradients. Rock outcrops can provide natural viewing points. Loose surface rock provides the raw materials for rock walls, rock armouring (rock armouring is a form of trail paving, used to harden the trail tread), rock gabions and even the construction of trail-side furniture like bench seats. Rock armouring will be the preferred treatment for crossing small watercourses – creeks, drainage lines and gullies, many of which remain dry for large portions of the year, only to flow heavily after sustained rainfalls. The trail encounters many such watercourses along its length, and rock armouring is an excellent treatment for hardening the surface of the trail and making it sustainable and useable under all conditions. The trail is paved with rock armouring through the watercourse and 3-4m to either side. Water flows over the top of the rock armouring, causing no damage to the trail or the rock armouring. The alternative is to construct bridges, which elevate users above the watercourse, keeping feet and tyres dry, but this treatment will only be used when necessary.

Width

The trail will generally be around 1m wide but will range from a minimum of 0.5m wide, up to a maximum of 1.5m wide to allow easy passing of users travelling in opposite directions.

Gradients

The trail gradient should generally be as low as possible, in order to maximise the sustainability of the trail and to make it appealing to the widest group of users possible. However, keeping gradients low can also increase the length of the trail, as it becomes necessary to wind back and forth with numerous switchbacks in order to climb up to the top of a ridge or hilltop. Therefore, in some instances, it can be more sustainable and even more enjoyable to take a more direct but steeper route. Heavily used, high traffic trails close to towns and visitor nodes should be designed with lower gradients, while trails in more remote areas with fewer users can have higher gradients. The gradients of a section of trail should also match the intended difficulty rating or class of the trail.

Signage

A suite of different signs will be required along the trail including trailhead signs, decision point signs, directional signs, way markers and interpretive signs. The design of these various signs must be complementary to each other, but also to the overall look and feel and aesthetic of the trail. It should echo the ideas and sentiments expressed here – the materials should be as natural as possible and durable within the outdoor environment; the colour palette should feature muted, earthy, natural tones; styling should be elegant, timeless and understated.

‘Wow’ factors

The trail will include a number of ‘wow’ factors where landscape challenges/opportunities allow. These ‘wow’ factors could be architecturally designed viewing platforms, suspension bridges across narrow gorges/valleys or sea-level engineered boardwalks or causeways. The exact nature and location of such features would be determined during the detailed design (ground-truthing) stage, but a number of potential locations have been highlighted in this report, especially for suspension bridges, which resonated strongly in community engagement.

While the cost of constructing these ‘wow’ factors is likely to be considerable, the return on investment in terms of visitation is likely to be significant. To be successful, this trail must encourage visitors to the Great Ocean Rd to get out of their cars and to stay longer. To achieve this, it must offer compelling experiences and views that can’t be experienced just by driving along the Great Ocean Rd and aren’t readily found elsewhere in Victoria.

Furthermore, there could also be unintended environmental benefits associated with the use of a suspension bridge to span across a deep valley. The alternative would be a section of conventional trail traversing down through the valley and climbing up on the other side, conceivably ending up five to ten times longer than the bridge spanning above. This increased length of trail incurs both a financial cost and an environmental cost in terms of vegetation removal and habitat displacement.

6.1.5 Supporting walks

Table 13 below outlines the existing walking trails and many of the existing MVO tracks that connect to the proposed trail. Not all of these are suitable as supporting walks – some are MVO tracks that may or may not provide an enjoyable walking experience. Further investigation would be required to determine which of these provide complementary experiences.

Table 13. Connections to other trails

	Name	Location (Connection)
1.	Surf Coast Walk	Fairhaven Surf Club
2.	Dam Walk	Moggs Creek
3.	Moggs Creek Circuit	Moggs Creek
4.	Ocean View Track	Moggs Creek
5.	Moggs Creek Track	Moggs Creek
6.	Coalmine Track	Eastern View
7.	Big Hill Track	Big Hill
8.	Reedy Track	Between Big Hill and Lorne
9.	Stony Creek Track	Between Big Hill and Lorne
10.	Stony Creek Nature Reserve Walk (Camel Lily Pond Walk)	Lorne
11.	Erskine Falls Walking Track	Lorne
12.	Teddys Lookout Circuit	Lorne
13.	Ocean Walk	St Georges River
14.	Allenvale to St Georges River Mouth	Allenvale
15.	Allenvale to Phantom Falls	Allenvale
16.	Sheoak Falls	Between Lorne and Cumberland River
17.	Nature Loop	Between Lorne and Cumberland River
18.	Castle Rock Walking Track	Cumberland River
19.	Cumberland River Track	Cumberland River
20.	Cumberland Track	Cumberland River/Mt Defiance
21.	Jamieson Track	Jamieson Creek
22.	Jamieson Creek to Wye River Walking Track	Between Jamieson Creek and Wye River
23.	Godfrey Track	Between Jamieson Creek and Wye River
24.	Wye Track	Wye River
25.	Bird Track	Wye River
26.	Carisbrook Falls Walk	Sugarloaf
27.	Old Coach (or Hickeys Cutting) Loop	Skenes Creek
28.	Skenes Creek to Apollo Bay Trail	Between Skenes Creek and Apollo Bay

6.2 Expected coastal trail users

As outlined above, the design of the trail is intended to include a mix of different terrains and user-friendly loops to cater for different user abilities, interests and time commitments, thus attracting a broader range of visitors.

The trail will be targeted at a range of groups including families, adventure visitors, young and older people who visit the GORR already and nature-based visitors who may not have visited the region. It is envisaged that the trail will also encourage local residents to actively participate in outdoors activities.

The mix of different offerings along the trail – from region-defining suspension bridges to stunning lookout points – ensures that there are numerous locations that will captivate audiences. These locations will not only offer visitors areas to stop and admire the beauty of the area but will also act as 'decision points' where users can choose to continue along the trail or turn back.

The trail has been designed to provide visitors with a large degree of control to define their own experience. Loop walks, ranging in distance from 5 kilometres to 13.5 kilometres, allow users to depart and arrive at the same location (which may be near their transport or accommodation). Alternatively, the eye-catching suspension bridges and stunning lookout points can provide opportunity for shorter walks than the loop walks whilst also ensuring that visitors can finish at the same point that they started. The entire trail connects towns – both large (with an abundance of accommodation options) and small (where there is opportunity to develop new accommodation) – that allows visitors to trek from one town to another. These various characteristics of the trail ensure that the targeted users are diverse and can be of any age and ability.

The potential opportunities for user groups are presented in the following sections.

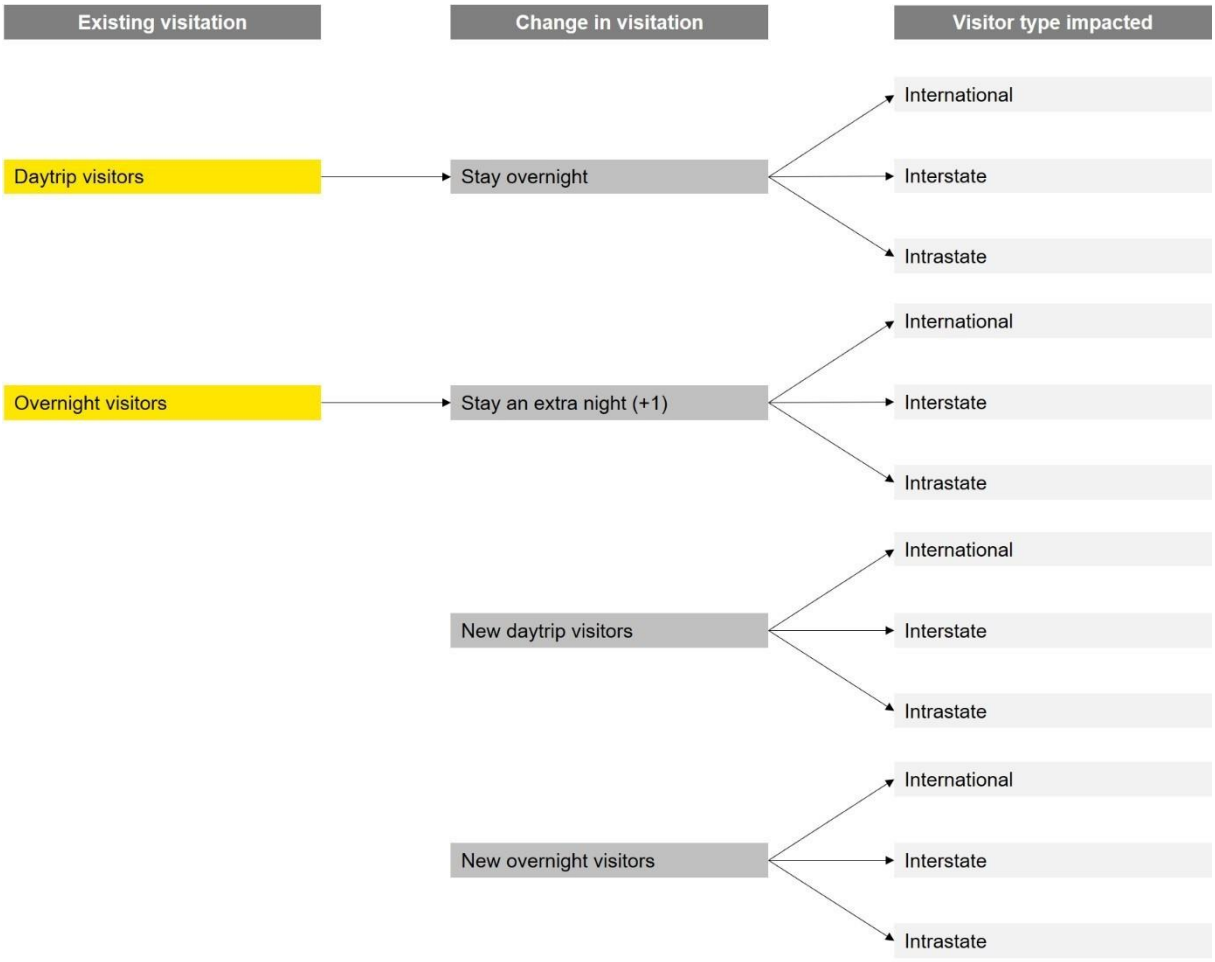
6.2.1 Domestic and international visitors

The design of a world-class trail that connects key coastal towns and key attractions in the region is expected to:

- Convert daytrip visitors to stay overnight in the study area
- Encourage overnight visitors to stay an extra night in the study area
- Attract new daytrip visitors to visit the study area
- Attract new overnight visitors to visit the study area.

The trail is set to impact on the number of domestics and international visitors and visitor nights in the region as presented diagrammatically in Figure 5 below.

Figure 5: Visitation resulting from Coastal trail



The trail presents the opportunity to capture each of these visitor groups, generating economic benefits to the region and potentially Victoria as a whole.

Converting daytrip visitors to overnight stays

Intrastate and interstate visitors have a low overnight stay rate, with only 42% of each of these groups staying overnight in the GORR (see Table 14 below).

Table 14: Great Ocean Road visitation[14]

Visitor type	Number of visitors ('000s)		Visitation split (%)		
	Overnight	Daytrip	Total	Overnight	Daytrip
Intrastate visitors	1,986	2,732	4,719	42%	58%
Interstate visitors	221	304	524	42%	58%
International visitors	239	N/A	239	N/A	N/A
Total	**2,446**	**3,036**	**5,482**	45%	55%

*Data was not available on the number of international daytrip visitors to the region, however assumptions have been made to include these visitors in the economic feasibility analysis.

The provision of coastal trails between Fairhaven and Skenes Creek is expected to result in an increase in the number of existing daytrip visitors converting to overnight stays. The creation of world-class coastal walks which connect into each of these towns, as well as the provision of several short walking loops (which link to the coastal walk) will encourage people to stop in the study area towns, slow down and potentially spend the night in the region.

[14] Adapted from Great Ocean Road Regional Tourism. 2019. *Travel to Great Ocean Road: Quarterly tracking results*

The creation of an iconic experience, including the proposal of five breathtaking suspension bridges, will attract visitors and provide visitors with a reason to stay overnight. The suspension bridges will become a key tourist attraction and will encourage a more immersive visitor experience by encouraging people to get out of their cars to experience the beautiful rainforest areas, the great outdoors and also deliver spectacular views of the coastline. The ability to provide a new "wow factor" and must-see visitor product in the study area is also expected to encourage people to stay overnight in the local area.

Extended length of stay of overnight visitors to the region

Currently, overnight visitors to the Surf Coast and Colac Otway Shires spend on average 2.5 - 2.7 nights in the region. This is below the regional Victorian average (2.8 nights per visitor) and significantly lower than other regional tourism destinations. This below average length of stay may be indicative of limited products on offer that either entice visitors to stay longer or to revisit the area once domestic overnight visitors have experienced the Twelve Apostles – the main tourist attraction at the end of the drive.

The development of a coastal trail which links all the coastal towns and provides walking opportunities is expected to encourage overnight visitors to the region to extend their stay. The enhanced offering provided by the trail is expected to lengthen the average stay of existing visitors to the region and as a result increase the total yield per trip.

New daytrip and overnight visitation

Analysis of the origin of visitation to the GORR shows that 62% of total visitors to the region originate from Greater Melbourne. A significant opportunity exists to attract additional daytrip visitors from the Greater Melbourne region, particularly those from the expanding population in the western suburbs**.**

The suspension bridges are likely to be a significant drawcard for visitors. They will be popular with all visitors, not just those walking the entire trail from end to end or town to town, but also with day visitors looking for short walks.

The sections around Cumberland River provide some spectacular short walk options for families wishing to visit the region. The provision of walking trails and commercial attractions in the region may also encourage new overnight visitors to stay in the region.

6.2.2 Local users

A walking trail between Fairhaven and Skenes Creek provides the opportunity to increase active participation and enjoyment of the outdoors by local residents. This is evidenced by a recent feasibility study indicated that approximately six per cent of local residents would use the Apollo Bay to Skenes Creek Coastal Discovery Trail at least once a week.[15] Specifically, the use of the track by local users will:

- Improve health outcomes by supporting and incentivising an active lifestyle
- Enable greater social connection between residents of different towns and foster a more profound sense of community in the region
- Enable and encourage active transport for travel between coastal towns
- Provide a safe way for locals to explore and enjoy the area, without needing to walk/run on the Great Ocean Road (thereby limiting the number of accidents)
- Stimulate greater awareness, appreciation and knowledge of the natural landscape as well as Indigenous heritage and connection to place.

[15] Michael and Smith Associates. 2018. Apollo Bay to Skenes Creek Coastal Discovery Trail: Stage 2 – Skenes Creek to Wild Dog Creek, report of findings and analysis

6.3 Accommodation requirements

In terms of the existing trails and proposed new sections of trail, there are a number of gaps in the accommodation offering available at various sections of the trail:

- **Big Hill** – There are several privately-owned holiday homes available at Big Hill, but potential demand for accommodation in this area may outstrip supply if the trail were to be constructed. This creates opportunities for additional private holiday houses or commercial accommodation development to fill any gaps in this area. The Big Hill area is a halfway point between Fairhaven and Lorne and offers spectacular ocean views from a secluded position in the bushland. Alternatively, a private transport business or tour operator could ferry users to Fairhaven or Lorne.
- **Area between Big Hill and Lorne** – There is a large section of privately-owned land between Big Hill and Lorne that could provide a unique accommodation option for visitors. For example, glamping is a luxury-type of camping that allows guests to enjoy the great outdoors without the normal hassle of traditional camping. This option could offer visitors a more nature-based experience but is still located only a short distance from Lorne.
- **Jamieson Creek, camping only** – Jamieson Creek poses another accommodation gap for users that are not self-sufficient in terms of carrying their own food and sleeping equipment as it is not located in an established coastal township. A private transport business could be established to service users back to their preferred accommodation provider once they complete a specific section of the walk.
- **Grey River** – Grey River is a very small coastal township and apart from a limited number of private residences, doesn't have an established accommodation base or significant options available for overnight stays.

It should be noted that the development of the Concept Trail alignment and the respective distances contained in this report has been developed primarily from desktop assessments. Future stages of investigation into the trail's feasibility will involve ground-truthing the alignment on foot in its entirety from start to finish. During this process, there is the opportunity to adjust the section lengths described to facilitate a more direct route between the coastal townships.

6.4 Cost estimates

6.4.1 Design costs

The project received $300,000 from the Victorian Government. This funding was used to complete the initial concept design, Feasibility Study and Business Case to request funding for the project.

Further design and planning work is required before construction. The total cost of this additional work is estimated at $850,000.

In 2018-19 DELWP also received $350,000 from the Federal Government for the trail. As a result, the Business Case will request an additional $500,000 for planning and design of the trail.

6.4.2 Construction costs

Walking trails

Detailed costing of the construction and maintenance of the trail have been developed with the assistance of World Trail, a company with expertise in trail design and construction.

Table 15 to Table 18 below provide the construction cost breakdowns for each of the four sections for the walking trails. Footnotes provided below each table provide an indication of the basis for the rates used.

Table 15. Section 1: Fairhaven to Lorne (2019 dollars)

Construction treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Existing Trail Upgrades	13,619	l/m	$30.00[16]	$408,570.00	$50.00	$680,950.00
New Trail Construction	14,326	l/m	$150.00[17]	$2,148,900.00	$200.00	$2,865,200.00
Suspension Bridges	385	l/m	$2,695.00[18]	$1,037,575.00	$4,600.00	$1,771,000.00
Small Span Bridges	16[19]	l/m	$800.00[20]	$12,800.00	$1,500.00	$24,000.00
Boardwalk Structure	60	l/m	$2,000.00	$120,000.00	$3,000.00	$180,000.00
Lookout Structure - Standard	2		$20,000.00	$40,000.00	$30,000.00	$60,000.00
Car Park Upgrades	2		$250,000.00	$5000,000.00	$300,000.00	$600,000.00
Weather Shelters	3		$20,000.00	$60,000.00	$25,000.00	$75,000.00
Cost estimate range				**$4,327,845.00**		**$6,256,150.00**
With contingency allowance 30%				**$5,626,198.50**		**$8,132,995.00**

Table 16. Section 2: Lorne to Wye River (2019 dollars)

Construction treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Existing Trail Upgrades	24,238	l/m	$30.00	$727,140.00	$50.00	$1,211,900.00
New Trail Construction	14,210	l/m	$150.00	$2,131,500.00	$200.00	$2,842,000.00

[16] Based on Class 3 surfacing upgrades to existing trails

[17] Based on a Class 3 surfaced walking track with some allowance for trail embellishments such as retaining walls, rock armouring and signage.

[18] Based on 141m span suspension bridge built on the Timber Trail in New Zealand for $380,000

[19] Based on desktop watercourse assessment, assuming each bridge is 8m in length

[20] Based on 54m span suspension bridge built in Derby, Tasmania for $250,000

Construction treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Suspension Bridges	980	l/m	$2,695.00	$2,641,100.00	$4,600.00	$4,508,000.00
Small Span Bridges	24	l/m	$800.00	$19,200.00	$1,500.00	$36,000.00
Lookout Structure – Standard	3		$20,000.00	$60,000.00	$30,000.00	$90,000.00
Lookout Structure – Feature	2		$50,000.00	$100,000.00	$100,000.00	$200,000.00
Car Park / Toilet Upgrades	1.5 (major upgrade + minor upgrade)		$500,000.00	$750,000.00	$600,000.00	$850,000.00
Weather Shelters	5		$20,000.00	$100,000.00	$25,000.00	$125,000.00
Cost Estimate Range				**$6,528,940.00**		**$9,862,900.00**
Contingency Allowance 30%				**$8,487,622.00**		**$12,821,770.00**

Table 17. Section 3: Wye River to Grey River (2019 dollars)

Construction treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Existing Trail Upgrades	2,742	l/m	$30.00	$82,260.00	$50.00	$137,100.00
New Trail Construction	9,507	l/m	$150.00		$200.00	$1,901,400.00
Small Span Bridges	32	l/m	$800.00	$25,600.00	$1,500.00	$48,000.00
Cost Estimate Range				**$1,533,910.00**		**$2,086,500.00**
Contingency Allowance 30%				**$1,994,083.00**		**$2,712,450.00**

Table 18. Section 4: Grey River to Skenes Creek (2019 dollars)

Construction Treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Existing Trail Upgrades	7,810	l/m	$0.00[21]	$0.00	$20.00	$156,200.00
New Trail Construction	4,248	l/m	$150.00	$637,200.00	$200.00	$849,600.00
Small Span Bridges	32	l/m	$800.00	$25,600.00	$1,500.00	$48,000.00
Technical Solutions (Extreme)	3,616	l/m	$5,000.00[22]	$18,080,000.00	$8,000.00	$28,928,000.00
Technical Solutions	2,934	l/m	$1000.00[23]	$2,934,000.00	$3,000.00	$8,802,000.00
Cost Estimate Range				**$21,676,800.00**		**$38,783,800.00**
Contingency Allowance 30%				**$28,179,840.00**		**$50,418,940.00**

The route from Grey River to Skenes Creek includes some of the most challenging design and construction elements in the trail. With private property running along almost the entire inland side of

[21] Some sections are located along the beach, requiring no construction works.

[22] The proposed construction treatments around Cape Patton are unknown at this stage - further technical investigations required. Price based on a sea wall revetment project previously commissioned by DEWLP costing $1,000,000 for a 3m high structure, 160m in length.

[23] The proposed construction treatments along this particular section are unknown at this stage, further technical investigation required.

the Great Ocean Rd, there is no alternative but to place the trail along the verge of the Great Ocean Rd, down along the coast at sea level, or somewhere in between.

This means that this entire 18km section is likely to be comprised of a mix of different treatments possibly including:

- Walking trail along the verge/shoulder of Great Ocean Rd, with physical barriers to separate pedestrians from vehicles
- Conventional trail construction in locations where there is sufficient space between the road and the coast
- Beach sections requiring no construction
- Intertidal rock shelf sections, potentially requiring extensive engineered structures capable of withstanding high tides and storm surges
- Rock revetment works where the Great Ocean Rd passes adjacent to the beach with no vegetation separating the road and the beach. The cost of these revetments used as 'technical solutions (extreme)' in the table above and are based on current works along the Great Ocean Road (as seen in the image below).

The table above provides a cost estimate based on a mix of different treatments but should be treated with caution as they are indicative with more investigations required. Without further on-ground investigations to determine the suitability of the different treatments and further design advice and refinement, it is difficult to refine these costs further.

Summary costs

Table 19 provides a summary of the total construction cost estimate for each segment of the walking trail.

Table 19.Summary construction cost estimates (2019 dollars)

Section reference	Cost estimate (low)	Cost estimate (high)
Section 1: Fairhaven to Lorne	$5,626,198.50	$8,132,995.00
Section 2: Lorne to Wye River	$8,487,622.00	$12,821,770.00
Section 3: Wye River to Grey River	$1,994,083.00	$2,712,450.00
Section 4: Grey River to Skenes Creek	$28,179,840.00	$50,418,940.00

Section reference	Cost estimate (low)	Cost estimate (high)
Total (including 30% contingency allowance)	**$44,287,743.50**	**$74,086,155.00**

6.4.3 Maintenance costs

Once the trail is complete and operational, there will be an ongoing to cost to manage and maintain it.

There are two main methods used in the trail industry to estimate maintenance costs. These are:

1. **Percentage of capital cost** – this method applies a percentage of the capital cost of the trail as an ongoing recurrent annual maintenance cost. Typically, the percentage applied is 5-10%. While this method is used within the trail building industry, it can be problematic as it doesn't consider local variability in climate or conditions or the initial build quality of the trail;

2. **Distance-based costing** – this method applies a per metre cost based on actual trail maintenance costs (sourced from actual trail projects elsewhere in Australia) and multiplies the cost by the distance of the trail to be maintained. While this method is preferred, it can also be problematic as the maintenance requirements can differ from location to location and project to project, and real costs can be difficult to source.

Example costing using distance-based costing

Looking at maintenance resources being applied on other trail networks in other parts of Australia, World Trail identified that 32 man-hours per kilometre of trail per year is an adequate allowance for standard trail maintenance on a well-constructed hiking or mountain biking trail.

Based on knowledge of staffing costs on similar walking trails, the total annual cost of staffing for the full trail has been estimated at $300,000. This equates to a staffing cost of approximately $3,037/km/year. The annual cost of maintenance on the trail has been estimated at $250,000 for the trail between Fairhaven and Grey River, which equates to a cost of approximately $2,530.90/km/year, plus an additional $350,000 for the section between Grey River and Skenes Creek. This would bring the estimated annual maintenance budget to approximately $900,000.

Suspension bridge maintenance costs

WT contacted suspension bridge and construction contractor Moodie, to assess the ongoing maintenance costs of suspension bridge upkeep. Annual suspension bridge maintenance costs have been estimated as 1% of the total construction cost of the suspension bridges.

Summary costs

Table 20 below is a summary of the maintenance costs for the two concept design options for the walking trails, on both an annual basis and over a 20-year period. A 20-year cash flow of the operating costs for Option 2 is included in Appendix A.

Table 20: Summary maintenance cost estimates (real)

Operating costs	Concept Design Option 1: Full walking trail	Concept Design Option 2: Part walking trail
Staffing costs	$300,000	$243,389
Trail materials costs	$600,000	$202,824
Suspension bridge maintenance costs	$62,790	$62,790
Annual maintenance costs (real)	**$962,790**	**$509,003**
Total maintenance costs over 20 years (NPV)	**$10,199,811**	**$5,392,382**

7. Mountain bike trail

7.1.1 Overview

The following section outlines the proposed mountain bike trails identified in this project.

While not shown in the map as individual trails, the mountain biking products can be thought of as four separate but intertwined products, as detailed in Table 21.

Table 21. Mountain bike trail products

No.	Name	Description	Users	Length	Discussion
1.	Fairhaven to Lorne Ride	A dual-directional point-to-point mountain biking trail connecting from the end of the Surf Coast Walk at Fairhaven to Lorne.	► Mountain bikers ► Gravel riders ► eMTB riders ► Adventure riders	44km	This trail is mostly comprised of existing management vehicle tracks, with some sections of proposed new single track to improve the experience. This will require further investigation during subsequent ground-truthing stages, as the extensive use of management vehicle tracks presents several pros and cons: ► Pros: ► Low cost ► Quick implementation ► Cons: ► Not ideal mountain bike experience
2.	Lorne – Wye River – Forrest – Lorne Multi-Day Ride	A directional multi-day off-road touring route, starting in Lorne, passing through Wye River and Forrest and returning to Lorne.	► Mountain bikers ► Gravel riders ► eMTB riders ► Adventure riders	115km (Lorne to Wye River – 34km, Wye River to Forrest – 37km, Forrest to Lorne – 44km)	As above, this trail is mostly comprised of existing management vehicle tracks, with some sections of proposed new single track to improve the experience. Most significant section of new trail is the descending gravity flow trail from Mt Cowley back down into Lorne (see no. 4 below). As above, the same consideration applies to the use of existing MVO tracks for this trail. Ideally, any new single-track sections should prioritise descents over climbs.
3.	Wye River Day Loop	A directional stand-alone loop trail starting and finishing in Wye River, providing a family friendly mountain biking experience in the bushland valley immediately inland from Wye River.	► Mountain bikers ► eMTB riders	28km (shorter loops possible)	This loop ride would follow the river valley inland, climbing gently for the first half, before descending gently back to the coast for the second half. It could be designed with a series of junctions along the way, effectively enabling riders to short-cut the loop, creating flexibility in the experiences available and increasing the likely use by novice riders.
4.	Mt Cowley Gravity Flow Trail	A directional, stand-alone point-to-point gravity flow trail from Mt Cowley to Lorne.	► Mountain bikers ► eMTB riders	14km	This descending flow trail starts at the highest point in the Otways and finishes at sea-level in Lorne, a total elevation drops of roughly 600m. This trail would be designed to appeal to novice to intermediate MTB riders, being almost entirely downhill, with minimal flat sections and no uphills. Being a single-direction point-to-point trail, riders would need to be transported to the start at Mt Cowley. This creates a business opportunity to 'shuttle' riders. This business could be based out of Lorne and would be supplemented by bike hire, MTB tuition, retail etc.

Map 7. Mountain biking trail

7.1.2 Expected users

The proposed mountain bike trails are expected to attract a new and expanded visitor market to the region who may not have considered the GORR or specifically the study area previously.

While there are already well-established trails in Forrest, these are now becoming old and outdated. Further investment in mountain bike trails in the region could reinvigorate Forrest and attract new visitors to the region.

This project proposes new mountain biking trails which link Lorne, Wye River and Forrest. These are expected to deliver significant benefits by reinvigorating the existing mountain biking trails in Forrest and link Forrest to Lorne and Wye River. There is also the potential to link these offerings to new mountain biking trails also being developed in Anglesea.

The combination of four separate but interlinked trails within the study region is expected deliver even greater opportunities to attract mountain bikers from across Victoria and Australia.

A recent cost benefit analysis was completed on the Forrest Mountain Bike Trails project. This analysis shows that for a comprehensive redevelopment (including upgrades and enhancements to existing trails, new flow and off-road trails, a skills development area and better trail connection) the trail is expected to attract an additional 15,000 users each year.[24]

7.1.3 Construction cost estimates

The following tables provide the cost breakdowns for each of the four sections for the mountain biking trails.

Table 22: Section 1: Fairhaven to Lorne (2019 dollars)

Construction treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Existing Trail Upgrades	29218	l/m	$0.00[25]	$0.00	$10.00[26]	$292,180.00
New Trail Construction	14935	l/m	$30.00	$448,050.00	$50.00	$746,750.00
Small Span Bridges	40	l/m	$800.00	$32,000.00	$1,200.00	$48,000.00
Cost Estimate Range				**$480,050.00**		**$1,086,930.00**
Contingency Allowance 30%				**$624,065.00**		**$1,413,009.00**

Table 23: Section 2: Wye River - Forrest – Lorne (2019 dollars)

Construction treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Existing Trail Upgrades	88942	l/m	$0.00	$0.00	$10.00	$889,420.00
New Trail Construction	21318	l/m	$30.00[27]	$639,540.00	$50.00	$1,065,900.00
Small Span Bridges	48[28]	l/m	$800.00	$38,400.00	$1,200.00	$57,600.00

[24] MacroPlanDimasi. 2018. *Forrest Mountain Bike Trails: Economic Cost Benefit Analysis*
[25] Some existing trails may not require any upgrade works
[26] Based on minor upgrades to existing trails.
[27] Based on IMBA Blue (Intermediate) trail construction, width up to 1200mm wide.
[28] Based on desktop watercourse assessment, assuming each bridge is 8m in length and up to 1200mm wide.

Construction treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Cost Estimate Range				**$677,940.00**		**$2,012,920.00**
Contingency Allowance 30%				**$881,322.00**		**$2,616,796.00**

Table 24: Section 3: Wye River Loop (2019 dollars)

Construction treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Existing Trail Upgrades	0	l/m	$0.00	$0.00	$10.00	$0.00
New Trail Construction	27930	l/m	$30.00	$837,900.00	$50.00	$1,396,500.00
Small Span Bridges	248	l/m	$800.00	$198,400.00	$1,200.00	$297,600.00
Cost Estimate Range				**$1,036,300.00**		**$1,694,100.00**
Contingency Allowance 30%				**$1,347,190.00**		**$2,202,330.00**

Table 25: Section 4: Mt Cowley Gravity Trail (2019 dollars)

Construction treatment	Quantity	Units	Rate - Low	Cost	Rate - High	Cost
Existing Trail Upgrades	5163	l/m	$20.00	$103,260.00	$30.00	$154,890.00
New Trail Construction	9020	l/m	$45.00	$405,900.00	$65.00	$586,300.00
Small Span Bridges	0	l/m	$800.00	$0.00	$1,200.00	$0.00
Cost Estimate Range				**$509,160.00**		**$741,190.00**
Contingency Allowance 30%				**$661,908.00**		**$963,547.00**

7.1.4 Maintenance cost estimates

Table 26 below is a summary of the operating costs for the mountain bike concept design option, on both an annual basis and over a 20-year period.

Table 26: Summary maintenance cost estimates (real)

Operating costs	Concept Design Option 3: Mountain Biking trail
Staffing costs	$597,886
Trail maintenance costs	$498,238
Suspension bridge maintenance costs	-
Annual maintenance costs (real)	**$1,096,125**
Total maintenance costs over 20 years (NPV)	**$11,612,360**

8. Economic feasibility

8.1 Define concept design options

This section assesses the economic feasibility of the concept design options. The economic feasibility of the three concept design options will be assessed through a quantitative economic feasibility assessment. The three concept design options are presented in Table 27 below.

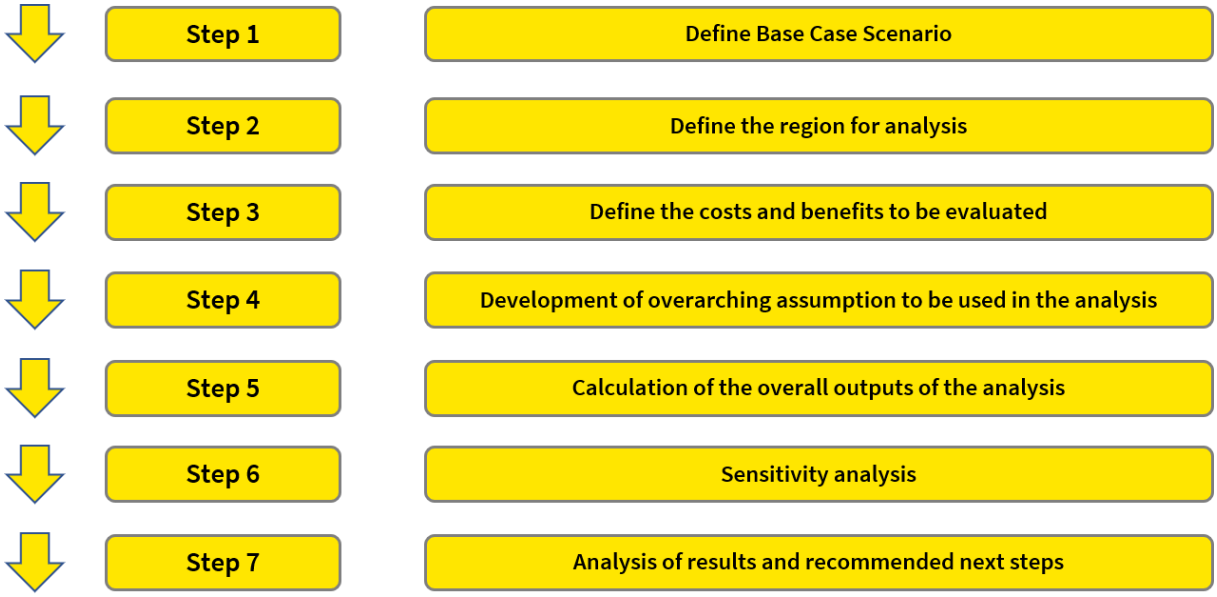
Table 27: Concept design option

Concept design option	Description
Concept Design Option 1: Full walking trail	This option includes the full length of the trail from Fairhaven to Skenes Creek
Concept Design Option 2: Part walking trial	This option includes the trail from Fairhaven to Skenes Creek excluding Grey River to Skenes Creek section of the trail.
Concept Design Option 3: Mountain Biking trail	The mountain biking trail includes the following components: ► Fairhaven to Lorne ► Wye River – Forrest – Lorne ► Wye River Loop ► Mt Cowley Gravity Trail.

8.2 Economic feasibility analysis

As part of the economic feasibility analysis, the economic benefits and costs of the concept design options have been quantified and discounted to a common point in time to determine the net present value of benefits for each concept design option. A summary of the methodology undertaken for the economic feasibility analysis is provided in Figure 6 below and presented in further detail in the following sections.

Figure 6: Economic feasibility analysis methodology



8.2.1 Step 1: Defining the Base Case scenario

To undertake the economic analysis, a Base Case must be established. The identified Base Case option is forecast visitation to the GORR without any additional investment by Government in a coastal trail between Fairhaven and Skenes Creek.

The GORR visitation estimates were categorised into five major visitor groups:

► Intrastate overnight visitors

- Interstate overnight visitors
- International overnight visitors
- Intrastate daytrip visitors
- Interstate daytrip visitors.

Base Case visitation assumptions are summarised in Table 28 below. The breakdown of visitor numbers in each group is underpinned by the total visitation for the GORR in 2018. The average annual change in visitation from 2019 (when the base case projections begin) until 2040 has been calculated using GORR visitor projections, which have been calculated until 2027, followed by a reduced long-term growth rate. The long-term growth rate is lower than the short-term rate (until 2027) as it is expected that the short-term rate will not be sustained.

Table 28: Base Case visitation[29]

Visitor type	Number of visitors (2018)	Average annual change in visitation 2018-2040 (%)	Average daily spend ($2019)	Average length of stay (days)
Intrastate overnight visitation	1,986,300	1.6%	$154	2.8
Interstate overnight visitation	220,700	1.6%	$154	2.8
International overnight	239,000	4.0%	$110	4.9
Intrastate daytrip visitation	2,732,400	2.5%	$106	1.0
Interstate daytrip visitation	303,600	2.5%	$106	1.0

8.2.2 Step 2: Define the region of analysis

For the purposes of this analysis, it is important to define the geographic boundary from which to consider the economic costs and benefits. Our analysis seeks to quantify (where possible) the costs and benefits on a regional basis. A regional analysis is better suited, as the benefits from increased visitor expenditure predominantly accrue to local residents.

A regional analysis considers only the costs and benefits that accrue to the GORR. This analysis assesses all the costs and benefits associated with the project and includes spend by international, intrastate and interstate visitors in the region who visit the region specifically to use the trail. Figure 7 below presents the region that is being considered in the economic analysis.

Figure 7: Region of analysis for regional economic feasibility analysis

[29] Great Ocean Road Regional Tourism. 2019. *Travel to Great Ocean Road: Quarterly tracking results* and Deloitte. 2018. *Visitor and accommodation forecast: Great Ocean Road*

8.2.3 Step 3: Defining the costs and benefits to be evaluated

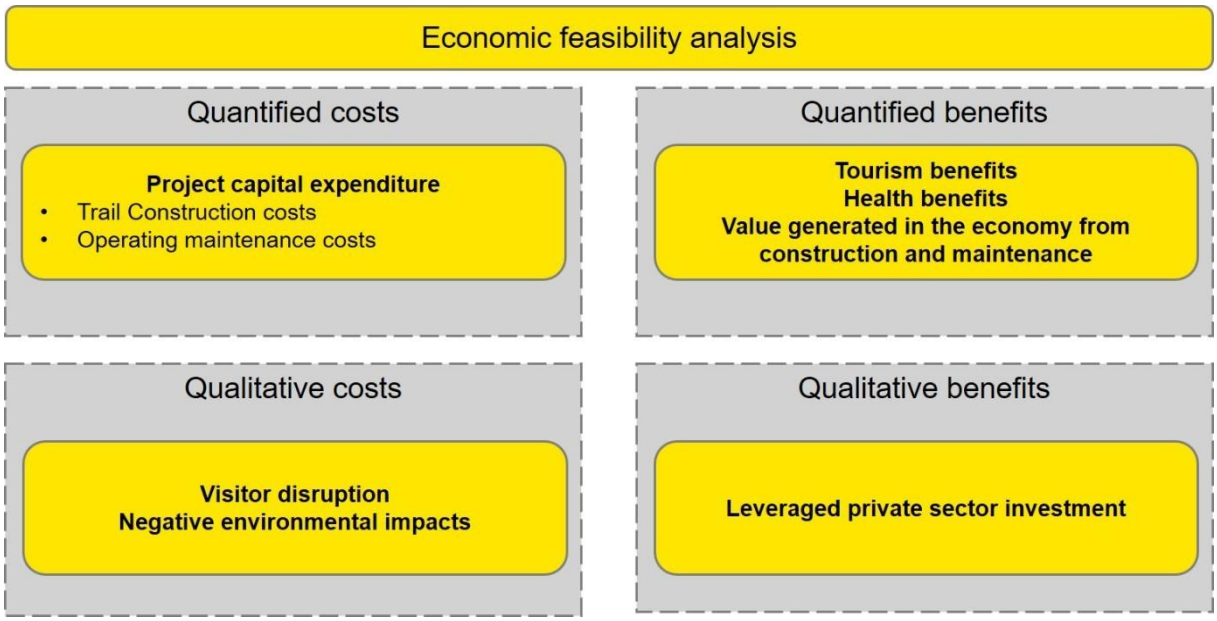
An economic feasibility analysis is complex as it involves converting (where possible) a project's costs and benefits into dollar terms. This can be difficult, as it looks to monetise both market values and non-market values (i.e. those values that are not transacted in the economy).

In an ideal world, where there are no limitations to the information available, all costs and benefits would be presented in monetary terms. In reality, this is not possible because there are significant challenges with obtaining the required information.

For this analysis, the only quantified costs are the capital and operating expenditure of each concept design option, and the only quantified benefit is the economic impact (gross value add) of visitation.

Figure 8 provides a summary of the quantitative and qualitative costs and benefits to be evaluated in the analysis. Each cost and benefit is described in further detail in the sections below.

Figure 8: Summary of costs and benefits



Quantified benefits

The following table provides an overview of the quantified benefits assessed in the economic analysis of the concept design options relative to the Base Case.

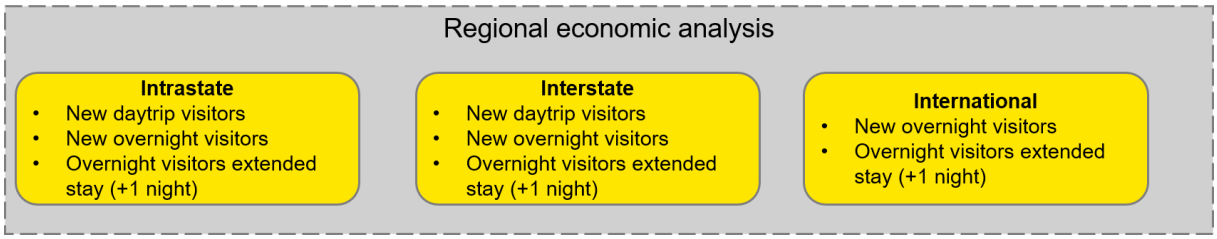
Table 29: Quantitative benefits

Benefit	Description
Visitation	Gross value add (GVA) estimates the economic impact to the region as a result of visitation directly related to those using the trail. This includes the direct value added to the region generated as a result of expenditure from out of region and overseas visitors that specifically come to or extend their stay to use the trail. GVA has been estimated using input-output (multiplier) analysis. Input-output analysis represents the total change in economic activity in a region based on the change in activity from a given sector. These models assume that the resources needed to support output are available and as such, are not 'diverted' from other activity, and so the models show the activity 'supported' by investment. The estimate includes only the incremental benefit (i.e. the difference between the Base Case and the trail concept design).
Health benefits	Several health benefits will be generated by local residents and may include: ► Avoided costs associated with a reduction in physical inactivity through increased activity and use of the new trail ► Mental and physical health social benefit associated with a reduction in physical inactivity ► Improved sense of wellbeing and positive influence on immunity and cardiovascular function ► Reduction in magnitude of physiological response to stress

Benefit	Description
	► Improved psychological health ► Alleviation of anxiety and depression.
Value generated in the economy resulting from construction spend	GVA is estimated on construction expenditure in the region for the trails. This includes both direct value-add from the expenditure, as well as indirect value-add in terms of local purchases and consumption that is a result of the direct value-add.
Value generated in the economy resulting from operating spend	GVA is estimated on expenditure in the region for the ongoing maintenance of the trails once they have been constructed. This includes both direct value-add from the expenditure, as well as indirect value-add in terms of local purchases and consumption that is a result of the direct value-add.

A breakdown of the visitation benefits is presented in Figure 9 below. The benefits will be realised from those visitors who come specifically to the GORR, or extend their stay in the region, because of the trails. These visitors are split up based on their origin as there are different visitor spend assumptions for visitors from within Victoria, interstate or outside of Australia (see section 8.2.4 for more details).

Figure 9: Breakdown of visitation benefits



Non-monetised benefits

Outlined below is the major expected benefit from this project that has not been quantified.

Table 30: Non-monetised benefits

Benefit	Description
Leveraged private sector investment	The trail is likely to stimulate private sector investment in retail and commercial development, accommodation and other tourism businesses in the region (e.g. tour operators, shuttle services for walking and mountain biking trails, restaurants, food and beverage and specialty stores).

Quantified costs

The following table provides an overview of the quantified costs included in this economic analysis for the concept design options relative to the Base Case.

Table 31: Quantified costs

Cost	Description
Project capital expenditure (including design cost)	Construction, professional services, contingency allowance and associated infrastructure costs for: ► Additional design and planning costs ► Existing trail upgrades ► New trail construction ► Suspension bridges ► Small span bridges ► Boardwalk structure ► Outlooks ► Shelter's along the trail ► Access upgrades between Big Hill and Lorne, at Cumberland River, at Lorne and between Wye River and Kennett River.
Maintenance costs	Maintenance costs relate specifically to the ongoing maintenance of the trial and include: ► Maintenance costs (equipment and materials) for the upkeep of the trail and suspension bridges ► Staffing costs to manage the maintenance of the trail.

Non-monetised costs and economic dis-benefits

A number of qualitative costs and economic dis-benefits are likely to result as a consequence of the construction of the trail. These are described below.

Table 32: Non-monetised costs and economic dis-benefits

Cost	Description
Visitor disruption	It is expected that there will be some disruption to the enjoyment of visitors due to construction of the trail in the study region. These disruptions should be comparatively short term in nature and phased to be focussed at quieter times of the day and in off peak months.
Environmental impacts	While the guiding principles for the design of the trial are to ensure a safe and environmentally sustainable route is found, there is the potential for some environmental impacts along some sections of the trail. These may include: ► Negative impacts to native vegetation/waterways ► Increased vehicle trips and local road congestion (increased CO2 congestion) ► Local road congestion ► Road maintenance wear and tear.

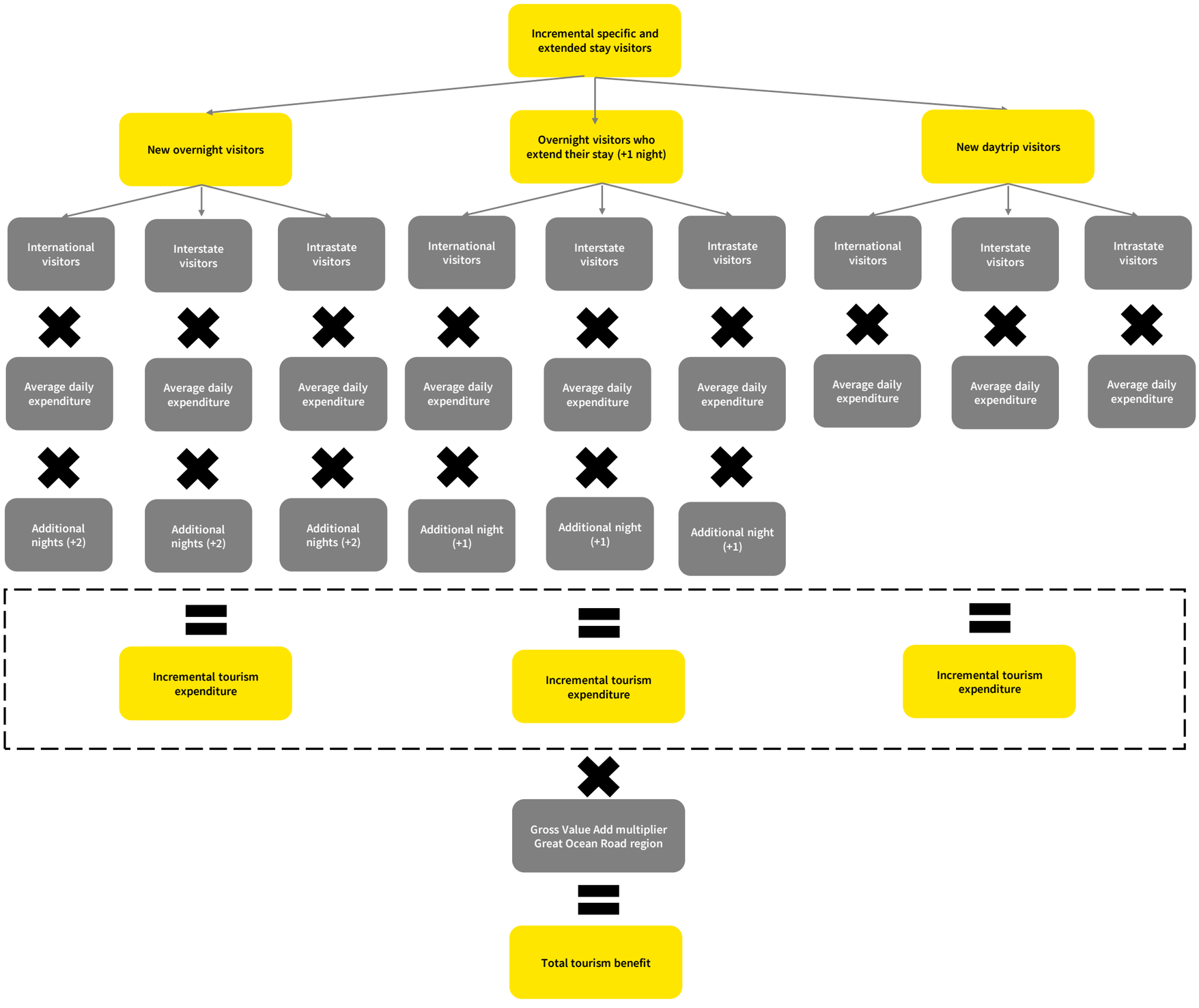
8.2.4 Step 4: Development of overarching assumptions

Visitation benefits: Value add from incremental visitor expenditure

The primary benefit of the trails will be the economic impact on the GORR because of new expenditure in the region.

The methodology used to quantify the value add for incremental visitor expenditure for the analysis is presented in Figure 10 and described in further detail in the following sections.

Figure 10: Value add for incremental visitor expenditure - Regional economic feasibility analysis



Using benchmark data from comparable walking and cycling trails and publicly available information, the following key assumptions have been developed:

- The level of specific and extended stay visitation (i.e. visitors who came to the GORR specifically to use the trail or extended their stay because of it)
- Ramp up of trail use after post construction of the trail
- Origin of specific and extended stay visitors
- Average length of stay of intrastate, interstate and international visitors
- Average daily expenditure of intrastate, interstate and international visitors.

Specific and extended stay visitation – Walking trails

The proportion of visitors to the GORR who will specifically visit or extend their stay because of the trail was estimated based on usage of other walking trails in Victoria and the corresponding overall visitation for that area.

Other trail usage data points were:

- Great Ocean Walk attracts approximately 20,000 new visitors to the region per year (mix of day and overnight visitors), however this walk is aimed a smaller group of more "hard core" bushwalkers who walk for multiple days and camp
- Grampians Peak Trail attracts approximately 16,000 visitors per year (6,000 overnight), however most sections include rocky and steep terrain and are better suited to more experienced walkers and the trail is approximately three hours from Melbourne
- Three Capes Track attracted 12,000 new visitors per year to the local region. Visitation to this trail is somewhat limited by the number of permits issued for the trail per day and the number of accommodation spots available along the trail
- Overland Track attracted 8,000 new visitors to the region per year.

The analysis only considers those visitors who specifically visit the region, or stay longer in the region, due to the Trails. This is important as it is these visitors who will bring additional expenditure to the GORR (that otherwise would not have been generated without the Trails).

Table 33 below outlines the trail users as a proportion of total visitors to the region in the major visitor groups of domestic overnight, international overnight and daytrip visitors.

Table 33: Specific and extended stay trail users as a proportion of total visitation to the GORR[30]

	%
Domestic overnight visitors	0.5%
International overnight visitors	1.0%
Daytrip visitors	0.6%

Table 34 below outlines the estimated average daily specific and extended stay visitation to the trail in Year 1, Year 5 and Year 10 of operation.

Table 34: Average daily specific and extended stay Trail users (medium visitation scenario)

	Daily additional visitation			Annual additional visitation		
Visitor type	**Year 1**	**Year 5**	**Year 10**	**Year 1**	**Year 5**	**Year 10**
Domestic overnight visitors	11	42	46	4,184	15,466	16,704

[30] Assumptions based on visitation estimates from Insight Leisure Planning. 2008. *Surf Coast Walk Feasibility Study*; Great Ocean Road Regional Tourism. 2019. *Travel to Great Ocean Road: Quarterly tracking results*; Parks Victoria. 2014. Grampians Peaks Trail 2014 Master Plan; and https://grampianstourism.com.au/wp-content/uploads/sites/4/2019/07/Grampians-Tourism-travel-snapshot-YE-Mar-19.pdf.

	Daily additional visitation			Annual additional visitation		
Visitor type	**Year 1**	**Year 5**	**Year 10**	**Year 1**	**Year 5**	**Year 10**
International overnight visitors	3	11	17	1,039	4,098	6,319
Daytrip visitors	22	90	104	8,200	32,747	37,867
Total visitors	**37**	**143**	**167**	**13,423**	**52,311**	**60,890**

Specific and extended stay visitation – Mountain biking

Estimates of specific and extended stay visitation for the mountain biking trails have been adapted from a recent analysis on upgrades to the mountain biking trails around Forrest. The total number of specific and extended stay users in each of the major visitor groups was then calculated based on the total visitation for the GORR in 2018. The users in each visitor group in the first year that the new mountain biking trails are in operation are presented below.

Table 35: Specific and extended stay visitation for mountain biking trails (first year of operation)[31]

	Total number of users in first year
Domestic overnight visitors	1,350
International overnight visitors	270
Daytrip visitors	2,880
Total	**4,500**

Ramp-up visitation

Visitation to the walking and mountain biking trails is not expected to peak immediately following the opening of the trails, as knowledge of the trails may not be widespread in the beginning and 'word of mouth' recommendations need time to be shared around. Given this information, it is assumed that visitation will not reach its 'maximum' level until the fifth year of the trail being in operation. The ramp-up assumptions for trail use post construction are presented in Table 36 below.

Table 36: Ramp up assumptions

	Year 1	Year 2	Year 3	Year 4	Year 5
Ramp up	30%	50%	70%	90%	100%

The following tables provide an overview of the key assumptions that underpin the calculation of economic benefits.

Table 37: Origin of specific and extended stay visitors[32]

	Intrastate	Interstate	International	Total
Daytrip visitors who extend their stay	13%	1%	2%	**16%**
Overnight visitors who extend their stay	13%	1%	2%	**16%**
New overnight visitors	6%	1%	1%	**8%**
New daytrip visitors	50%	6%	4%	**60%**

[31] Adapted from MacroPlanDimasi. 2018. *Forrest Mountain Bike Trails: Economic Cost Benefit Analysis*.

[32] Assumptions based on visitation estimates from Tourism Research Australia. 2019. Domestic Visitor Estimates to Victoria; and Deloitte. 2018. Visitor and accommodation forecast: Great Ocean Road.

Table 38: Average spend per day/night with additional length of stay ($2019)[33]

	Intrastate	Interstate	International
Daytrip visitors who extend their stay[34]	$106	$106	$106
Overnight visitors who extend their stay	$106	$106	$106
New overnight visitors	$154	$154	$110
New daytrip visitors	$106	$106	$106

Health benefits: local resident use

There is expected to be health benefits for local residents who utilise the walking and mountain biking trails. This benefit is quantified through avoided health costs to the Victorian economy as a result of local residents no longer being physically inactive or being less insufficiently active. The assumptions utilised to quantify this benefit are outlined below.

Population projections for the areas closest to the trails have been utilised to estimate the number of local residents who will use the trails. The main areas of consideration are:

- Surf Coast Shire (Surf Coast Rural District)
- Colac-Otway Shire (Apollo Bay-Gellibrand District)
- Colac-Otway Shire (Colac Town District).

The first two areas are used for the walking trails, while the third area is used for the mountain biking trails.

Table 39: Local resident population projections[35]

	2021	2026	2031	2036
Surf Coast Shire (Surf Coast Rural District)	11,643	12,082	12,520	12,939
Colac-Otway Shire (Apollo Bay-Gellibrand District)	3,621	3,650	3,691	3,729
Colac-Otway Shire (Colac Town District)	12,727	13,026	13,288	13,516

There are three forms of physical activity that can be measured through the use of the trails: walking, running and cycling. Walking and running can be undertaken on the walking trails, while cycling/mountain biking can be undertaken on the mountain biking trail. The benefit of each activity has been quantified using assumptions outlined in the table below.

Table 40: Health benefit assumptions

	Walking	Running	Cycling
Proportion of local residents who use trails for activity at least once per week (medium usage scenario)	6%[36]	15%[37]	12%[38]
Net avoided healthcare costs per hour (2019 dollars)[39]	$4.24	$15.89	$15.89
Average number of hours per week spent using trails (additional to any time already doing that activity)	Six hours	One hour	One hour

[33] Adapted from Great Ocean Road Regional Tourism. 2019. *Travel to Great Ocean Road: Quarterly tracking results*

[34] This is the difference in average daily spend between an overnight visitor and a daytrip visitor

[35] Department of Environment, Land, Water and Planning. 2019. *Victoria In Future population projections*

[36] Michael Smith and Associates. 2018. *Apollo Bay to Skenes Creek Coastal Discovery Trail – Stage 2 – Skenes Creek to Wild Dog Creek – Report of Findings and Analysis*

[37] Average of age groups taken from VicHealth. 2016. *VicHealth Indicators Survey 2015 Selected findings*

[38] Average of age groups taken from VicHealth. 2016. *VicHealth Indicators Survey 2015 Selected findings*

[39] Marsden Jacob. 2016. *Victoria's Nature-Based Outdoor Economy*

Economic Value Generated

The benefit of construction and maintenance expenditure for the trails generates economic benefits in the form of gross value-add. It includes both direct value-add from the expenditure, as well as indirect value-add in terms of local purchases and consumption that is a result of the direct value-add.

Table 41: Proportion of construction and operating maintenance expenditure that corresponds to value-add[40]

	Proportion of expenditure that corresponds to value-add
Design costs	88.2%
Construction costs	70.9%
Operating maintenance costs (including staffing)	70.9%

Quantified costs

The expected annual costs of the trail as presented in Section 6 have been used for the economic analysis. The costs used in the analysis (summarised in Table 42 below) represent an average of the high and low estimates provided by World Trail in their initial concept design (refer to Section 6).

Table 42: Quantified costs ($m) (real)

	Concept Design Option 1: Full walking trail	Concept Design Option 2: Part walking trial	Concept Design Option 3: Mountain Biking trail
Total capital cost	$59.7	$20.3	$5.9
Total operating cost	$10.2	$5.4	$11.6
Total cost	**$69.9**	**$25.7**	**$17.5**

8.2.5 Step 5: Calculation of the overall outputs of the analysis

Our analysis has estimated the economic costs and benefits associated with each concept design option in comparison to the Base Case scenario.

Summary of costs and benefits

The overall value for money of an option is summarised by the BCR. BCRs represent the economic gain to the GORR realised from each concept design option (i.e. benefits) versus the amount it costs to execute that option (i.e. costs). If the benefits are greater than the costs, then the BCR is greater than 1.0. Conceptually, a BCR below 1.0 can be thought of as spending $1 to achieve less than $1 in financial, economic, social and environmental benefits.

There are limitations, however, to the completeness of any BCR analysis. Some benefits and costs cannot be practically quantified due to a lack of data. In this instance, the benefits and costs (or dis-benefits) that have not been quantified are private sector investment, visitor disruptions and environmental impacts. This means that qualitative factors and the overall strategic environment must also be considered when making a decision on the preferred concept design.

Table 43 below summarises the NPV results of the economic feasibility analysis by major cost and benefit categories for the medium visitation scenario.

Table 43: Cost-benefit analysis results – Regional economic analysis (real) ($m)

	Concept Design Option 1: Full walking trail	Concept Design Option 2: Part walking trail	Concept Design Option 3: Mountain Biking trails
Costs (PV) ($m)			
Capital expenditure	$59.7	$20.3	$5.9
Operating expenditure	$10.2	$5.4	$11.6
Total	**$69.9**	**$25.7**	**$17.5**
Benefits (PV) ($m)			

[40] Calculated from input-output multiplier analysis from Remplan

	Concept Design Option 1: Full walking trail	Concept Design Option 2: Part walking trail	Concept Design Option 3: Mountain Biking trails
Visitation	$45.9	$42.2	$14.1
Health benefit	$0.5	$0.5	$0.2
Construction impact	$42.7	$14.7	$4.6
Maintenance impact	$7.2	$3.8	$8.2
Total	**$96.3**	**$61.3**	**$27.2**
Outputs			
Net Benefit (Cost)	$26.4	$35.6	$9.7
Benefit-Cost Ratio (BCR)	**1.38**	**2.39**	**1.55**

20-year cash flows of the costs and the economic benefits are provided in Appendix A.

8.2.6 Step 6: Sensitivity analysis

Due to the uncertain nature of economic analyses and forecasting in general, it is often helpful to have a range of estimates for the costs and benefits within which the true costs and benefits are likely to fall. Sensitivity analysis is a process used to test the responsiveness of the model results to changes in the model inputs (costs and benefits) and thereby produce a range of outputs rather than a point estimate.

The following scenarios examined the sensitivities of the following parameters as related to **visitation estimates** and **quantified costs**.

The key findings from the sensitivity analysis and the impact on the benefit cost ratio are presented below. The high and low-cost sensitivities are considered against one another with visitation constant at the medium scenario, while the visitation sensitivities are compared with costs held at a medium level (the average of the high and low costs).

Sensitivity analysis of costs illustrates that all options still generate a positive BCR if costs were increased by 25%, but Option 2 is the only option to maintain a positive BCR and generate significant overall benefits.

Sensitivity analysis of visitation illustrates that if visitation were approximately 40% lower than expectations then Option 1 would only just maintain a positive BCR, but Option 2 would still have significant positive BCR and continue to generate considerable benefits.

Table 44: Sensitivity analysis of costs (with medium visitation scenario) – Option 2

	Concept Design Option 1: Full walking trail	Concept Design Option 2: Part walking trail	Concept Design Option 3: Mountain Biking trails
Low cost	1.56	2.68	1.63
Average cost	1.38	2.39	1.55
High cost	1.26	2.17	1.47

Table 45: Sensitivity analysis of visitation (with average cost scenario)

	Concept Design Option 1: Full walking trail	Concept Design Option 2: Part walking trail	Concept Design Option 3: Mountain Biking trails
Low visitation and local resident usage	1.12	1.73	1.30
Medium visitation and local resident usage	1.38	2.39	1.55
High visitation and local resident usage	1.69	3.16	1.86

9. Analysis of results and recommended next steps

The economic feasibility analysis has identified **Concept Design Option 2: Part walking trail (excluding Grey River to Skenes Creek**) as the preferred concept design and most economically viable option. This option delivers the highest BCR of the three concept designs of 2.39, as well as the highest estimated net benefit of $35.6 million (compared to $26.4 million for the full walking trail and $9.7 million for the mountain biking trail).

The indicative cost estimate for **Concept Design Option 1: Full walking trail** is expected to be significantly greater than the other design options assessed. The section of trail between Grey River and Skenes Creek includes some of the most challenging design and construction elements on the trail which requires complex research into the design of the trail from Grey River to Skenes Creek and the subsequent technical solutions required (including intertidal rock shelf sections and rock revetment works). Consequently, the additional benefit generated through increased visitation to this section of the trail are far outweighed by the additional trail construction costs. Based on the medium cost and visitation scenario estimates, a BCR of 1.38 would result. If costs were to increase by 25%, or if specific and extended stay visitation was approximately 40% lower, a positive BCR would still be generated but it would be much closer to 1.0.

While the costs for **Concept Design Option 3: Mountain Biking trails** are expected to be lower than the preferred concept design option, the trail is not expected to generate the same benefits from tourism as the walking trail. As there are already a significant number of mountain bikers that use trails in and around the Forrest area (approximately 34,000[41]), the incremental benefit generated from new users and those who stay in the region longer as a result of the new mountain biking trail is not expected to be as significant as those using the new walking trail. Based on the medium cost and visitation scenario estimates, a BCR of 1.55 would result for this option. If costs were to increase by 25%, or if specific and extended stay visitation was approximately 40% lower, a positive BCR would still be generated but it would fall to 1.30 with the lower visitation.

This concept design will be used to develop a number of project options to be assessed in the Full Business Case. Project options are likely to range from a do-minimum option representative of the construction of a shorter length of the trail through to the construction of the entire trail.

The viability of each project option will then be determined via a full CBA. The full CBA will confirm capital and ongoing cost estimates and will look to quantify health benefits for local residents, construction employment and ongoing employment for the project options.

9.1 Next steps

In moving forward with the development of the trails, there are a number of steps to be undertaken to progress towards construction. These next steps may include:

1. Trails Master Plan (including ground-truthing)

The next step is to prepare a Trails Master Plan. The Master Plan is a far more detailed investigation of the proposed route.

The Trails Master Plan would involve extensive stakeholder and community consultation, including (but not limited to) land owners along/near the route, land managers, road authority, conservation groups, Traditional Owners, local councils, coastal committees etc.

A major component of the Trails Master Plan is extensive fieldwork to determine the exact alignments of all the proposed new trails – this is referred to as 'ground-truthing'. The conceptual alignments provided in this feasibility study form the starting point for this phase, but the trail alignments generally change fairly significantly during ground-truthing, in response to specific conditions encountered during the field. Once the entire trail has been ground-truthed, the exact

[41] MacroPlanDimasi. 2018. *Forrest Mountain Bike Trails: Economic Cost Benefit Analysis*

position and length and construction methods are known, allowing a more detailed and accurate construction cost to be prepared.

The Trails Master Plan would require input from specialists with expertise in geotechnical specialists, coastal morphology, tide modelling, landscape architecture, architecture, structural engineering, flora and fauna/ecology, archaeology and so on, to ensure a safe and environmentally sustainable route is found and to design any infrastructure that may be required.

It will be very important to engage with the Traditional Owners of the land that the trails will be constructed upon during the next planning phase. The Easter Maar Aboriginal Corporation (EMAC) has been involved extensively in the stakeholder consultation process until now and has expressed interest in participating in the design process and ongoing operation of the trails. Ongoing engagement with EMAC ensures that the trails will respect the local Aboriginal community, and there is potential to build an ongoing partnership that could continue into the operation phase of the project.

The final Trails Master Plan would provide maps, descriptions and exact lengths for all trails. These alignments are also marked in the field using coloured flagging tape and recorded and mapped using GPS.

2. Permits and approvals

With all trails ground-truthed, the track logs can be provided to relevant planning authorities for approval. In some cases, further field investigations may be required to ensure that the trails will not impact on any areas of high cultural or ecological significance.

3. Private sector opportunities

There are potential opportunities for private sector investment in the GORR which would further extend the economic benefits of this project. These opportunities could include:

- New accommodation in areas that may be under-resourced once the walking trails are in full operation (see Section 6.3 for more information)
- Shuttle bus service to transport visitors between towns and to major points along the trails (e.g. car parks)
- New food and beverage offerings at different points along the trails, including smaller towns which currently may have limited offerings
- Potential events that could be held along the trails (e.g. charity walks and running events).

4. Trail construction

With all the necessary permits and approvals in place the final step in the process is the construction of the trail.

The steps shown above are a simplified version of the overall process – there are many other steps that need to occur in conjunction with those shown above, to secure political, community and land manager support for the project and to seek the necessary funding required. Consultation may need to occur more frequently than shown here – in essence, consultation may be ongoing and critical throughout the entire process shown above.

Appendix A Cost and benefits cash flow – preferred option (Option 2)

Table 46: 20-year costs cash flow ($m) (real)

	Pre-operation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	NPV
Capital costs	20.29																					
Operating costs		0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	5.39
Total costs	**20.29**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	**5.39**

Table 47: 20-year economic benefits cash flow ($m) (real)

	Pre-operation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	NPV
Tourism		1.24	2.02	2.92	3.92	4.53	4.67	4.88	5.09	5.21	5.27	5.32	5.37	5.43	5.48	5.54	5.59	5.65	5.70	5.76	5.82	45.92
Health impact		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.50
Design impact	0.36																					
Construction impact	14.39																					
Maintenance impact		0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	3.82
Total benefit	**14.75**	**1.64**	**2.43**	**3.33**	**4.33**	**4.94**	**5.08**	**5.29**	**5.50**	**5.62**	**5.68**	**5.73**	**5.78**	**5.84**	**5.89**	**5.94**	**6.00**	**6.06**	**6.11**	**6.17**	**6.23**	**50.25**

Appendix B Consultation summary report

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